Facility: Nine Mile Point # 2 Examination Level (circle one): **SRO**		Date of Examination: 12/06/99 Operating Test Number: Cat A Test 1
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Plant Parameter Verification	JPM: (New) Water Chemistry Operating Limits Determination (SRO ONLY). K/A 2.1.33, 2.1.34
	Shift Turnover	Question: 1. Given watchstanding history, medical data and training data, determine requirements to stand watches. (Active license requirements).
		Question: 2. Given the number of shift personnel, determine if minmum manning reqiurements are being met. K/A 2.1.1, 2.1.3, 2.1.4, 2.1.5
A.2	Piping and Instrument Drawings	Question: 1. Using the PIDs, trace the Fire Protection Water flow path from the motor driven fire water pump 2FPW-P2, to the RPV using RHS Train A. 2RHS*MOV24A is available for injection. Where necessary, add EOP equipment to be used. K/A 2.1.24 *PRA (IPE: Fire Water – RHR Crosstie)*
		Question: 2. Using a PID drawing, describe how the motor operated Testable Check Bypass Valve RHS*MOV67B will respond to a LOCA signal. K/A 2.1.24
A.3	Radiation Work Permits	Question 1. Review the attached Survey 68 for Turbine Building 277' Condensate Demin Valve Aisle and identify the radiological hazard(s). K/A 2.3.10
		Question 2. Review a Radiation work Permit (22, Revision 313), and identify sign in requirements for Auxiliary Operators, protective clothing requirements and actions to be taken if an AO has to be sent into an area with a general area radiation level of 20 mrem/hr for four (4) hours? K/A 2.3.10
A.4	Emergency Classification	JPM: (New) Emergency Plan classification of each SRO candidates scenario. (Submitted with and to be administered after each scenario). K/A 2.4.29, 2.4.41

NIAGARA MOHAWK POWER CORPORATION
OPERATOR JOB PERFORMANCE MEASURE

Title: Water Chemistry Operating Limits Determination (SRO ONLY) Revision: 0

Task Number: 341-022-03-03-2

Approvals:

10/20/99
General Supervisor Operations Training (Designee) Date

10-19-99
General Supervisor Operations (Designee) Date

NA Exam Security
Configuration Control Date

Performer:_____(SRO)

Trainer/Evaluator:_____

Evaluation Method: _____Perform ____X__Simulate

Evaluation Location: _____Plant _____Simulator

Expected Completion Time: 8 minutes Time Critical Task: NO Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: (Completion time based on the start location)

Plant Control Room

Simulator Set-up:

N/A

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SSS / CSO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SSS / CSO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SSS, CSO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. GAP-CHE-01, Rev 02, BWR Water Chemistry Operating Limits
2. T.S. 3.4.4
3. T.S. Table 3.4.4-1
4. NUREG
   K/A 2.1.33 (4.0)
   K/A 2.1.34 (2.9)

Tools and Equipment:

1. None.

Task Standard:

Determine that the Action Level 2 guidelines of GAP-CHE-01, Enclosure 2, for reactor water conductivity are exceeded. Determines a unit shutdown to COLD SHUTDOWN is required if the parameter is NOT below the limit within 24 hours from the time of occurrence.

Initial Conditions:

1. The unit is at 50% power. There are no equipment inoperabilities.

"(Operator's name), Chemistry has called the Control Room and informed you that reactor coolant system conductivity is 1.2 umho/cm @25°C. Evaluate plant chemistry and take any necessary actions based on your evaluation."

Performance Steps	*Standard*	*Grade*	*Comments*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary*	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat	
RECORD START TIME _____			
•2. Obtain a copy of the reference procedure and/or Tech Specs and review/utilize the correct section of the procedure/Tech Specs.	GAP-CHE-01 Enclosure 2 referenced. Tech Spec 3.4.4 and Table 3.4.4-1 referenced.	Sat/Unsat	
•3. If an action level of Enclosure 2 is exceeded, then take the actions as applicable.	Determine action level 2 is exceeded *(>1.0)* GAP-CHE-01 Section 3.2.2, Action Level 2 value exceeded, referenced.	**Pass/Fail**	
•3. Notify the Chemistry Supervisor and the SSS of the parameter that has exceeded Action Level 2 limits. **Cue: As the Chemistry Supervisor, acknowledge the report.** **Cue: As the SSS, acknowledge the report.**	Notify the Chemistry Supervisor. Notify the SSS. Note: Simulated unless in the simulator.	Sat/Unsat	

Performance Steps	*Standard*	*Grade*	*Comments*
•4. If the parameter exceeds a Tech Spec limit, then take the Tech Spec actions. **Cue: If asked, the last reported conductivity 4 hours ago was 0.8 umho/cm @25°C.** **Cue: If asked, this is the first time this year that the Tech Spec 3.4.4 limits are NOT met.**	Tech Table 3.4.4-1 referenced. Determines conductivity limit is exceeded. Determines if conductivity is not within limits in 72 hours, then the unit must be in at least HOT SHUTDOWN within the following 6 hours (78 hours from entry into the Tech Spec actions). Note: The requirement is to be in STARTUP within the following 6 hours, however, since there are no provisions to proceed to startup the correct action is to be in MODE 3 within the same allotted time to meet the requirement.	Sat/Unsat	
•5. If the parameter is a fuel warranty parameter, then immediately notify fuels and management.	Determines NO fuel warranty limit is exceeded.	Sat/Unsat	
•6. If individual cond. Demin. outlet conductivity is above the limit, then remove the demin. from service.	Determines NO cond. demin. outlet limit is exceeded.	Sat/Unsat	
•7. If condensate demineralizer inlet conductivity is above the limit, then isolate the affected waterbox.	Determines NO condensate demineralizer inlet limit is exceeded.	Sat/Unsat	

Performance Steps	*Standard*	*Grade*	*Comments*
•8. If the parameter is NOT below the Action Level 2 limit within 24 hours, initiate an orderly shutdown to place the unit in COLD SHUTDOWN. **Cue: If asked, parameter will NOT be restored below limit for 48 hours.** **Cue: If asked, operation at lower power will NOT reduce exposure of components to the parameter.**	Determines that a shutdown must be initiated when 24 hours expires. Determines the plant must be placed in COLD SHUTDOWN as rapidly as operating conditions permit. Note: The candidate may take the conservative action and start a shutdown before 24 hours expires.	**Pass/Fail**	
•9. After the unit is shutdown, identify the cause, correcti ve actions, and receive SORC approval prior to restart.	Recognizes a root cause is required after shutdown. Recognize SORC approval is required for restart.	Sat/Unsat	

End of JPM

TERMINATING CUE: Determines a unit shutdown to COLD SHUTDOWN is required if the parameter is NOT below the limit within 24 hours from the time of occurrence.

RECORD STOP TIME_____

3/4.4.4 CHEMISTRY

LIMITING CONDITIONS FOR OPERATION

3.4.4 The chemistry of the reactor coolant system (RCS)shall be maintained within the limits specified in Table 3.4.4-1.

APPLICABILITY: At all times.

ACTION:

a. In OPERATIONAL CONDITION 1:

1. With the conductivity, chloride concentration, or pH exceeding the limit specified in Table 3.4.4-1 for less than 72 hours during one continuous time interval and, for conductivity and chloride concentration for less than 336 hours per year, but with the conductivity less than 10 μmho/cm at 25°C and with the chloride concentration less than 0.5 ppm, this need not be reported to the Commission and the provisions of Specification 3.0.4 are not applicable.

2. With the conductivity, chloride concentration, or pH exceeding the limit specified in Table 3.4.4-1 for more than 72 hours during one continuous time interval or with the conductivity and chloride concentration exceeding the limit specified in Table 3.4.4-1 for more than 336 hours per year, be in at least STARTUP within the next 6 hours.

3. With the conductivity exceeding 10 μmho/cm at 25°C or chloride concentration exceeding 0.5 ppm, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

b. In OPERATIONAL CONDITIONS 2 and 3 with the conductivity, chloride concentration, or pH exceeding the limit specified in Table 3.4.4-1 for more than 48 hours during one continuous time interval, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. At all other times:

1. With the:

a) Conductivity or pH exceeding the limit specified in Table 3.4.4-1, restore the conductivity and pH to within the limit within 72 hours, or

b) Chloride concentration exceeding the limit specified in Table 3.4.4-1, restore the chloride concentration to within the limit within 24 hours, or

LIMITING CONDITIONS FOR OPERATION

3.4.4 (Continued)

ACTION:

c.1.b) (Continued)

perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the reactor coolant system. Determine that the structural integrity of the reactor coolant system remains acceptable for continued operation before proceeding to OPERATIONAL CONDITION 3.

2. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.4.4 The reactor coolant shall be determined to be within the specified chemistry limit by:

a. Measurement before pressurizing the reactor during each startup, if not performed within the previous 72 hours.

b. Analyzing a sample of the reactor coolant for:

1. Chlorides at least once per:

a) 72 hours, and
b) 8 hours whenever conductivity is greater than the limit in Table 3.4.4-1.

2. Conductivity at least once per 72 hours.

3. pH at least once per:

a) 72 hours, and
b) 8 hours whenever conductivity is greater than the limit in Table 3.4.4-1.

c. Continuously recording the conductivity of the reactor coolant, or, when the continuous recording conductivity monitor is inoperable, for up to 31 days, obtaining an in-line conductivity measurement at least once per:

1. 4 hours in OPERATIONAL CONDITIONS 1, 2, and 3, and
2. 24 hours at all other times.

SURVEILLANCE REQUIREMENTS

4.4.4 (Continued)

d. Performing a CHANNEL CHECK of the continuous conductivity monitor with an in-line flow cell at least once per:

1. 7 days, and
2. 24 hours whenever conductivity is greater than the limit in Table 3.4.4-1.

TABLE 3.4.4-1

REACTOR COOLANT SYSTEM CHEMISTRY LIMITS

OPERATIONAL CONDITION	CHLORIDES	CONDUCTIVITY (μmho/cm @25°C)	pH
1	$\leq$0.2 ppm	$\leq$1.0	5.6 $\leq$ pH $\leq$ 8.6
2 and 3	$\leq$0.1 ppm	$\leq$2.0	5.6 $\leq$ pH $\leq$ 8.6
At all other times	$\leq$0.5 ppm	$\leq$10.0	5.3 $\leq$ pH $\leq$ 8.6

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-CHE-01

REVISION 02

BWR WATER CHEMISTRY OPERATING LIMITS

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

R G Smith
Plant Manager - Unit 1

10/14/98
Date

Approved by:
N. C. Paleologos

Nick Paleologos
Plant Manager - Unit 2

10-15-98
Date

Effective Date: 10/15/98

TABLE OF CONTENTS

1.0 PURPOSE

To establish water chemistry operating limit action levels and corresponding corrective actions for Nine Mile Point Units 1 and 2.

1.1 Applicability

This procedure applies to Nine Mile Point Unit 1 and Unit 2 BWR water chemistry during all modes of operation.

2.0 PRIMARY RESPONSIBILITIES

2.1 **Nuclear Generation** is responsible for identifying when water chemistry action levels are reached and taking the required corrective actions to return the out-of-spec parameters to within acceptable operating limits.

2.2 **Chemistry Manager** is responsible for the control and maintenance of this procedure, and ensuring that required sampling and analyses are performed to monitor BWR water chemistry parameters.

3.0 PROCEDURE

3.1 The Chemistry Department shall monitor and report water chemistry parameters to ensure that they are tracked to identify long-term trends and determine when an action level as presented in Enclosure 1 "Water Chemistry Guidelines - Unit 1" or Enclosure 2 "Water Chemistry Guidelines - Unit 2" is being approached, has been reached, or exceeded.

3.2 IF an action level defined in Enclosure 1 OR Enclosure 2 is exceeded take the following actions as applicable:

NOTE:
1. In all cases Tech Spec actions take precedence
2. When the parameter is a fuel warranty parameter Action levels represent fuel warranty continuous, maximum, and extreme limits.
3. Event timeclock begins at time of discovery

3.2.1 IF an Action Level 1 value is exceeded, THEN perform the following:

a. Notify the Chemistry Supervisor and SSS of the parameter which has exceeded Action Level 1 limits.

b. IF the parameter exceeds a Tech Spec limit, THEN take actions in accordance with the applicable Tech Spec section.

c. IF the parameter is a fuel warranty parameter, THEN notify Fuels and Analysis by the end of the next working day.

3.2.1 (Cont)

d. IF Feedwater Total Copper and /or Iron weekly integrated results exceed Action Level 1, THEN analyze additional sample(s) within 96 hours. IF the result shows that the parameter has not been reduced to below the action value level, THEN continue with section 3.2.1.e.

e. Chemistry management perform an assessment to determine corrective actions required to reduce the parameter below the Action Level 1 value within 96 operating hours. The assessment will include but not limited to the following actions:

1. IF the parameter is a fuel warranty parameter, time outside Action Level 1 limit should not exceed 24 hours for a single incident, and shall not exceed 336 hours (14 days) in any 12 month period.

   NOTE: Action Level 1 represents the fuel warranty continuous limit.

2. For Unit 2, when both reactor water conductivity is > 0.3 μmho/cm AND feedwater soluble copper is > 0.3 ppb, the unit should be derated to 85 % Core Thermal Power. IF reduction below either value is not achieved within 48 hours. **Derating the unit is only applicable during the first 2900 MWD/ST cycle exposure.**

3. IF an individual condensate demineralizer conductivity exceeds action level 1, THEN remove the demineralizer from service within 72 hours.

4. IF Dissolved Oxygen has exceeded Action Level 1 during Reactor Condition II at Unit 1 or Modes 2 OR 3 at Unit 2, THEN the Dissolved Oxygen must be less than 300 ppb before reactor water temperature is increased above 285° F (140° C)

f. IF the parameter is not a fuel warranty parameter and cannot be reduced below Action Level 1 within 96 hours, OR a fuel warranty parameter cannot be reduced below Action Level 1 within 24 hours, THEN Chemistry should coordinate a review and prepare a schedule for implementing corrective actions including review by appropriate levels of management. The schedule of corrective actions should be submitted to the Plant Manager for review and approval.

3.2.2 IF an Action Level 2 value is exceeded, THEN perform the following:

a. Notify the Chemistry Supervisor and SSS of the parameter which has exceeded Action Level 2 limits.

b. IF the parameter exceeds a Tech Spec limit, THEN take actions in accordance with the applicable Tech Spec section.

c. IF the parameter is a fuel warranty parameter, THEN immediately notify Fuels and Analysis.

d. Chemistry management perform an assessment to determine corrective actions required to reduce the parameter below the Action Level 2 value within 24 hours. The assessment will include but not limited to the following actions:

1. IF the parameter is a fuel warranty parameter, THEN time outside the Action Level 2 limit shall not exceed 48 hours (2 days) in any 12 month period.

   NOTE: Action Level 2 represents the fuel warranty maximum limit.

2. IF an individual condensate demineralizer outlet conductivity exceeds action level 2, THEN remove the demineralizer with the high alarm from service.

3. IF the parameter is the Unit 2 Condensate Demineralizer Inlet Conductivity, THEN determine which waterbox is leaking. Isolate and repair within 72 hours.

4. IF the parameter has not been reduced below the Action Level 2 value within 24 hours from time of occurrence, THEN an orderly shutdown shall be initiated and the plant shall be brought to cold shutdown as rapidly as operating conditions permit, except as follows:

   a. When more restrictive action is required by Technical Specifications for reactor water conductivity, chloride, sulfate (Unit 1 only) or pH,

   b. IF the parameter will be below the Action Level 2 value within the time period required to achieve an orderly shutdown, power operation can be maintained, or

   c. IF continued operation, perhaps at reduced power, results in minimized exposure of components to elevated parameter concentrations.

5. Request an engineering evaluation if continued operation is maintained to minimize the exposure of components to elevated parameter concentrations as stated in 3.2.2.d.4.c above.

3.2.2.d (Cont)

6. IF Unit 1 Feedwater Total Metals has exceeded action level 2 during Reactor Condition III at Unit 1 or Mode 1 at Unit 2, resample and analyze for Total Metals after reaching steady state power for at least 48 hours.

e. IF the unit is shutdown as a result of exceeding an Action Level 2 value; THEN the cause of the incident shall be identified and corrective actions completed AND reviewed by SORC prior to restart.

3.2.3 IF an Action Level 3 value is exceeded perform the following:

a. Notify the Chemistry Supervisor and SSS of the parameter which has exceeded Action Level 3 limits.

b. IF the parameter exceeds a Tech Spec limit, THEN take actions in accordance with the applicable Tech Spec section.

c. IF the parameter is a fuel warranty parameter, THEN immediately notify Fuels and Analysis.

NOTE: Action Level 3 represents the fuel warranty extreme limit.

d. The SSS shall initiate an orderly shutdown with reduction of coolant temperature to < 200°F as rapidly as other plant constraints permit, except as follows:

1. IF Feedwater Metals have exceeded Action Level 3, THEN the effectiveness of immediate action(s) should be verified by analysis of a subsequent sample at steady state power prior to recommending shutdown as appropriate.

2. IF the parameter will be below the Action Level 2 value within the time period required to achieve an orderly shutdown, THEN power operation can be maintained.

3. IF it is more prudent, maintain power operation if such an effort results in minimized exposure of components to elevated parameter concentrations (eg. Resin intrusion).

   a. Request an Engineering evaluation if continued operation is maintained to minimize exposure of components to elevated parameter concentrations.

4. IF FW and CDE Dissolved Oxygen are below the Action level 3 low limit OR above the Action level 3 high limit, operation may continue provided immediate action is taken to increase or decrease oxygen to within limits.

e. IF the unit is shutdown as a result of exceeding an Action level 3 value; THEN the cause of the incident shall be identified, corrective actions completed and reviewed by SORC prior to restart.

4.0 DEFINITIONS

4.1 Action Level 1 - The Action Level 1 value of a parameter represents the level above which data or engineering judgment indicates that long-term system reliability may be threatened, thereby warranting an improvement of operating practices.

4.2 Action Level 2 - The Action Level 2 value of a parameter represents the level above which data or engineering judgment indicates that significant degradation of the system may occur in the short term, thereby warranting a prompt correction of the abnormal condition.

4.3 Action Level 3 - The Action Level 3 value of a parameter represents the level above which data or engineering judgment indicate that it is inadvisable to continue to operate the plant.

4.4 Siemens/centimeter (S/cm) - Siemens/centimeter is the unit of measure of electrical conductivity. S/cm is numerically equivalent to mho/cm.

4.5 REACTOR CONDITION 1: Reactor water bulk temperature <200 degrees F.

4.6 REACTOR CONDITION 2: Reactor water bulk temperature >=200 degrees F AND reactor thermal power <=10%.

4.7 REACTOR CONDITION 3: Reactor thermal power >10%.

5.0 REFERENCES AND COMMITMENTS

5.1 Licensee Documentation

5.1.1 Unit 1 Technical Specifications

a. Section 3/4.2.3 Coolant Chemistry

5.1.2 Unit 2 Technical Specifications

a. Section 3/4.4.4 Reactor Coolant System, Chemistry

5.1.3 Unit 2 Final Safety Analysis Report

a. Section 5.2.3.2.2 BWR Chemistry of Reactor Coolant
b. Section 5.4.8 Reactor Water Cleanup System
c. Section 10.4.6 Condensate Demineralizer System
d. Section 10.4.7 Condensate and Feedwater System
e. Section 10.4.11 Oxygen Feedwater Injection System

5.2 Standards, Regulations, and Codes

5.2.1 Regulatory Guide 1.56, Rev 1 July 1978, "Maintenance of Water Purity In Boiling Water Reactors"

5.2.2 Electric Power Research Institute (EPRI) TR-103515 Rev 1, "BWR Water Chemistry Guidelines"

5.3 Policies, Programs, and Procedures

5.3.1 NDD-CHE, Chemistry

5.3.2 NDD-RMG, Records Management

5.4 Supplemental References

5.4.1 Unit 1 GE Fuel Warranty Contract

5.4.2 Unit 2 GE Fuel Warranty Contract

5.5 Commitments

Sequence Number	Commitment Number	Description
1	503897	NRC Commitment to EPRI TR-103515-R1 Table 4.4 Control Parameters, except for ECP and Zinc (Unit 1)
2	504098	Revise N1-CSP-D100 to incorporate Technical Specification Amendment #163

6.0 RECORDS REVIEW AND DISPOSITION

6.1 The following records generated by this procedure shall be maintained by Records Management for the Permanent Plant File in accordance with NIP-RMG-01, Records Management:

- None

6.2 The following records generated by this procedure are not required for retention in the Permanent Plant File:

- None

7.0 ENCLOSURES

Enclosure 1: Water Chemistry Guidelines - Unit 1

Enclosure 2: Water Chemistry Guidelines - Unit 2

LAST PAGE

ENCLOSURE 1: WATER CHEMISTRY GUIDELINES - UNIT 1

NOTES:

1. This enclosure has three sections; Technical Specifications, Fuel Warranty, and EPRI Guidelines. **Each section needs to be evaluated for applicability.**

2. Water chemistry limits at specific Reactor Conditions are based on **BULK REACTOR WATER TEMPERATURE AND NOT MODE SWITCH POSITION**

I. TECHNICAL SPECIFICATIONS

NOTE: Action level 2 limits may be exceeded for a maximum of 24 hours, OR a shutdown shall be initiated within one hour and reactor coolant temperature be reduced to <200°F within 10 hours.

REACTOR CONDITION 2: **Reactor water bulk temperature ≥ 200°F AND reactor thermal power ≤ 10 %**

Control Parameter	Action Levels 1	2	3
Reactor Water			
Conductivity (uS/cm) at 25 °C	--	> 1.0	> 5.0
Chloride (ppb)	--	> 100	> 200
Sulfate (ppb)	--	> 100	> 200

REACTOR CONDITION 3: **Reactor thermal power > 10%**

Control Parameter	Action Levels 1	2	3
Reactor Water			
Conductivity (uS/cm) at 25 °C	>0.19	> 1.0	>5.0
Chloride (ppb)	>5	> 20	> 100
Sulfate (ppb)	>5	> 20	> 100

II. FUEL WARRANTY REQUIREMENTS

REACTOR CONDITION 1: Reactor water bulk temperature < 200°F

System and Control Parameter		Action Levels 1	2	3
Reactor Water				
pH at 25° C (applied only when reactor water >1.0uS/cm)	(Low)	<5.3	<4.9	<4.6
	(High)	>8.6	>9.3	>9.6

REACTOR CONDITION 2: Reactor water bulk temperature ≥200°F AND reactor thermal power ≤10%

System and Control Parameter		Action Levels 1	2	3
Reactor Water				
pH at 25° C (applied only when reactor water >1.0uS/cm)	(Low)	<5.6	<4.9	<4.6
	(High)	>8.6	>9.3	>9.6

REACTOR CONDITION 3: Reactor thermal power > 10%

System and Control Parameter		Action Levels 1	2	3
Reactor Water				
pH at 25° C (applied only when reactor water >1.0uS/cm)	(Low)	<5.6	<4.9	<4.6
	(High)	>8.6	>9.3	>9.6
Condensate				
Effluent (CDE) conductivity at 25°C		>0.065	>0.1	>0.2
Effluent (CDE) dissolved Oxygen	Low	<20	<10	<5
	High	>50	>200	>550
Feedwater				
Dissolved Oxygen	Low	<20	<10	<5
	High	>50	>200	>550
Total Copper (ppb)		-	>2.0	>4.0
Iron (ppb)	Insoluble	>10	>20	>40
	Soluble	>1.0	>2.0	>4.0
Total metals (ppb) Fe,Cu,N1,Zn (soluble & insoluble)		>15	>30	>60

III. EPRI BWR WATER CHEMISTRY GUIDELINE

REACTOR CONDITION 1: Reactor water bulk temperature < 200°F

System and Control Parameter	Action Levels 1	2	3
Reactor Water			
Conductivity (uS/cm) at 25°C	>2.0	--	--
Chloride (ppb)	>100	--	--
Sulfate (ppb)	>100	--	--

REACTOR CONDITION 2: Reactor water bulk temperature ≥200°F AND reactor thermal power ≤10%

System and Control Parameter	Action Levels 1	2	3
Reactor Water			
Dissolved oxygen (ppb) when reactor water temperature >284 degrees F(140°C)	>300	--	--
Condensate			
Influent (CDI) conductivity at 25°C	--	--	>10
Effluent (CDE) conductivity at 25°C (after establishing condenser vacuum with steam air ejectors)	>0.15	--	--
Feedwater			
Conductivity at 25°C	>0.15	--	--
Dissolved oxygen (after establishing condenser vacuum with steam air ejectors)	>200	--	--
Suspended corrosion products (ppb)	>100	--	--

REACTOR CONDITION 3: Reactor thermal power >10%

System and Control Parameter		Action Levels 1	2	3
Control Rod Drive				
Conductivity at 25°C		>0.15	--	--
Dissolved oxygen (ppb)		>200	--	--
Feedwater (EPRI Guidelines for weekly integrated value)				
Total copper (ppb)		>0.5	--	--
Iron (ppb)	Insoluble	>5	--	--
Condensate				
Influent (CDI) conductivity at 25°C		>0.10	--	>10

ENCLOSURE 2: WATER CHEMISTRY GUIDELINES - UNIT 2

Operating Condition/Parameter		Action Level 1	Action Level 2	Action Level 3	Prior to Startup
I. Cold Shutdown (Mode 4,5)					
a. Reactor Water and Fuel Storage Pool					
Conductivity (μS/cm) @ 25°C		>2.0*	>5.0*	>10.0[1]*	≤1.0
Chloride (ppb)		>100*	>200*	>500[1]*	≤100
Sulfate (ppb)		>100	-	-	≤100
pH at 25°C	(Low)	<5.3*(1)	<4.9*	<4.6*	
	(High)	>8.6*(1)	>9.3*	>9.6*	
II. Startup/Hot Standby (Mode 2,3)					
a. Reactor Water					
Conductivity (μS/cm) @ 25°C		-	>1.0	>5.0	≤1.0
			>2.0[1]		
Chloride (ppb)		-	>100[1]	>200	≤20
Sulfate (ppb)		-	>100	>200	≤20
Dissolved Oxygen (ppb)		>300			
pH @ 25°C	(Low)	<5.6*[1]	<4.9*	<4.6*	
	(High)	>8.6*[1]	>9.3*	>9.6*	
b. Feedwater/Condensate					
Feedwater and CDE Conductivity (μS/cm) @ 25°C		>0.15**	-	-	
Feedwater Suspended Corrosion Products (ppb)		>100	-	-	
Condensate (CDI) Conductivity (μS/cm) @ 25°C		>0.10***[4]	>0.5***	>1.0***[2]	
Feedwater Dissolved Oxygen (ppb)		>200**	-	-	<200**
III.Power Operation (Mode 1) (>10% Power)					
a. Reactor Water					
Conductivity (μS/cm) @ 25°C		>0.30	>1.0[1]	>5.0	
Chloride (ppb)		>5	>20	>100	
Sulfate (ppb)		>5	>20	>100	
pH at 25°C	(Low)	<5.6*[1]	<4.9*	<4.6*	
	(High)	>8.6*[1]	>9.3*	>9.6*	
b. Feedwater/Condensate					
Feedwater and CDE Conductivity (μS/cm) @ 25°C		>0.065*	>0.1*	>0.2*	
Individual Condensate Demineralizer Outlet conductivity (μS/cm) @ 25°C		>0.2****	>0.5****		
Condensate (CDI) Conductivity/(μS/cm) @ 25°C		>0.10	>0.5***	>1.0***[2]	
Feedwater Total Metals (ppb) Fe,Cu,Ni,Zn	Sol and Insol	>15*	>30*	>60*	
Feedwater Total Iron (ppb)	(Insol)	>5[3] >10*	>20*	>40*	———
	(Sol)	>1.0*	>2.0*	>4.0*	
Feedwater Total Copper (ppb)		>0.5[3]*	>2.0*	>4.0*	
Feedwater and CDE Dissolved Oxygen (ppb)	(Low)	<20*	<10*	<5*	
	(High)	>50*	>200*	>550*	
c. Control Rod Drive Water					
Conductivity (μS/cm) @ 25°C		>0.15	-	-	
Dissolved Oxygen(ppb)		>200	-	-	
d. Reactor Water and Feedwater****					
Reactor Water Conductivity (μS/cm) @ 25°C AND		>0.3			
Feedwater Soluble Copper (ppb)		>0.3			

(1) Technical Specification Actions are controlling.
(2) Limit of 10μS/cm applies with no chemical addition to circulating water system.
(3) EPRI Guidelines weekly integrated value.
(4) Limit applies during Chemical Additions

* Fuel Warranty Limits
** After establishing condenser vacuum with steam air ejec
*** SER 89-069 and SER 90-142
**** RG 1.56

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Shift Turnover
Question Number:	1

Question:

Use <u>today's date</u>.
Assume you are 42 years old when answering this question.

Evaluate the following information and determine what requirements must be met before you fill a SSS position on January 1, 2000.

- You filled a shift SSS position this year until September 1, when you were assigned to Operations Support until the end of the year. Since the assignment, you have stood the following 12-hour watches as SSS:

  September: Three (3) 12-hour watches
  October: Three (3) 12-hour watches
  November: NO watches
  December: NO watches and none scheduled

- Medical exam and respiratory physical is completed on 11/30/98. Documented in accordance with station procedures on 11/30/98.

- SCBA and Scott full-face qualification including a fit-test for each is completed on 6/6/99. Documented in accordance with station procedures on 6/10/99.

- With the exception of completing the remediation for a requal cyclic written exam failure last Friday, you have completed all training and passed all other evaluations.

Answer:

Must complete the training remediation, then stand at least two (2) 12-hour watches as the CRS or SSS by 12/31/99.

Technical Reference(s):
S-ODP-TQS-0101, Rev 01 Section 3.10, 4.2, 4.4

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Shift Turnover
Question Number:	1

K/A #:	Importance:
2.1.3	3.4

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

OPERATIONS ADMINISTRATIVE PROCEDURE

S-ODP-TQS-0101

REVISION 01

ADMINISTRATIVE CONTROLS FOR MAINTAINING ACTIVE LICENSE STATUS AT NINE MILE POINT

Approved by:
D. F.Topley

Manager Operations - Unit 1

8/18/98
Date

Approved by:
D. P. Bosnic

for D Bosnic
Manager Operations - Unit 2

8/19/98
Date

CONTROLLED

Effective Date: 08/24/98

3.9 Inactive License Holders

Inactive license holders shall be certified by the Plant Manager to have met the conditions of 10CFR55.53(f) by a License Reactivation Form (Attachment 3 or 4). These requirements include:

3.9.1 That the qualifications AND status of the licensee are current as specified in sub-section 3.10

AND

3.9.2 A minimum of 40 hours of shift functions under the direction of an operator OR senior operator, as appropriate AND in the position to which the operator will be assigned is completed. The 40 hours must have included a complete tour of the plant AND review of all required shift turnover procedures. The 40 hours shall be in the same calendar quarter.

OR

3.9.3 For SRO limited to fuel handling one shift shall have been completed.

3.10 Additional Requirements on an Active License Holder

For Licensed Operators to fill a Technical Specification required on-shift position, the following minimum requirements shall be complied with in addition to the requirements of subsection 3.9:

- Meet requalification training requirements per NTP-TQS-102, Licensed Operator Requalification Training.
- Be currently trained on use of (SCBA) Scott Air Paks, (annual requirement).
- Have a current (SCBA) Scott Air Pak fit test on file, (biennial requirement).
- Have a current Scott Full Face fit test on file, (biennial requirement which applies to Unit 1 only).
- Have a current form NRC-396 on file (NRC Medical examination) (biennial requirement).
- Have a current respiratory physical examination on file, (biennial requirement if less than 45 years of age, otherwise annual).
- Have corrective lenses available for use in (SCBA) Scott Air Paks.
- Logged in SSS Log.

3.12 Corrective Lens License Restriction

NOTE: Only the face piece spectacles designed for use in (SCBA) Scott Air Paks OR contact lenses meet the requirement for corrective lenses.

3.12.1 Licensed Operators with the corrective lens restriction are required to have corrective lenses available for use in (SCBA) Scott Air Paks.

3.12.2 PRIOR to resuming license duties, Licensed Operators that have obtained corrective lenses for the first time shall be examined by the Site Medical Department to determine if a corrective lens restriction is required.

3.12.3 IF at any time a licensed operator receives a corrective lens restriction, the requirements listed above in step 3.12.1 shall be satisfied PRIOR to resuming license duties.

4.0 DEFINITIONS

4.1 Approved Watchstanding Positions at Nine Mile Point

- SSS
- ASSS
- CSO OR ATCRO
- Control Room NAOE
- Refuel SRO

4.2 Calendar Quarter

For purpose of this procedure Calendar Quarters will be as follows:

- 1st Quarter January 1 to March 31
- 2nd Quarter April 1 to June 30
- 3rd Quarter July 1 to September 30
- 4th Quarter October 1 to December 31

4.3 Actively Performing the Function of a Licensed Operator

Individual has a position on a shift crew that requires the individual to be licensed, as defined in the facility's Technical Specifications, and that the individual carries out, and is responsible for the duties covered in that position, including log keeping and shift turnover responsibilities.

4.4 10CFR55.53 Conditions of Licenses

To maintain active status, the licensee shall actively perform the functions of an operator or senior operator on a minimum of seven 8-hour or five 12-hour shifts per calendar quarter.

4.5 NMPC Interpretation of 10CFR55.53(e)

4.5.1 It is NMPC policy that to maintain license proficiency, watchstander station requirements for performing the duties of Station Shift Supervisor (SSS), Assistant Station Shift Supervisor (ASSS), Chief Shift Operator (CSO) OR At The Controls Reactor Operator (ATCRO), Nuclear Auxiliary Operation E (NAOE) and Refuel SRO are as follows:

LICENSE PROFICIENCY WATCH STANDER STATION	REQUIREMENT
STATION SHIFT SUPERVISOR (SSS)	SRO
ASSISTANT STATION SHIFT SUPERVISOR (ASSS)	SRO
CHIEF SHIFT OPERATOR (CSO) OR AT THE CONTROLS REACTOR OPERATOR (ATCRO)	RO
NUCLEAR AUXILIARY OPERATOR E (NAOE)	RO
REFUEL SRO	LSRO (min req.)

NOTE: When additional watchstanders are required to satisfy the minimum shift crew composition per Technical Specification requirements, the only three cases where more than two senior operators and two operators can be taken credit for are as follows:

a. During a reactor startup, credit for time performing the duties of a licensed operator may be taken by one additional Chief Shift Operator or Nuclear Auxiliary Operator - E (RO) when assigned to the Control Room.

b. During refuel floor activities where the Senior Reactor Operator and reactor operator(s) may take credit for time performing fuel movement activities.

c. During assignments for training or reactivation of license on shift under the direction of an active license holder.

4.5.2 It is NMPC's policy in the shutdown condition that two licensed senior operators and two Licensed Operators are required to maintain safe operation of the Units. This may be reduced on a case-by-case basis with Management concurrence.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Shift Turnover
Question Number:	2

Question:

The plant is operating at 60% power. You have just taken turnover and assumed the night shift watch as the SSS. Total night shift compliment following turnover is:

Position	Current Staffing
SSS	1
ASSS	1
Licensed Operator	2
Non-Licensed Operator	3
STA	1
RP Technician	2
Chemistry Technician	1
Site Fire Brigade	5

At the shift brief, one of the Reactor Operators faints and is not able to fulfill the function of the reactor operator. What actions are required?

Answer:

Immediately initiate action to fill the vacant RO position within 2 hours.

Technical Reference(s):
GAP-OPS-01, Rev 11 T.S. 6.2.2, T.S. Table 6.2.2-1

K/A #:	Importance:
2.1.1, 2.1.3, 2.1.4, 2.1.5	3.8, 3.4, 3.4, 3.4

Comments:

Facility: Nine Mile Point # 2		Date of Examination: 12/06/99
Examination Level (circle one): **SRO**		Operating Test Number: Cat A Test 1
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Plant Parameter Verification	JPM: (New) Water Chemistry Operating Limits Determination (SRO ONLY). K/A 2.1.33, 2.1.34
	Shift Turnover	Question: 1. Given watchstanding history, medical data and training data, determine requirements to stand watches. (Active license requirements).
		Question: 2. Given the number of shift personnel, determine if minmum manning reqiurements are being met. K/A 2.1.1, 2.1.3, 2.1.4, 2.1.5
A.2	Piping and Instrument Drawings	Question: 1. Using the PIDs, trace the Fire Protection Water flow path from the motor driven fire water pump 2FPW-P2, to the RPV using RHS Train A. 2RHS*MOV24A is available for injection. Where necessary, add EOP equipment to be used. K/A 2.1.24 *PRA (IPE: Fire Water – RHR Crosstie)*
		Question: 2. Using a PID drawing, describe how the motor operated Testable Check Bypass Valve RHS*MOV67B will respond to a LOCA signal. K/A 2.1.24
A.3	Radiation Work Permits	Question 1. Review the attached Survey 68 for Turbine Building 277' Condensate Demin Valve Aisle and identify the radiological hazard(s). K/A 2.3.10
		Question 2. Review a Radiation work Permit (22, Revision 313), and identify sign in requirements for Auxiliary Operators, protective clothing requirements and actions to be taken if an AO has to be sent into an area with a general area radiation level of 20 mrem/hr for four (4) hours? K/A 2.3.10
A.4	Emergency Classification	JPM: (New) Emergency Plan classification of each SRO candidates scenario (to be administered after each scenario). K/A 2.4.29, 2.4.41

6.1 RESPONSIBILITY

6.1.1 The Plant Manager shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during the Plant Manager's absence.

6.1.2 The Station Shift Supervisor - Nuclear (or during the Supervisor's absence from the control room, a designated individual) shall be responsible for the control room command function. A management directive to this effect, signed by the Chief Nuclear Officer shall be reissued to all station personnel annually.

6.2 ORGANIZATION

6.2.1 Onsite and Offsite Organization

An onsite and an offsite organization shall be established for unit operation and corporate management. The onsite and offsite organization shall include the positions for activities affecting the safety of the nuclear power plant.

a. Lines of authority, responsibility and communication shall be established and defined from the highest management levels through intermediate levels to and including all operating organization positions. Those relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions or in equivalent forms of documentation. The organization charts shall be documented in the Final Safety Analysis Report, and the functional descriptions of departmental responsibilities and relationships and job descriptions for key personnel positions are documented in procedures.

b. The Chief Nuclear Officer shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to assure acceptable performance of the staff in operating, maintaining, and providing technical support in the plant so that continued nuclear safety is assured.

c. The Plant Manager shall have responsibility for overall unit operation and shall have control over those resources necessary for safe operation and maintenance of the plant.

d. The persons responsible for the training, health physics and quality assurance functions may report to an appropriate manager onsite, but shall have direct access to responsible corporate management at a level where action appropriate to the mitigation of training, health physics and quality assurance concerns can be accomplished.

UNIT STAFF

6.2.2 The unit organization shall be subject to the following:

a. Each on-duty shift shall be composed of at least the minimum shift crew shown in Table 6.2.2-1;

ORGANIZATION

UNIT STAFF

6.2.2 (Continued)

b. At least one Licensed Operator shall be in the control room when fuel is in the reactor. In OPERATIONAL CONDITIONS 1, 2, or 3, at least one Licensed Senior Operator or Licensed Operator shall be at the controls of the unit.

c. A Radiation Protection Technician* shall be on site when fuel is in the reactor.

d. At least two Licensed Operators shall be present in the control room during reactor startup, scheduled reactor shutdown, and during recovery from reactor trips.

e. A Licensed Senior Operator shall be required in the control room during OPERATIONAL CONDITIONS 1, 2, and 3 and when the emergency plan is activated. This may be the Station Shift Supervisor - Nuclear, the Assistant Station Shift Supervisor - Nuclear or other individuals with a valid senior operator license. When the emergency plan is activated in OPERATIONAL CONDITIONS 1, 2, or 3 and a dedicated Shift Technical Advisor is not on-shift, then the Assistant Station Shift Supervisor - Nuclear becomes the Shift Technical Advisor and the Station Shift Supervisor - Nuclear is restricted to the control room until an additional Licensed Senior Operator arrives.

* The Radiation Protection Technician and Fire Brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate unexpected absence, provided immediate action is taken to fill the required positions. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming crewman being late or absent.

ORGANIZATION

UNIT STAFF

6.2.2 (Continued)

f. A Licensed Senior Operator or Licensed Senior Operator Limited to Fuel Handling shall be responsible for all movement of new and irradiated fuel within the site boundary. All core alterations shall be directly supervised by a Licensed Senior Operator or Licensed Senior Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation. All fuel moves within the core shall be directly monitored by a member of the reactor analyst group.

g. A Fire Brigade* of five members shall be maintained on site at all times. The Fire Brigade shall not include the Shift Supervisor and the two other members of the minimum shift crew necessary for safe shutdown of the unit and any personnel required for other essential functions during a fire emergency.

h. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions; e.g., Licensed Senior Operators, licensed operators, health physicists, auxiliary operators, and key maintenance personnel.

i. Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work an 8 to 12 hour day, nominal 40-hour week while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major unit modifications, on a temporary basis the following guidelines shall be followed:

1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time.

2. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any 7-day period, all excluding shift turnover time.

3. A break of at least 8 hours should be allowed between work periods, including shift turnover time.

* The radiation protection qualified individual and Fire Brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate unexpected absence, provided immediate action is taken to fill the required positions.

ORGANIZATION

UNIT STAFF

6.2.2.i (Continued)

4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized by the Plant Manager, or higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation. Controls shall be included in the procedures so that individual overtime shall be reviewed monthly by the Vice President - Nuclear Generation or a designee to assure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized.

j. The General Supervisor Operations, Supervisor Operations, Station Shift Supervisor Nuclear and Assistant Station Shift Supervisor Nuclear shall hold senior reactor operator licenses.

6.2.3 INDEPENDENT SAFETY ENGINEERING GROUP

FUNCTION

6.2.3.1 The Independent Safety Engineering Group (ISEG) shall function to examine unit operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources of unit design and operating experience information, including units of similar design, which may indicate areas for improving unit safety. The ISEG shall make detailed recommendations for revised procedures, equipment modifications, maintenance activities, operations activities, or other means of improving unit safety to the Vice President - Nuclear Safety Assessment and Support.

COMPOSITION

6.2.3.2 The ISEG shall be composed of at least five, dedicated, full-time engineers located on site. Each shall have a bachelor's degree in engineering or related science and at least 2 years of professional level experience in his/her field, at least 1 year of which experience shall be in the nuclear field.

RESPONSIBILITIES

6.2.3.3 The principal function of the ISEG is to examine plant operating characteristics and the various NRC and industry licensing and service advisories, and to recommend areas for improving plant operations or safety. The ISEG will perform independent review of plant activities, including maintenance, modifications, operational concerns, and analysis and make recommendations to the Vice President - Nuclear Safety Assessment and Support.

TABLE 6.2.2-1

MINIMUM SHIFT CREW COMPOSITION(a)(b)

POSITION	OPERATIONAL CONDITIONS 1 ,2	3	4, 5	1, 2, 3, 4, 5
Station Shift Supervisor(d)	1	1	1(e)	1(c)
Assistant Station Shift Supervisor(g)	1	1	None	1(c)
Operator	2, 3(h)	2	1	2(c) 3(c)(h)
Unlicensed(f)	2	2	1	3(c)
Shift Technical Advisor(g)	1	1	None	1(c)

TABLE NOTATIONS

(a) At any one time, more licensed or unlicensed operating people could be present for maintenance, repairs, refuel outages, etc.

(b) The shift crew composition may be one less than the minimum requirements of Table 6.2.2-1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members, provided immediate action is taken to restore the shift crew composition to within the minimum requirements of Table 6.2.2-1. This provision does not permit any shift crew position to be unmanned upon shift change because an oncoming shift crewman scheduled to come on duty is late or absent.

(c) For operation longer than 8 hours without process computer.

(d) Any time the Shift Supervisor is absent from the control room while the unit is in OPERATIONAL CONDITION 1, 2, or 3, the Assistant Station Shift Supervisor when not in the STA function, or another individual with a valid Senior Operator license shall be designated to assume the control room command function. During any absence of the Shift Supervisor from the control room while the unit is in OPERATIONAL CONDITION 4 or 5, an individual with a valid Senior Operator license or Operator license shall be designated to assume the control room command function.

(e) An additional Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities shall supervise all core alterations.

(f) Those operating personnel not holding an Operator or Senior Operator license.

(g) The Assistant Station Shift Supervisor shall hold a Senior Operator's license and, if qualified, may perform the Shift Technical Advisor function when the Site Emergency Plan is activated in OPERATIONAL CONDITIONS 1, 2, or 3, if a dedicated Shift Technical Advisor is not available.

(h) OPERATIONAL CONDITION 2 only.

3.1.14 (Cont)

h. Ensures supervised personnel receive training in appropriate radiological protection practices, procedures, and ALARA principles.

i. Promotes safe working conditions and practices by ensuring supervised personnel receive required instructions concerning industrial safety.

j. Ensures strict adherence to company and station security provisions and procedures.

k. Promotes good housekeeping by periodically inspecting areas assigned to the Radwaste Operations Section.

3.2 Operating Shift Complement

3.2.1 The General Supervisor Operations (or designee) shall ensure minimum operating shift complements are established and maintained as follows:

Position	Normal Operation	Startup	Hot Shutdown	Cold Shutdown	Refueling	Operation W/O Process Computer (c)
Station Shift Supervisor (f)	1	1	1	1	1 (b)	1
Assistant Station Shift Supervisor (a)(f)	1	1	1	None	None	1
Licensed Operator (f)	2	3	2	1	1	2 (U1) 3 (U2) (d)
Nonlicensed Operator (f)	2	2	1 (U1) 2 (U2)	1 2 (U2)(g)	1 2 (U2)(g)	3
Shift Technical Advisor (a)(f)	1	1	1	None	None	1
Radiation Protection Technician (e)	1	1	1	1	1	1
Chemistry Technician	1	1	None	None	1	1
Site Fire Brigade	5	5	5	5	5	5

a. The ASSS may assume the responsibilities of the STA provided that:

1. The individual holds a BS degree in Physical Science or Engineering, or holds a PE license.

2. The individual is qualified as an STA.

3.2 (Cont)

b. An additional Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities shall supervise all core alterations.

c. For operation longer than 8 hours without process computer.

d. At Unit 2, a minimum of 3 licensed operators shall be on shift during startup without the Process Computer, otherwise the minimum requirement is 2.

e. A Radiation Protection Technician shall be onsite when fuel is in the reactor.

f. The on-duty SSS, ASSS, STA, Licensed Operator(s), and Nonlicensed Operator(s) shall remain within the protected area except as provided in Step 3.2.3.

g. At Unit 2, a minimum of 2 Nonlicensed operators are required when the process computer is out of service for less than or equal to 8 hours.

3.2.2 At any one time, more licensed or unlicensed operating people could be present for maintenance, repairs, refuel outages, etc.

3.2.3 The shift crew composition may be one less that the minimum requirements of Step 3.2.1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of <u>on-duty</u> shift crew members.

a. Immediate action shall be taken to restore the shift crew composition to within the minimum requirements of Step 3.2.1.

b. This provision does not permit any shift crew position to be unmanned upon shift change because an oncoming shift crewman scheduled to come on duty is late or absent.

3.2.4 Shift personnel expecting to be late or unable to report for work at the scheduled time shall, at the earliest opportunity, inform the SSS or the ASSS of the situation.

3.2.5 The SSS or ASSS shall make the necessary arrangements for obtaining replacements or holding over on-shift personnel as required to comply with minimum staffing requirements.

3.2.6 The Station Shift Supervisor (SSS) or Assistant Station Shift Supervisor (ASSS) shall have the authority to call in off-duty personnel from any department, as necessary, to supplement or replace personnel.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Work Permits
Question Number:	2

Question:

Review the attached Radiation Work Permit (22, Revision 313) and identify the following:

a. Sign in requirements for Auxiliary Operators

b. What protective clothing is required?

c. What actions must be taken if an AO has to be sent into an area with a general area radiation level of 20 mrem/hr for four (4) hours?

Answer:

a. Auxiliary Operators should sign in at the beginning and end of their shift.

b. Worker Type 1 is No protective clothing required.

c. AO is expected to receive 80 mrem (20 x 4). Radiation Protection must be notified and approval obtained to exceed 50 mrem/day.

Technical Reference(s):
S-RAP-RPP-0202, Attachment 1 GAP-RPP-07, Sect. 3.5

K/A #:	Importance:
2.3.10	2.9

Comments:

Niagara Mohawk

Tuesday, June 29, 1999

APPROVED FOR WORK

Radiation Work Permit: 22 revision: 313

OPERATIONS DEPARTMENT (STANDING RWP)
Perform Rounds/Markups/Valve Lineups/Minor
High Radiation Area

Survey Data:

Maximum Walk Through to Work Area <100 mRem/hr, <40,000 dpm/100cm2, <0.3 DAC
Maximum Work Area <100 mRem/hr, <40,000 dpm/100cm2, <0.3 DAC
As Posted and/or per RP Briefing

[redacted]

TASK: 1 revision: 73

Normal Rounds/Markups/Observations and Inspections

Dose Alarm: 50 mRem
Dose Rate Alarm: 100 mRem/hr

Protective Clothing Requirements: Worker Type 1

TLD, Electronic Dosimeter

Instructions:

1) Exposure guide = 50 mRem/day. RP Approval required to exceed the daily guide.
2) Personnel shall sign in/out on this RWP for each RCA entry.Shift personnel requiring frequent, routine or immediate access may sign in/out once per shift.
3) Keep RP informed of work activities in progress.
4) Access the RCA at ACB 261' or as approved by RP.
5) Protective clothing requirements as posted or required by RP.
6) No entry above arms reach or access to unsurveyed permanently installed platforms without RP approval.
7) As approved by RP for High Radiation Area entries.
8) Stay time limited to 1 minute in areas > 1000 mRem/hr, unless specifically approved otherwise by RP.

No entry into the following unless specifically approved approved by RP: Very High Radiation Areas, High Radiation Areas, Neutron Radiation Areas, Airborne Radiation Areas, Contaminated Areas > 40,000 dpm/100cm2.

Scanning or entering RWP and Task number signify that I have read, understand and will comply with the RWP

Code	Minimum Clothing Guide
A	*Worker type 1*
B	• 400 - 1,000 dpm/100 cm^2 *Worker type 2*(see Notes 4,5 and 6) • 1,000-25,000 dpm/100 cm^2 *Worker type 2*(See Notes 4,5 and 6) • 25,000 dpm/100 cm^2, C applies
C	*Worker type 3* (see Note 1)
D	*Worker type 3* 40,000 - 100,000 dpm/100cm^2 determine need to prescribe E requirements
E	*Worker type 4* (see Note 2)
F	Plastic wet suit(see Notes 2 and 3) **PLUS** *Worker type 3* Assistance should be available for undressing
G	*Worker type 3* **PLUS** Air-line bubble suit or equivalent Assistance should be available for undressing

Worker Type 1: No Protective Clothing required.

Worker Type 2: Cotton liners, Rubber gloves, Cotton booties, Rubber shoe covers.

Worker Type 3: Cotton liners, Rubber gloves, Cotton booties, Rubber shoe covers, Cotton coveralls, Cotton cap, Cotton hood.

Worker Type 4: Cotton liners, Rubber gloves(2 pair), Cotton booties(2 pair), Rubber shoe covers, Cotton coveralls(2 Pair), Cotton cap. Cotton hood.

Worker Type 5: As defined by Radiation Protection Personnel

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-RPP-07

REVISION 05

INTERNAL AND EXTERNAL DOSIMETRY PROGRAM

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

Plant Manager - Unit 1

12/28/98
Date

Approved by:
N. C. Paleologos

Plant Manager - Unit 2

12/23/98
Date

THIS IS A FULL REVISION

Effective Date: 12/31/1998

3.3.5 (Cont)

b. The Radiation Protection Computer System (RPCS) will serve as the database/tracking system for determining compliance with all occupational dose limits

c. RP Supervision shall perform an assessment of the doses accrued by individuals who exceed their administrative dose limit

3.4 Normal Use and Placement of Dosimetry

3.4.1 Whole Body dosimetry shall be placed on the body in a manner such that its measurement represents uniform exposure of the whole body, including the extremities, unless the extremities or other Whole Body areas are specifically monitored as per S-RPIP-5.1

3.4.2 Normal use and placement of dosimetry on the body of monitored individuals is as follows:

a. Should be attached to a lanyard.

b. Worn on the outermost (personal) garment.

c. Worn on the front torso, on or above the beltline and below the neck.

d. Rad Protection will determine the need for other requirements, as per S-RPIP-5.1.

3.4.3 Workers should verify Electronic Dosimeters are activated prior to RCA entry and should periodically check their SRDs while in the RCA

3.5 Problems or Questions with Dosimetry

3.5.1 Workers shall immediately report to Rad Protection when a problem with dosimetry is suspected

3.5.2 Workers who have lost or damaged dosimetry shall, immediately upon discovery, contact Rad Protection who will provide instructions as per S-RPIP-5.1

3.5.3 Workers whose SRD alarms or reads offscale (where applicable) shall immediately leave the area and contact Rad Protection

3.5.4 Rad Protection shall determine the need for an evaluation of exposure received as per S-RPIP-5.25

3.5.5 Personnel visiting other Nuclear Sites where occupational radiation exposure is expected to be received, shall contact Radiation Protection, and have their dosimetry dispositioned as per S-RAP-RPP-0704

3.6 Internal and External Dose Determination

3.6.1 External Dose Determination

a. TLDs shall be prepared and returned to the TLD Processor for external dose determination, and dose results received by Dosimetry, as per S-RAP-RPP-0704

b. TLD results LESS THAN 10 mRem shall be recorded in personnel exposures files as '0' mRem

c. Skin dose assessments resulting from contamination of the skin shall be made as per S-RPIP-5.5

d. The external exposure received by the embryo/fetus of a declared pregnant woman shall be equal to the Deep Dose Equivalent (DDE) of the declared pregnant woman.

e. Neutron dose estimates shall be made by Rad Protection as per S-RPIP-5.3.

3.6.2 Internal Dose Determination

a. In-Vivo Bioassay (ie Whole Body Counting) of individuals shall be performed as per S-RPIP-5.12 or S-RTP-122, where applicable

b. In-Vitro Bioassay (eg Urine) sample collection shall be performed as per S-RPIP-5.7

c. Bioassay results shall be evaluated, as necessary, as per S-RPIP-5.7

d. Internal dose results LESS THAN 10 mRem shall be recorded in personnel exposures files as '0' mRem, or other similar assignments (eg NC for not calculated)

e. Embryo/fetus internal exposures shall be determined using the guidance provided by Reg. Guide 8.36 (7/92), unless otherwise specified by RP Supervision.

1. The dose to the maternal uterus resulting from radioactivity burdens in the declared pregnant woman, should be assumed to represent the internal exposure received by the embryo/fetus.

3.6.3 Controlled Area dose assessments shall be performed as per S-RAP-ALA-0103

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

RADIATION PROCEDURE ADMINISTRATIVE

S-RAP-RPP-0202

REVISION 04

SELECTION, DONNING, AND REMOVAL OF PROTECTIVE CLOTHING

Approved by:
V. L. Schuman

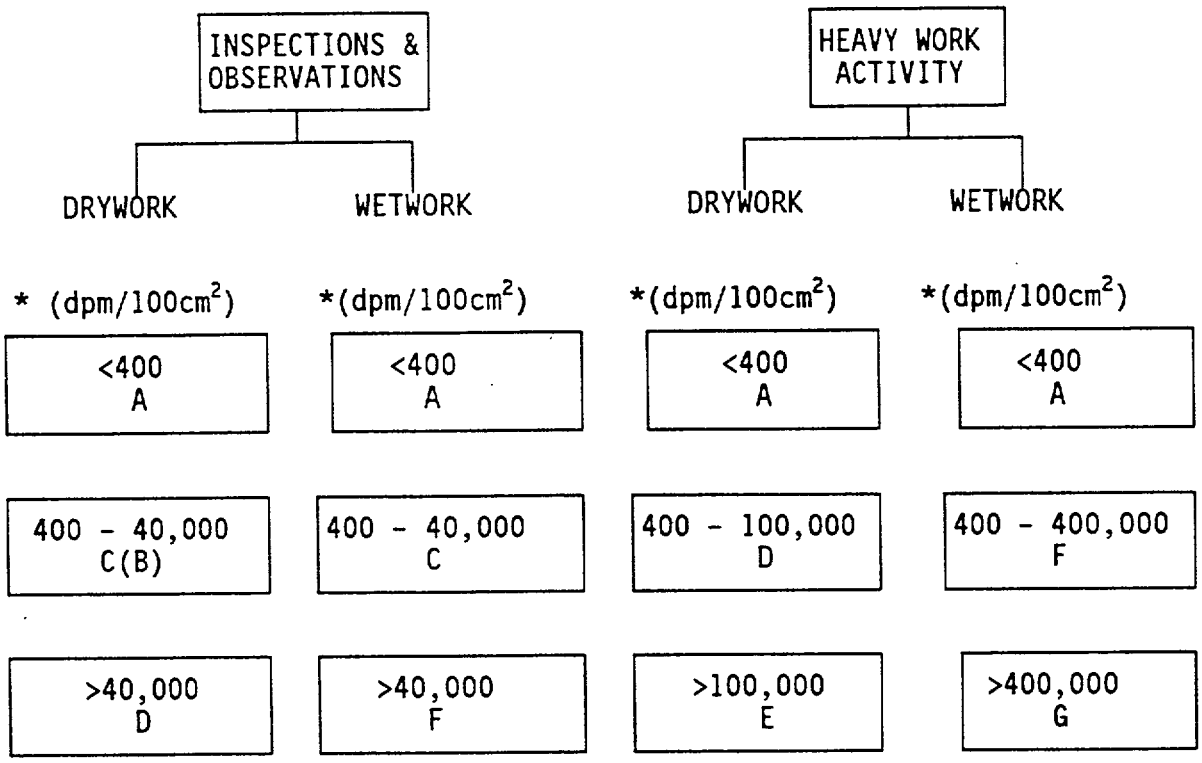
Manager Radiation Protection - Unit 1 — Date: 22 Apr 99

Approved by:
D. W. Barcomb

Manager Radiation Protection - Unit 2 — Date: 4-20-99

Effective Date: 04/30/1999

ATTACHMENT 1: PROTECTIVE CLOTHING GUIDE



* Removable surface contamination

Code	Minimum Clothing Guide
A	*Worker type 1*
B	• 400 - 1,000 dpm/100 cm^2 *Worker type 2*(see Notes 4,5 and 6) • 1,000-25,000 dpm/100 cm^2 *Worker type 2*(See Notes 4,5 and 6) • 25,000 dpm/100 cm^2, C applies
C	*Worker type 3* (see Note 1)
D	*Worker type 3* 40,000 - 100,000 dpm/100cm^2 determine need to prescribe E requirements
E	*Worker type 4* (see Note 2)
F	Plastic wet suit(see Notes 2 and 3) **PLUS** *Worker type 3* Assistance should be available for undressing
G	*Worker type 3* **PLUS** Air-line bubble suit or equivalent Assistance should be available for undressing

Worker Type 1: No Protective Clothing required.

Worker Type 2: Cotton liners, Rubber gloves, Cotton booties, Rubber shoe covers.

Worker Type 3: Cotton liners, Rubber gloves, Cotton booties, Rubber shoe covers, Cotton coveralls, Cotton cap, Cotton hood.

Worker Type 4: Cotton liners, Rubber gloves(2 pair), Cotton booties(2 pair), Rubber shoe covers, Cotton coveralls(2 Pair), Cotton cap. Cotton hood.

Worker Type 5: As defined by Radiation Protection Personnel

NOTES:

1. Cap should cover hair. A hood should be worn over the respirator straps unless water is overhead. If so, a plastic hood should be required.

2. Personnel should be required to wear some form of facial skin protection such as face shields in highly contaminated areas or when working in tight, confined spaces (e.g. between exposed turbine blades).

3. If work is to continue after removing plastic clothing, the protective cloth clothing should be changed to prevent migration of contaminants.

4. Lab coats may be specified as part of minimum clothing requirements to preclude personal clothing contaminations from inadvertent contact with surroundings.

5. Type of gloves should be consistent with expected contamination state (e.g. rubber for wet environment, rubber or cloth for dry environment).

6. If the activity involves repeated handling or rubbing against objects (e.g., cable pulls, overhead work, crawling or climbing, etc.), consider the use of scrub suits, or alternatives (Tyveks).

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	P&IDs
Question Number:	2

Question:

The plant is operating at power, when a LOCA signal is received.

Using RESIDUAL HEAT REMOVAL PRINT PID-31A-13, describe how the motor operated Testable Check Bypass Valve RHS*MOV67B is lined up during power operations and how the valve will respond to the LOCA signal.

Answer:

Valve is closed and will remain closed.
Per Note 9, The power supplies to the motor operator are opened to preclude spurious actuation during a control room fire.

Technical Reference(s):
PID-31A-13, Note 9

K/A #:	Importance:
2.1.24	3.1

Comments:

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	Piping and Instrument Drawings
Question Number:	1

Question:

Using the PIDs, trace the Fire Protection Water flow path from the motor driven fire pump, 2FPW-P2, to the RPV using RHS Train A. 2RHS*MOV24A is available for injection. Where necessary, add EOP equipment to be used.

Answer:

PID 43A, J-7	2FPW-P2, motor driven fire pump
PID 43A, L3, L-4	exit to PID 43B, K-3
PID 43B, K-3	fire water from PID 43A
PID 43B, I-4	exit to PID 43G, J-9
PID 43G, J-9	fire water from PID 43B
PID 43G, H-9	exit to PID 43F, E-9
PID 43F, E-9	fire water from PID 43G
PID 43F, G-6	disconnect fire hose from FHR (fire hose reel) 93 and connect EOP fire hose to FHR 93. Connect the EOP fire hose reel to Condensate Makeup and Transfer System blind flange (PID 4B, G-8)
PID 4B, G-8	fire water from PID 43F Blind flange for connecting EOP fire hose using equipment in EOP toolbox.
PID 4B, H-8	exit to PID 31A, A-1
PID 31A, A-1	fire water from PID 4B
PID 31A, C-5	fire water injection to the RPV using 2RHS*MOV24A

NOTE: It is not necessary to identify the valves on PIDs which are closed or verified closed to perform this evolution. (i.e., 2RHS*MOV33A [C-2] and 2RHS*MOV38A [B-6] on PID 31C, 2RHS*MOV12A [I-6] on PID 31D, 2RHS*MOV8A [B-3] on PID 31F).

See RO Test 1 A.2 Question 1 for P&IDs/References.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	Piping and Instrument Drawings
Question Number:	1

Technical Reference(s):
N2-EOP-06, Att. 6, Rev 05, Section 3.1 PID 43A, B, G, F PID 4B PID 31A

K/A #:	Importance:
2.1.24	3.1

Comments:

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Work Permits
Question Number:	1

Question:

Review the attached Survey 68 for Turbine Building 277' Condensate Demin Valve Aisle and identify the radiological hazard(s).

Answer:

a. Contaminated areas identified by lines with Xs on the left hand side of the room with contamination levels of (from bottom of page) 720dpm/100cm^2 , 3000dpm/100cm^2, and 3100dpm/100cm^2 .

b. High radiation levels in the bottom left hand side of the Valve aisle with radiation levels of 115mr/hr, 130mr/hr and 120 mr/hr.

Technical Reference(s):
S-RAP-RPP-0103, Sect. 4.0

K/A #:	Importance:
2.3.10	2.9

Comments:

68

Turbine Building 27'
Condensate Demin Valve Aisle

Survey # 2TS-16754
Date: 9/28/99
Page 2 of 2

mRem/hr general area
mRad/hr general area
30cm - dose rate @ 30cm from component
cont - dose rate @ contact with component

-contamination in dpm/100cm²
-contamination on component in dpm/100cm²
- location of LAW
- boundary
⊕ = <1000 dpm/100cm²

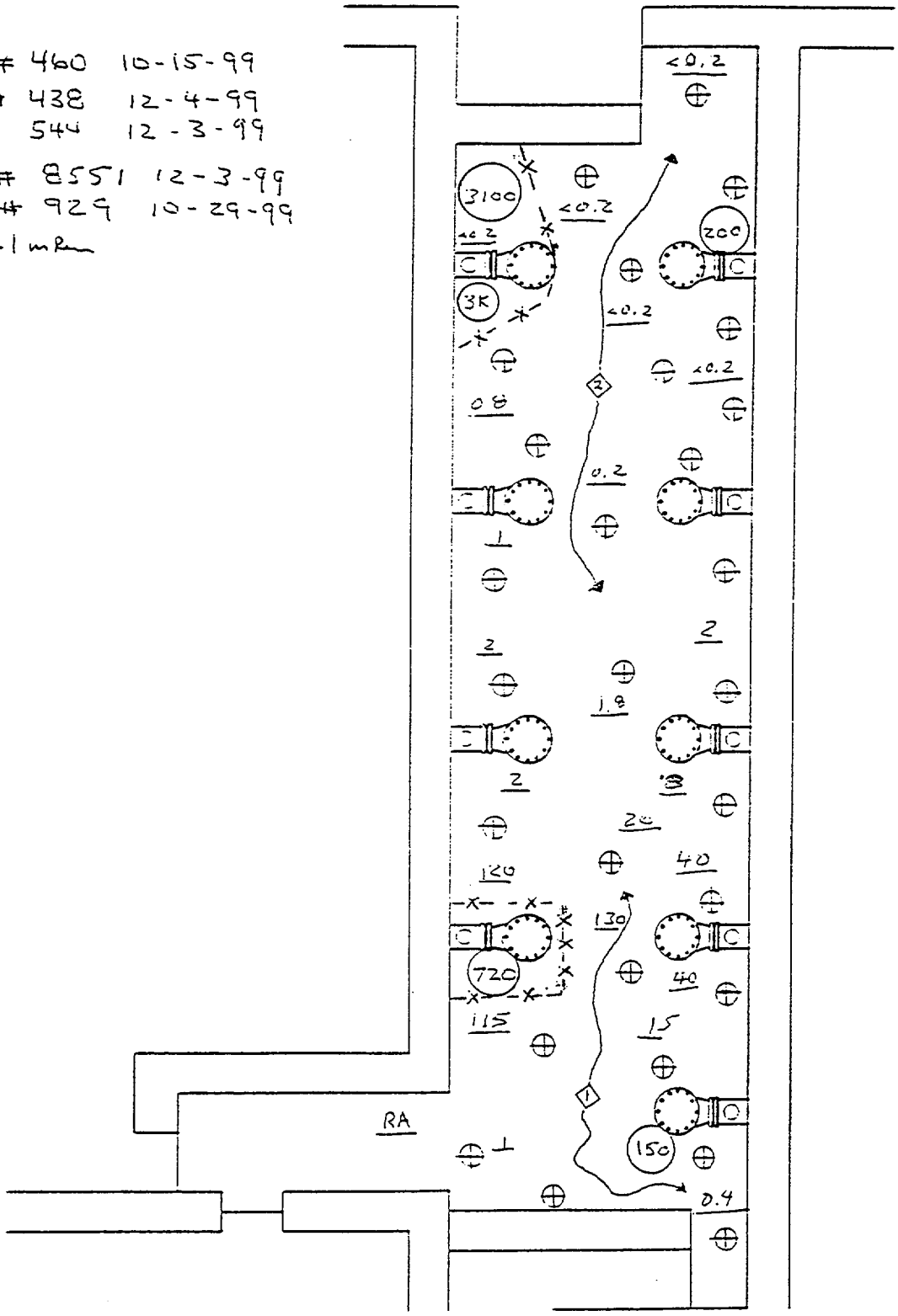
No β detected unless otherwise noted.
10 % of all smears >100dpm/100cm² were counted for α with results <10dpm/100cm² unless otherwise noted.

Rx power level: 100 %
Surveyed by: D. Allison

ew 2 were < BKGD of 100 cpm/15cm2 Direct Frisk

N

2 # 460 10-15-99
4 # 438 12-4-99
544 12-3-99
14 # 8551 12-3-99
C4 # 929 10-29-99
< 1 mR



NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

RADIATION PROTECTION ADMINISTRATIVE PROCEDURE

S-RAP-RPP-0103

REVISION 09

POSTING RADIOLOGICAL AREAS

Approved by:
V. L. Schuman

Manager Radiation Protection - Unit 1

31 Mar 99
Date

Approved by:
D. W. Barcomb

Manager Radiation Protection - Unit 2

3-31-99
Date

Effective Date: 04/08/99

3.3.4 (Cont)

d. Radiation Protection should observe and assist workers with personal monitoring prior to entering the Green Area.

e. Surveying the transport cart for RCA release should be performed per station procedure with the inside of the cart being surveyed at least once per shift when in use to ensure radiological cleanliness. Personal belongings inside the cart may be transferred to and from the Green Area without being surveyed.

4.0 DEFINITIONS

4.1 Accessible

Floor level up to approximately 6 feet and permanently installed platforms capable of being reached by a portion of the whole body. Does not include overhead areas that require climbing on plant structures or the use of portable ladders, scaffolding, etc.

4.2 Airborne Radioactivity Area

A room, enclosure, or area in which airborne radioactive materials, composed wholly or partly of licensed material, exist in concentrations:

a. In excess of the derived air concentrations (DACS) specified in Appendix B, to §§ 20.1001 - 20.2401, or

b. To such a degree that an individual present in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6 percent of the annual limit on intake (ALI) or 12 DAC hours.

4.3 Boundary

A means of limiting access by use of ropes, step-off-pads, tape, and other physical structures used to border a radiologically controlled area. The vertical planes formed by rope or other structures should define the area of control unless otherwise specified by RP Supervision.

4.4 Contaminated Area

Areas accessible to personnel where surface contamination exceeds:

4.4.1 400 dpm/100 cm^2 removable beta-gamma; OR

4.4.2 20 dpm/100 cm^2 removable alpha.

4.5 Deep Dose Equivalent

The dose equivalent at a tissue depth of 1 cm which applies to external whole body exposure.

4.6 Hands Off Inspection

Inspections conducted in radiologically controlled areas limiting physical contact with plant components and structures to that necessary to maintain individual safety (e.g., hand rails, railings).

4.7 Locked High Radiation Area

An area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 1000 mrem in one hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

4.8 High Radiation Area

An area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 100 mrem in one hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

4.9 Hot Particle Area

Work area within the RCA where hot particles have been identified.

4.10 Hot Spot

A locally intense source of radiation in which whole body exposure is greater than 25 mRem/hr at 30 cm and exceeds general area radiation levels by a factor of 5.

4.11 Derived Air Concentration

The concentration of a given radionuclide in air which, if breathed by the reference man for a working year of 2,000 hours under conditions of light work (inhalation rate 1.2 cubic meters of air per hour), results in an intake of one Annual Limit of Intake (ALI). DAC values are given in Table 1, Column 3, of appendix B to §§ 20.1001 - 20.2401.

4.12 Neutron Radiation Area

Areas accessible to personnel in which there exists neutron radiation at levels such that a major portion of the body could receive a neutron dose equivalent in excess of 2 mrem in one hour.

4.13 Posted Area

Room, area, component, etc., that has a sign bearing the radiation caution symbol and a warning of the radiological conditions in the room or area.

4.14 Radiation Area

Areas accessible to individuals in which there exists radiation at such levels that an individual could receive a dose equivalent in excess of 5 mrem in any one hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

4.15 Radioactive Material

For the purposes of tagging or labeling items or containers, radioactive materials are:

4.15.1 Any item or liquid removed from a contaminated area or system until sampled or surveyed by Radiation Protection personnel or other designated qualified individual.

4.15.2 Material inside the RCA that exceeds 18000 cpm/15 cm^2 (5 mRad/hr) fixed contamination or removable contamination in excess of 400 dpm/100 cm^2 beta-gamma or 20 dpm/100 cm^2 alpha.

4.15.3 Material (other than natural uranium or thorium) determined by Radiation Protection to exceed the applicable quantities listed in 10CFR20 Appendix C.

4.15.4 Material consisting only of natural uranium or thorium determined by Radiation Protection to exceed 10 times the applicable quantities listed in 10CFR20 Appendix C.

4.15.5 Any liquid determined to exceed the applicable concentrations listed in 10CFR20, Appendix B.

4.15.6 Material for release from the RCA determined by Radiation Protection to exceed the applicable quantities listed in 10CFR20 or as per requirements of S-RPIP-3.3.

4.16 Radioactive Material Storage Area

Areas designated for storage of radioactive materials in accordance with GAP-INV-02, Control of Material Storage Areas which:

4.16.1 Contain Radioactive Material that exceeds Restricted Area Control Limits of 18000 cpm/15 cm^2 fixed contamination or removable contamination of 400 dpm/100 cm^2 beta-gamma or 20 dpm/100 cm^2 alpha.

4.16.2 Contain Radioactive Materials in excess of 10 times (or natural uranium or thorium in excess of 100 times) the quantity of materials specified in 10CFR20, Appendix C, or 12 NYCRR, Table 7.

4.17 Radiologically Controlled Area (RCA)

Major plant areas access to which is limited for the purpose of protecting personnel from exposure to radiation and contamination. Examples include the Reactor, Turbine, Radwaste and Offgas Buildings.

Other radiologically controlled areas may be established with protective requirements specified by RP Supervision. Examples might include Radioactive Material Storage Areas at the warehouse or elsewhere on site.

4.18 Temporary Shielding

Any material authorized by the RP Supervisor or Designee to reduce beta, gamma or neutron exposure.

4.19 Very High Radiation Area

Areas accessible to personnel in which radiation levels could result in an individual(s) receiving an absorbed dose in excess of 500 rads in one hour at one meter from the source or any surface that the radiation penetrates.

Potential VHRA include, but are not limited to:

- TIP Rooms
- Upper Elevations of the Drywell during fuel moves
- Spent Fuel Pool during diving operations

4.20 Whole Body

Head, trunk (including male gonads), arms above the elbows, or legs above the knee.

4.21 Green Area

A low dose clean area, normally <0.2 mRem/hr and $\leq$100 dpm/100 cm^2 smearable, temporarily set up within the RCA to f7acilitate on going work.

4.22 Ready for Transport

When a package/vehicle is properly packaged, labeled, marked and placarded in accordance with all applicable regulations, shipping papers are in possession of the driver or attached to the package, and the carrier has taken possession of the package/vehicle.

Facility: Nine Mile Point # 2 Examination Level (circle one): **RO**		Date of Examination: 12/06/99 Operating Test Number: Cat A Test 2
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Fuel Handling	Question 1. You are the ATC RO during a core reload. A fuel assembly is being lowered into the reactor vessel when the indications for inadvertent criticality are observed. What actions are required to be taken? K/A 2.4.4, 2.4.11, 2.2.26, 2.2.27
		Question 2. The plant is in a refueling outage with a reactor core offload in progress. The following equipment is removed from service: • Div III 4160 VAC emergency bus is deenergized for maintenance • Condensate/Feedwater system drained and tagged for outage work What sources are available for makeup to the reactor cavity? K/A 2.2.27
	Security	Question 1. What actions are required to obtain access to the Steam Tunnel and responsibilities for maintaining security of the area? K/A 2.1.2, 2.1.13
		Question 2. Identify applicable requirements associated with escorting individuals. K/A 2.1.2, 2.1.13
A.2	Temporary Modifications to Systems	Question 1. Two inputs to 2CEC*PNL851, Annunciator 851306, OFF-GAS SYSTEM TROUBLE, have been removed from service under a markup. What steps must be taken to identify this condition? K/A 2.2.13
		Question 2. What are the authorization and documentation requirements for the CSO/SSS in order to install a hose (mechanical jumper) between two systems? K/A 2.2.11
A.3	Radiation Exposure Limits	Question 1. Your current exposure for the calendar year is 3800 mrem. A job requires that you receive 300 mrem. What actions are required prior to performing the job? K/A 2.3.4, 2.3.10
		Question 2. What actions are required to enter a Very High Radiation Area? K/A 2.3.1, 2.3.4, 2.3.10
A.4	Emergency Classification as CSO	JPM: EPIP-EPP-28, Fire Fighting, CSO Actions for a fire in the protected area. K/A 2.4.27, 2.4.29

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Fuel Handling
Question Number:	1

Question:

You are the ATC RO during a core reload. A fuel assembly is being lowered into the reactor vessel when the following indications are received:

- Annunciator 603209, SRM SHORT PERIOD, alarms
- All SRM count rates are rising
- Reactor period is 45 seconds and stable
- RMS111 alarms and indicates a high alarm (red) on DRMS

What actions are required to be taken?

Answer:

- Announce the event and evacuate unnecessary personnel
- Notify the SSS, refueling floor SRO, Radiation Protection
- Isolate reactor building ventilation and start Standby Gas Treatment
- Enter EPIP-EPP-21, Radiation Emergencies
- Monitor DRMS and SPDS
- Contact Reactor Engineering Department

Note: Injecting SLS is not required by the candidate when answering the question. SLS injection would be determined and directed by the SSS.

Note: If the cause can be quickly rectified without overexposure to personnel, then take action to halt the event. This is a decision of the SRO on the refuel bridge once notified of event and is NOT required by the candidate.

Technical Reference(s):

N2-SOP-39, Rev 01, Section 3.0, Section 4.1, Section 4.4

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Fuel Handling
Question Number:	1

K/A #:	Importance:
2.4.4, 2.4.11, 2.2.26, 2.2.27	4.0, 3.4, 2.5, 2.6

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT 2

SPECIAL OPERATING PROCEDURE

N2-SOP-39

REVISION 01

REFUEL FLOOR EVENTS

TECHNICAL SPECIFICATION REQUIRED

Approved by:
D. P. Bosnic

Manager Operations - Unit 2

8/17/98
Date

Effective Date: 08/21/98

PERIODIC REVIEW DUE DATE AUGUST 2000

3.0 IMMEDIATE ACTIONS

(C1)

3.1 IF Refueling is in progress, notify Refuel Floor SRO/LSRO of the event.

3.2 IF the cause of an Inadvertent Criticality During Refueling can be quickly rectified without risk of overexposure to personnel, take appropriate actions to halt the criticality.

3.3 IF time AND radiation levels permit, place ALL irradiated components being handled in the Reactor Cavity OR Spent Fuel Pool in a safe position as directed by Refuel Floor SRO/LSRO OR SSS.

3.4 Evacuate unnecessary personnel from the Refuel Floor AND Drywell.

4.0 SUBSEQUENT ACTIONS

4.1 General Actions

- WHEN time permits, make an announcement to notify station personnel of the event . . . . . (__)

- Notify the following of the event:

  - SSS . . . . . (__)

  - Refuel Floor Coordinator (during Refuel Outages only) OR Supervisor - Reactor Engineering (all other times) . . . . . (__)

  - Radiation Protection . . . . . (__)

- IF Core Alterations are in progress, suspend Core Alterations . . . . . (__)

  N/A, Core Alterations NOT in progress . . . . . (__)

- Isolate the Reactor Building AND initiate the Standby Gas Treatment System . . . . . (__)

- IF Area OR Ventilation Radiation Monitors alarm, enter EPIP-EPP-21, Radiation Emergencies, AND execute concurrently with this procedure . . . . . (__)

  N/A, NO Radiation Monitors alarmed . . . . . (__)

(C2) • IF applicable, activate the Emergency Plan in accordance with EPIP-EPP-18, Activation and Direction of the Emergency Plans . . . . . (__)

  N/A, Emergency Plan NOT activated . . . . . (__)

4.4 Inadvertent Criticality During Refueling

4.4.1 IF the Reactor is still critical, perform the following:

N/A, Reactor is NOT critical . . . . . (__)

a. IF there are scramable Control Rods withdrawn, manually scram the Reactor . . . . . (__)

b. IF SLS System is available AND as directed by SSS, perform the following:

N/A, SLS System NOT available OR SSS directs NOT to initiate SLS System . . . . . (__)

1. Manually initiate Standby Liquid Control System . . . . (__)

2. Verify Reactor Water Cleanup System has isolated . . . (__)

3. IF directed by SSS, remove SFC Filter/Demins from service to minimize loss of boron . . . . . (__)

N/A, SSS directs NOT to remove SFC Filter/Demins OR SFC Filter/Demins NOT in service . . . . (__)

4. Notify Chemistry Department to prepare additional batches of sodium pentaborate . . . . . (__)

NOTE: Performing the following step will reduce the volume required to be borated.

5. IF directed by SSS, dispatch personnel to install the following:

N/A, SFP AND Internals Pit Gates will NOT be installed . . . . . (__)

- Spent Fuel Pool Gates . . . . . (__)
- Internal Storage Pit Gate . . . . . (__)

6. IF directed by SSS, shut down SFC flow to Reactor Cavity and Internals Storage Pit per N2-OP-38, F.12.0 AND F.14.0 . . . . . (__)

N/A, SSS directs NOT to secure flow OR flow is already NOT in service . . . . . (__)

c. Continue efforts to shutdown the Reactor . . . . . (__)

4.4.2 Monitor DRMS AND SPDS for possible Radioactive Release . . . . . (__)

4.4.3 Contact Reactor Engineering Department for investigation . . . . (__)

4.4.4 WHEN directed by SSS, exit this procedure . . . . . (__)

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Fuel Handling
Question Number:	2

Question:

The plant is in a refueling outage with a reactor core offload in progress. The following equipment is removed from service:

- Div III 4160 VAC emergency bus is deenergized for maintenance
- Condensate/Feedwater system drained and tagged for outage work

What sources are available for makeup to the reactor cavity?

Answer:

- LPCS
- LPCI (A, B, or C)

Technical Reference(s):

N2-SOP-39,
Section 4.2.5, Section 4.2.6

K/A #:	Importance:
2.2.27	2.6

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT 2

SPECIAL OPERATING PROCEDURE

N2-SOP-39

REVISION 01

REFUEL FLOOR EVENTS

TECHNICAL SPECIFICATION REQUIRED

Approved by:
D. P. Bosnic

Manager Operations - Unit 2

8/17/98
Date

Effective Date: 08/21/98

PERIODIC REVIEW DUE DATE AUGUST 2000

4.2 Loss of Reactor Cavity or Spent Fuel Pool Inventory

(C1)

NOTE: The following step is to be performed concurrently with the rest of Subsection 4.2.

4.2.1 IF WHILE performing the following steps the Technical Support Center is manned, contact TSC for guidance on prevention of excessive radiation exposure . . . . . (__)

N/A, TSC was NOT manned during this procedure . . . . . (__)

WARNING

Significant radiation levels may exist on the Refuel Floor depending on Spent Fuel Pool/Reactor Cavity level. Extreme care must be used to prevent personnel from receiving high doses of radiation.

4.2.2 Dispatch personnel to identify the cause of lowering level . . . (__)

4.2.3 IF Refuel Seal Low Pressure alarm is in, restore air pressure to Refuel Seal . . . . . (__)

N/A, Refuel Seal Low Pressure alarm is NOT in OR Plant is NOT in Refuel Outage . . . . . (__)

(C2) 4.2.4 IF level is lowering rapidly due to catastrophic events, evacuate the entire Reactor Building . . . . . (__)

N/A, level NOT lowering due to a catastrophic event . . . . (__)

4.2.5 IF Reactor Cavity is flooded, maintain Reactor Cavity/Spent Fuel Pool level using available injection sources in order listed below. Defeat CSH Level 8 interlock per N2-OP-33, Subsection H.11.0 as required:

- Condensate/Feedwater
- HPCS with Suction from CST
- HPCS with Suction from Suppression Pool
- LPCS or LPCI (A, B, or C) . . . . . (__)

(C2) 4.2.6 IF ECCS Systems are used to maintain water level, make the Injection Valve throttlable in accordance with the applicable Operating Procedure(s) as listed below:

N/A, ECCS Systems NOT used to maintain water level . . . . (__)

- RHS System N2-OP-31, Subsection H.9.0
- CSL System N2-OP-32, Subsection H.1.0
- CSH System Can NOT be made throttlable until directed by the EOPs . . . . . (__)

NOTE: CNS is the preferred source of water to use in step 4.2.7. However, if needed, both CNS and MWS may be used simultaneously.

WARNING

Significant radiation levels may exist on the Refuel Floor depending on Spent Fuel Pool/Reactor Cavity level. Extreme care must be used to prevent personnel from receiving high doses of radiation.

(C2) 4.2.7 IF directed by SSS, dispatch personnel to add water to the Reactor Cavity, Spent Fuel Pool, OR Internals Storage Pit from Service Boxes as follows:

N/A, SSS directs NOT to add water . . . . . (__)

a. IF Condensate Storage and Transfer System (CNS) is to be used, perform the following:

N/A, CNS System will NOT be used . . . . . (__)

1. Verify CNS is available to supply water to Refuel Floor Service Boxes . . . . . (__)

2. Verify the following Header Isolation Valves are open:

   - 2CNS-V181, REFUEL FLOOR SUPPLY ISOL (Rx Bldg, elev 306', about azimuth 330°, about four feet off the floor, by the Level Instrument Reference Leg Backfill Rack) . . . . . (__)
   - 2CNS-V182, REFUEL FLOOR SUPPLY ISOL (Rx Bldg, elev 289', about azimuth 56°, about twenty feet off the floor, above and about two feet to the right of the door to the north stair tower) . . (__)

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Security
Question Number:	1

Question:

During an outage, with the plant in Mode 4, you are directed to hang a Markup on feedwater valves in the Steam Tunnel.

What must you do to obtain access to the Steam Tunnel and what are your responsibilities for maintaining security of the area?

NOTE: RWP requirements are NOT required when answering this question.

If asked, if the steam tunnel area has been "de-vitalized", inform the candidate that the area has NOT been de-vitalized. (NIP-SEC-01, 3.6)

Answer:

Permission to access the Steam Tunnel must be obtained from Radiation Protection prior to obtaining the key. The key is obtained from SSS (done by getting the key from the locked key cabinet and completing the sign out log).

Once an individual has the key they must maintain it in their possession and no one else is allowed to use the key.

The key may NOT leave the protected area and must be returned at the end of the shift or completion of the task whichever is sooner.

Technical Reference(s):

NIP-SEC-01, Section 3.6
NIP-SEC-02,
Sections 3.2.3, 3.2.6, 3.2.7
GAP-OPS-01, Section 3.7.4

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Security
Question Number:	1

K/A #:	Importance:
2.1.2, 2.3.10	3.0, 2.9

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

NUCLEAR INTERFACE PROCEDURE

NIP-SEC-01

REVISION 09

PROTECTED/VITAL AREA ACCESS

TECHNICAL SPECIFICATION REQUIRED

Approved by: _____ 9/22/97
C. D. Terry
Vice President Nuclear Safety Assessment and Support
Date

CONTROLLED

Effective Date: 10/15/98

3.5 Review of Protected/Vital Area Access Authorization

3.5.1 At least every 31 days, Badging personnel shall issue to each Site Sponsor an updated list of the personnel they have sponsored for unescorted access to the Protected Area.

3.5.2 Site Sponsors shall review the list (commonly known as the Restricted Level Report), approve it in writing, and return it to the Badging Office. If the designated Site Sponsor is absent, another Site Sponsor, who is cognizant of the sponsored personnel's need for access, may fulfill this responsibility.

a. Site Sponsors shall ensure personnel authorized access to the Protected Area still have a need for access and, if not, initiate termination of access in accordance with Section 3.13.

b. Site Sponsors shall ensure personnel authorized to enter Vital Areas still have a job-related need to access vital equipment and are authorized access only for the duration of the tasks to be performed.

c. Site sponsors may initiate changes to an individual's Vital Area access by marking the changes on the Restricted Level Report as follows:

1) To delete access, line out the "A" in the applicable restricted level column for the individual and circle the change.

2) To add access, write "A" in the applicable restricted level column for the individual and circle the change.

NOTE: Granting of access to the Central and Secondary Alarm Stations and the Unit 2 Remote Shutdown Room shall be done in accordance with Section 3.4.2.

d. Site Sponsors should return the report to the Badging Office within five business days of receipt.

3.6 Devitalization/Revitalization of Vital Areas During Refueling/Major Maintenance Periods

3.6.1 During refueling and major maintenance periods, certain vital areas may be "devitalized" i.e., suspended vital area access controls, provided:

a. A determination of the need for devitalization is made ensuring that any devitalization would not result in an increase of the likelihood of radiological sabotage.

b. Operations personnel are involved in the devitalization determination.

3.6.1 (Cont)

c. A devitalization plan, approved by the Manager Nuclear Security and the Manager Operations, is developed to include inspection of the vital area prior to revitalization.

3.6.2 The following areas may not be devitalized for any reason:

a. Reactor Building

b. Control Room

c. CAS - Central Alarm Station

4. SAS - Secondary Alarm Station

3.7 Changing Individual(s) from One Site Sponsor to Another

3.7.1 When it becomes necessary to change individual(s) from one Site Sponsor to another, the new Site Sponsor shall forward documentation as described below to the Badging Office.

a. If no change to Vital Area access is required for the individual(s):

A memo listing the name(s) and social security number(s) of the sponsored individual(s) or a Badge Application with Sections 1 through 4 completed.

b. If changes to Vital Area access are required for the individuals:

A Badge Application (Attachment 1) with the appropriate portions of Sections 1 through 4 completed for each individual.

NOTE: If Section 3 is left blank, the individual(s) will not be given access to any vital areas.

3.7.2 Badging Personnel shall carry out the Site Sponsor transfer as requested and, as applicable, grant access to only those Vital Areas indicated by the Site Sponsor in Section 3 of the Badge Application.

3.8 Changing an Individual's Escort Status

3.8.1 To change an individual's escort status, the Site Sponsor shall complete Section 1, Section 2, line 1, and Section 4, line 1 of the Badge Application (Attachment 1).

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

NUCLEAR INTERFACE PROCEDURE

NIP-SEC-02

REVISION 08

GENERAL SECURITY REQUIREMENTS

TECHNICAL SPECIFICATION REQUIRED

Approved by: _____ 7/22/98.
C. D. Terry
Safety Assessment and Support
Date

Effective Date: 07/29/98

3.2.3 Personnel issued vital area keys shall retain the keys in their personal possession and shall not remove the keys from the protected area, except as permitted by Nuclear Security Branch procedures. These vital area keys shall be attached to the individual's photo ID badge and shall only be removed by Nuclear Security.

3.2.4 Individuals who have been issued a vital area key on their photo ID badge shall return the key to Nuclear Security whenever:

a. The individual's job function changes such that a vital area key is no longer required to perform job duties.

b. The individual changes departments.

3.2.5 The SSS shall control temporary issuance of vital area keys assigned to the Control Room ensuring:

a. A key sign out log for temporarily issued keys is used.

b. A separate locked cabinet is used to store the key log and unissued keys.

3.2.6 Personnel receiving a temporarily issued vital area key from the SSS shall retain the key in their possession and shall not remove the key from the protected area.

3.2.7 Personnel shall return temporarily issued vital area keys to the SSS upon completion of use or prior to completing their shift, whichever is sooner.

3.3 Deliveries into the Protected Area

3.3.1 Nuclear Security shall ensure packages and materials to be delivered into the protected area from offsite are properly identified, authorized, and searched in accordance with applicable security procedures.

3.3.2 For deliveries to Materials Management arriving during normal working hours, storekeeper authorization is required.

3.3.3 For all other deliveries, authorization shall be provided by a NMPC Nuclear Division Supervisor, who possesses unescorted access authorization and who is knowledgeable in the details of the delivery (ie., contents, arrival time, name of carrier, etc.).

3.3.4 When applicable and before permitting the delivery into the protected area, Nuclear Security shall contact Radiation Protection to ensure that appropriate surveys are performed in accordance with radiation protection requirements.

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-OPS-01

REVISION 11

ADMINISTRATION OF OPERATIONS

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

Robert G. Smith
Plant Manager - Unit 1

12/22/98
Date

Approved by:
N. C. Paleologos

Plant Manager - Unit 2

12/22/98
Date

Effective Date: 12/31/1998

3.6.2 (Cont)

b. The SSS shall review the impact to system operation, operability requirements, and reportability, and:

1. Determine the correct configuration of the system or component.

2. Direct action, as necessary, to restore the system or component to proper configuration.

3. If required, initiate a DER in accordance with NIP-ECA-01, Deviation/Event Report.

(C16) 3.7 **Key Control**

NOTE: SSS key control responsibilities are included in GAP-RPP-08, Control of Transient High and Locked High Radiation Areas.

3.7.1 The SSS shall maintain:

a. A list of key controlled items and areas under the authority of the Operations Branch.

b. Control of controlled keys until issue

3.7.2 The SSS or ASSS shall:

a. Grant permission for issue of a controlled key.

b. Maintain issuance of controlled keys.

3.7.3 "On-duty" personnel issued certain controlled keys for the performance of normal and emergency duties within an area of responsibility shall:

a. Maintain control of the keys; AND

b. Prevent unauthorized personnel from possessing or using controlled keys.

3.7.4 Unit 2 Steam Tunnel

The key for access to the Unit 2 Steam Tunnel (Vital Area Door R-240-6) shall be controlled by the SSS and issued in accordance with NIP-SEC-02, Security requirements.

NOTE: This key is required to enter and to exit the Steam Tunnel. This key shall remain with the individual to whom it was issued until returned to the SSS. Personnel accessing this area shall obtain Radiation Protection approval for entry prior to key issuance.

3.7.5 Emergency Access

The SSS may use or authorize use of HRA Master keys stored in the "break-to-enter" key box located in the Control Room. The box contains keys to access transient, high, locked high and very high radiation areas. The SSS shall utilize a Radiation Protection technician when using these keys, to ensure compliance with technical specifications.

3.7.6 Vital Area Key Inventory

a. The SSS shall control temporary issuance of vital area keys assigned to the Control Room, ensuring:

- A key signout log is used for temporarily issued keys
- The key signout log and unissued keys are stored in a separate, locked cabinet.

b. The Shift Security Supervisor, with assistance from the SSS shall conduct a daily inventory of vital area keys stored in the Control Room.

3.7.7 Loss of Control

A controlled key not properly issued from its storage location or a properly issued key found unattended shall constitute a loss of key control. The following shall apply if a loss of key control occurs:

a. Vital Area Key

The SSS and Nuclear Security shall be notified immediately of any loss of control of a vital area key.

b. Non-Vital Area Key

The SSS shall be notified immediately of any loss of control of a non-vital area controlled key. Upon notification, the SSS shall assess the significance of the loss of control and initiate appropriate action to assure positive control of the locked component, device or door is restored or maintained.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Security
Question Number:	2

Question:

You have been assigned to escort 6 contractors to set up temporary equipment for an upcoming Outage. The job will take 5 days.

Identify any applicable requirements associated with escorting the individuals.

Answer:

NIP-SEC-01, Attachment 3, Request To Exceed Limitations On Visits To The Protected Area must be filled out to exceed 3 consecutive days, and exceed the 5:1 visitor limit.

Technical Reference(s):
NIP-SEC-01, Rev 09 Section 3.14.9.b, 3.14.9.c

K/A #:	Importance:
2.1.2	3.0

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

NUCLEAR INTERFACE PROCEDURE

NIP-SEC-01

REVISION 09

PROTECTED/VITAL AREA ACCESS

TECHNICAL SPECIFICATION REQUIRED

Approved by: _____ Date 9/22/98

C. D. Terry
Vice President Nuclear Safety Assessment and Support

CONTROLLED

Effective Date: 10/15/98

3.14.6 (Cont)

c. Purpose of visit and name of individual to be visited or name of escort

d. Employment affiliation

e. Citizenship

3.14.7 Nuclear Security shall verify that proper approval per Section 3.14.2 has been obtained for the visitor's escorted access to the Protected Area.

3.14.8 Before allowing visitors initial entry to the Protected Area, Nuclear Security shall ensure visitors are issued a visitor badge and are accompanied by an authorized escort.

3.14.9 (C3) All personnel serving as visitor escorts shall:

a. When serving as the initial escort, meet their visitor(s) at the Entrance Registration Desk in the Security Building, review a set of escort instructions, and indicate that they have done so.

b. Ensure that the visitor(s) they are escorting do not exceed the consecutive day limit on visits to the Protected Area (never more than three, unless, by using Attachment 3, approval to exceed the limit has been obtained from the Manager Nuclear Security).

c. Escort no more than the quantity of visitors determined by the planner to be appropriate (never more than five, unless, by using Attachment 3, approval to escort a greater number has been obtained from the Manager Nuclear Security).

d. While inside the Protected Area, continuously accompany and control visitors under their escort.

e. Contact Nuclear Security at once if a visitor displays suspicious or aberrant behavior.

f. Relinquish escort responsibilities only to another authorized escort who has indicated acceptance of escort duties, as listed on the escort instructions card attached to the visitor's badge.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.2
Subject Description:	Temporary Modifications
Question Number:	1

Question:

Two (2) inputs to annunciator, 851306, OFF GAS SYSTEM TROUBLE, on 2CEC*PNL851 are removed from service under a markup. What steps must be taken to identify this condition?

Answer:

Must be identified in the defeated annunciator log.

Transparent yellow sticker, with markup number (or other work document number) and the associated computer points identified on it, shall be attached to the affected annunciator window.

Technical Reference(s):
GAP-DES-03, Section 3.4.3
N2-ARP-01, Attachment, Page 1259

K/A #:	Importance:
2.2.13	3.6

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-DES-03

REVISION 08

CONTROL OF TEMPORARY MODIFICATIONS

TECHNICAL SPECIFICATION REQUIRED

Approved By:
R, G. Smith

Plant Manager - Unit 1 — Date 11/12/98

Approved By:
N. C. Paleologos

CONTROLLED
Plant Manager - Unit 2 — Date 11-16-98

Effective Date: 11/23/98

3.3.4 (Cont)

d. Verifying required changes to applicable procedures and/or Control Room critical drawings have been implemented.

3.3.5 The CSO shall record temporary modification clearances in the CSO log and on the temporary modification forms.

3.3.6 The SSS shall review cleared temporary modification packages to determine the operability status of affected systems or components and record temporary modification clearances in the SSS log and on the temporary modification forms.

3.3.7 The System Engineer shall notify Nuclear Training of clearance for evaluation of simulator impact.

3.3.8 The System Engineer shall ensure all documentation and training requirements of the temporary modification are complete and document in the temporary modification form.

3.3.9 (C13) The System Engineer shall return the completed Temporary Modification Package including copies of any procedure changes made due to the temporary modification, to the temporary modification files maintained by the Manager of Technical Support or designee.

3.4 Defeated Annunciators

3.4.1 When annunciator circuits or components malfunction the annunciator circuits or components may be taken out of service under a markup or holdout per GAP-OPS-02 without processing a temporary modification. In these cases, the SSS shall make an assessment regarding annunciator response procedure annotation or compensatory actions.

3.4.2 If Step 3.4.1 is not applicable to the defeated annunciator, personnel shall determine if a temporary modification is applicable.

3.4.3 Operations Branch personnel shall ensure annunciators defeated per 3.4.1 and 3.4.2 are entered in the Defeated Annunciator Log (Attachment 6) and identified by attaching a sticker to the affected annunciator window, as follows:

a. A transparent yellow sticker shall be used to indicate one or more multiple inputs have been defeated.

3.4.3 (Cont)

b. A transparent red sticker shall be used to indicate all inputs have been defeated.

c. When the last active input is defeated, the CSO shall replace the yellow sticker with a red sticker.

d. The document number authorizing the defeated annunciator (such as temporary modification or markup), and the associated computer point(s) should be identified on the sticker, if practical.

3.5 Temporary Modification Program Review

3.5.1 The Manager Technical Support shall ensure a review of the Temporary Modification Program is performed and documented at least once per year. The review should include:

a. Identification of long-standing temporary modifications.

NOTE: A long-standing temporary modification is defined as a temporary modification implemented for a period of greater than six months.

(C3) b. Verification that temporary modification packages are current and complete for existing temporary modifications.

c. Physical verification of existing accessible temporary modification installations.

d. Forwarding the following to Records Management per NIP-RMG-01.

1. Completed Temporary Modification File Index pages

2. Cleared Temporary Modification Forms

3.5.2 The Manager Technical Support shall issue an annual report that provides dispositions for long-standing temporary modifications and identifies any DERs or other documentation initiated as a result of the review.

4.0 DEFINITIONS

4.1 **Defeated Annunciator** - An annunciator window having a temporarily altered circuit because of a design deficiency, malfunctioning component, or markup for pre-planned maintenance.

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT 2

ALARM RESPONSE PROCEDURE

N2-ARP-01

REVISION 00

CONTROL ROOM ALARM RESPONSE PROCEDURES

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

Manager Operations - Unit 2 & RGS

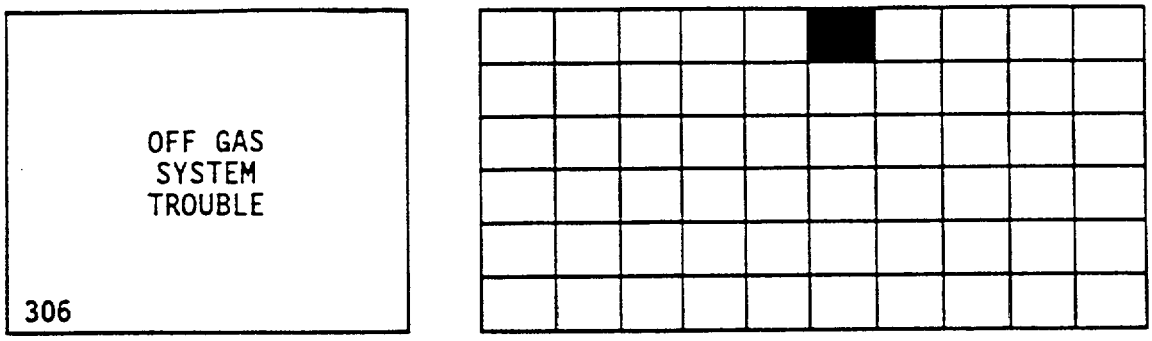
6/7/96
Date

PERIODIC REVIEW, 05/05/98, NO CHANGE

Effective Date: 6/20/96

PERIODIC REVIEW DUE DATE MAY 2000

Reflash: YES 2CEC*PNL851 851306



Computer Point	Printout	Source	Setpoint
OFGAC03	CNSR CND1A OUT H2 CONC	ANN. 122117	N/A
OFGAC04	CNSR CND1B OUT H2 CONC	ANN. 122217	N/A
OFGAC05	CNSR COMBINED OUTLET H2	ANN. 122105	N/A
OFGBC02	TRAIN A SHUTDOWN	ANN. 122124	N/A
OFGBC03	TRAIN B SHUTDOWN	ANN. 122224	N/A
OFGFC07	CONDENSER 1A OUTLET FLOW	ANN. 122123	N/A
OFGFC08	CONDENSER 1B OUTLET FLOW	ANN. 122223	N/A
OFGLC11	CONDENSER CND1A LEVEL	ANN. 122121	N/A
OFGLC12	CONDENSER CND1B LEVEL	ANN. 122221	N/A
OFGLC13	CONDENSER CND1A LEVEL	ANN. 122115	N/A
OFGLC14	CONDENSER CND1B LEVEL	ANN. 122215	N/A
OFGLC30	DRYER DRN RCVR TK1 LEVEL	ANN. 122201	N/A
OFGLC31	DRYER DRN RCVR TK1 LEVEL	ANN. 122202	N/A
OFGPC06	OFFGAS SYS INLET PRESS	ANN. 122102	N/A
OFGPC07	DRYERS DIFF PRESS	ANN. 122207	N/A
OFGPC08	HEPA FILTERS DIFF PRESS	ANN. 122104	N/A
OFGPC09	VAC PMP 2OFG-P1A INL PR	ANN. 122118	N/A

2CEC*PNL851 851306 (Cont)

Computer Point	Printout	Source	Setpoint
OFGPC10	VAC PMP 2OFG-P1B INL PR	ANN. 122218	N/A
OFGTC20	RBNR1A INLET TEMP	ANN. 122113	N/A
OFGTC21	RBNR1B INLET TEMP	ANN. 122213	N/A
OFGTC22	RBNR1A INLET TEMP	ANN. 122119	N/A
OFGTC23	RBNR1B INLET TEMP	ANN. 122219	N/A
OFGTC24	RBNR1A OUTLET TEMP	ANN. 122114	N/A
OFGTC25	RBNR1B OUTLET TEMP	ANN. 122214	N/A
OFGTC26	CNSR CND1A OUTLET TEMP	ANN. 122116	N/A
OFGTC27	CNSR CND1B OUTLET TEMP	ANN. 122216	N/A
OFGTC28	DRYER DRY1A OUTLET TEMP	ANN. 122209	N/A
OFGTC29	DRYER DRY1B OUTLET TEMP	ANN. 122210	N/A
OFGTC30	DRYER DRY1C OUTLET TEMP	ANN. 122211	N/A
OFGTC34	REFRIGERATOR REF-2A MOT	ANN. 122107	N/A
OFGTC35	REFRIGERATOR REF-2B MOT	ANN. 122109	N/A
OFGTC36	REFRIGERATOR REF-2C MOT	ANN. 122111	N/A
OFGTC37	VAC PMP 2OFG-P1A MOT	ANN. 122122	N/A
OFGTC38	VAC PMP 2OFG-P1B MOT	ANN. 122222	N/A
OFGTC39	OFFGAS INLET TEMP	ANN. 122101	N/A
OFGZC01	OFFGAS TO STACK AOV103	ANN. 122120	N/A

2CEC*PNL851 851306 (Cont)

Automatic Response

See appropriate Alarm Response Procedure(s) (ARPs) for 2OFG-IPNL122 alarm(s).

Operator Actions

1. Perform actions as specified in the appropriate ARP(s) for 2OFG-IPNL122 alarm(s).

2. IF conditions indicate a loss of Condenser vacuum, enter N2-SOP-09, LOSS OF CONDENSER VACUUM.

3. IF conditions indicate that a hydrogen explosion has occurred in the OFG System, enter N2-SOP-42, OFF GAS SYSTEM HYDROGEN EXPLOSION.

4. IF this annunciator is the result of an Offgas System perturbation involving an increase in Offgas System flow/activity, THEN monitor Offgas activity and refer to Tech Spec 4.11.2.7.2.b for sampling requirements.

Possible Causes

See appropriate ARP(s) for 2OFG-IPNL122 alarm(s).

References

- See appropriate ARP(s) for 2OFG-IPNL122 alarm(s)
- N2-SOP-09
- N2-SOP-42
- N2-OP-42

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.2
Subject Description:	Temporary Modifications
Question Number:	2

Question:

Due to equipment malfunctions, a hose needs to be installed to supply additional makeup water to the HVH (Hot Water Heating System) expansion tank from the (MWS) Makeup Water System. The hose will remain in place until system repairs can be completed in about a week. A work order has yet to be generated.

What are the authorization and documentation requirements for the CSO/SSS in order to install the hose?

Answer:

Note: The candidate should identify hose installation as a temporary modification (GAP-DES-03, 1.1.7)

The authorization and documentation requirements are:

1. SSS and CSO permission is required to implement the temporary modification.
2. SSS review, determine any operability concerns. (For SRO's only)
3. Log in CSO and SSS logs.
4. Initial appropriate blocks of Temporary Mod Form, Attachment 1, Section 2, blocks G and H.

Technical Reference(s):
GAP-DES-03, Applicability 1.1.7, Mechanical Jumper and 3.2

K/A #:	Importance:
2.2.11	2.5

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-DES-03

REVISION 08

CONTROL OF TEMPORARY MODIFICATIONS

TECHNICAL SPECIFICATION REQUIRED

Approved By:
R, G. Smith

R. G. Smith
Plant Manager - Unit 1

11/12/98
Date

Approved By:
N. C. Paleologos

CONTROLLED
N. C. Paleologos
Plant Manager - Unit 2

11-16-98
Date

Effective Date: 11/23/98

1.0 PURPOSE

To establish controls for the review, implementation, and clearance of temporary modifications at Nine Mile Point Nuclear Station.

1.1 Applicability

This procedure applies to temporary modifications to site installations, facilities, structures, and inservice systems and components therein, as described in the Unit UFSAR. The following types of alterations, if not excluded per Section 1.2, are considered temporary modifications.

1.1.1 Lifted lead - temporarily disconnected electrical conductor that is normally connected, thus modifying the circuit design or configuration.

1.1.2 Electrical jumper - an electrical connection installed between points not ordinarily connected, thus modifying the circuit design or configuration.

1.1.3 A pulled circuit board, electronic module, or power supply that has been removed (or pulled to the point of disconnection) from its designated location disabling the intended function.

1.1.4 An alteration affecting the visual or audible alarm function of an otherwise operable annunciator circuit.

1.1.5 Temporary set point change - a change from the normally prescribed alarm or control set point.

1.1.6 Electric relay block - an electric relay prevented mechanically from changing state.

1.1.7 Mechanical jumper - a temporary connection, such as a spool piece, hose, tubing, or piping, joining two components or systems together or bypassing a component within a system, thus altering the system's design.

1.1.8 (C6) Installed or removed blank flanges - blank flanges changed from the configuration designed for normal system operation.

1.1.9 Disabled relief or safety valves - relief valves blocked to prevent operation at the intended set pressure.

1.1.10 Temporarily installed test instruments affecting the integrity or operation of a system or component.

1.1.11 Removal of test blocks for protective relaying.

1.1.12 Installed or removed filters or strainers - filters or strainers changed from the configuration designed for normal system or component operation.

3.0 PROCEDURE

3.1 Temporary Modification Initiation, Preparation, Review and Approval

3.1.1 Temporary modification originators shall request initiation of Temporary Modification Forms (Attachment 1) from appropriate System Engineers.

3.1.2 (C2) System Engineers shall coordinate temporary modification preparation and review activities, including:

a. Initiating and ensuring completion of Temporary Modification Forms in accordance with Temporary Modification Form Instructions (Attachment 2).

(C4) (C12) b. Ensuring temporary modifications are reviewed and approved in accordance with NIP-DES-01, Determination of Design Control Applicability.

c. Ensuring an Applicability Review and if necessary, a 10CFR50.59 Safety Evaluation, is developed and approved in accordance with NIP-SEV-01.

d. Arranging for required personnel training, procedure and drawing changes, as appropriate.

e. For temporary modifications that affect nuclear safety (safety related or Q), ensuring the temporary modification is reviewed by a Qualified Technical Reviewer per GAP-SRE-03.

3.1.3 The Plant Manager or the Manager Technical Support, as previously designated by the Plant Manager, shall approve temporary modifications prior to implementation.

3.2 Temporary Modification Implementation

3.2.1 Prior to authorizing implementation of a temporary modification, the SSS shall review the associated Applicability Review/10CFR50.59 Safety Evaluation and Work Order to ensure compliance with Technical Specifications.

3.2.2 Personnel assigned to install temporary modifications shall, per GAP-PSH-01:

a. Obtain SSS and CSO permission to implement temporary modifications.

b. Install temporary modifications in accordance with applicable work/design documents.

c. Print/Initial/Date Section 2 of the Temporary Modification Form.

3.2.3 The Installer shall ensure temporary modifications are identifiable by installing Temporary Modification Tag(s) (Attachment 5), with the following exceptions:

a. Temporary modifications located in/above the refuel cavity/storage area are excluded from the identification requirements of this procedure.

b. Temporary modification tags shall not be used to identify defeated annunciators. (Step 3.4.3 addresses identification requirements for defeated annunciators.)

3.2.4 The independent verifier shall ensure temporary modification is installed in accordance with applicable work/design documents and:

a. Associated Temporary Modification Tags are hung.

b. Sign/date the Section 2 of the Temporary Modification Form.

c. Sign/date the Temporary Modification File Index.

3.2.5 The System Engineer shall ensure temporary modification implementation requirements have been satisfied, including:

(C8) a. Ensuring the temporary modification installation is independently verified, properly tagged and recorded in the Temporary Modification File Index (Attachment 3).

b. Verifying temporary modification functional testing, including the applicable requirements of GAP-SAT-02, is successfully completed, if applicable.

(C13) c. Verifying required changes to applicable procedures and Control Room critical drawings have been implemented and copies of applicable procedures placed in the Temporary Modification file maintained by the Manager of Technical Support or designee.

3.2.6 The SSS shall review temporary modification packages to determine the operability status of affected systems or components and record temporary modification implementations in the SSS log and on the Temporary Modification Forms.

3.2.7 The CSO shall record temporary modification implementations in the CSO log and on the Temporary Modification Forms.

3.2.8 The System Engineer shall notify training of the implementation of the temporary modification for evaluation of simulator impact.

3.2.9 The System Engineer shall ensure all documentation and training requirements of the temporary modification are complete.

3.2.10 The Temporary Modification File Index (Attachment 3) shall be maintained in the Control Room.

3.2.11 A file of active temporary modification packages shall be maintained by the Manager Technical Support, or designee.

(C10) 3.2.12 The System Engineer shall ensure any documentation/physical revision to the installed temporary modification is reviewed, and any additional required document changes (ie. procedures) or actions are completed.

3.3 Temporary Modification Clearance

3.3.1 Authorization for temporary modification clearance shall be obtained from the:

a. Responsible System Engineer - to be documented on the Temporary Modification Form

b. SSS and CSO per GAP-PSH-01.

3.3.2 Personnel shall clear temporary modifications in accordance with applicable work/design documents and remove associated temporary modification tags.

3.3.3 The independent verifier shall ensure temporary modifications are cleared in accordance with applicable work/design documents and:

a. Associated Temporary Modification Tags are removed.

b. Sign/date Section 3 of the Temporary Modification Form.

c. Sign/date the Temporary Modification File Index.

3.3.4 The System Engineer shall ensure applicable temporary modification clearance requirements have been satisfied, including:

(C8) a. Ensuring the temporary modification clearance is independently verified, tags are removed, and clearance verification is documented in the Temporary Modification File Index (Attachment 3).

b. Verifying post-maintenance testing is successful, as applicable.

(C9) (C12) c. Notifying Engineering of the cleared temporary modification and whether the temporary modification was made permanent or removed (i.e., equipment returned to previous condition). Engineering shall update design to restored configuration in accordance with NIP-DES-01.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.3
Subject Description:	Radiation Exposure Limits
Question Number:	1

Question:

Your current exposure for the calendar year is 3800 mrem. A job requires that you receive 300 mrem. What actions are required prior to performing the job?

Answer:

SSS or ASSS must initiate a request to RP for dose limit increases above the administrative limit of 4.0 rem.

Technical Reference(s):
GAP-RPP-07, Rev 05, Section 3.2.4
S-RAP-RPP-0703, Rev 2, Section 3.1

K/A #:	Importance:
2.3.4, 2.3.10	2.5, 2.9

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-RPP-07

REVISION 05

INTERNAL AND EXTERNAL DOSIMETRY PROGRAM

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

R. G. Smith
Plant Manager - Unit 1

12/28/98
Date

Approved by:
N. C. Paleologos

Don Boone for N. C. Paleologos NCP
Plant Manager - Unit 2

12/23/98
Date

THIS IS A FULL REVISION

Effective Date: 12/31/1998

3.2.3 (Cont)

b. If the dose to the embryo/fetus is found to have exceeded 0.4 Rem, or is within 0.050 Rem of this dose by the time the woman declares pregnancy, the additional dose to the embryo/fetus shall be limited to 0.050 Rem for the remainder of the pregnancy

c. These established administrative limits for the embryo/fetus apply to individuals who have voluntary declared their pregnancy to the Licensee in writing, with an estimated date of conception

3.2.4 Authorization to Exceed Administration Dose Limits

(C2) a. The Supervisor of an individual in need of an increase in their administrative dose limits shall:

1. Initiate requests through Radiation Protection for dose limit increases for workers under their supervision

2. Justify the dose limit increases to Rad Protection and Plant Manager

b. Rad Protection shall process the requests as per S-RAP-RPP-0703

3.3 Dosimetry Measurement and Monitoring

3.3.1 Monitoring Requirements

a. Occupationally exposed personnel expected to receive exposures GREATER THAN 10% of the administrative limits in Section 3.2 shall be:

1. individually monitored for exposure while working in the Restricted Area

2. monitored for exposure while working in the Controlled Area via area monitoring

3.3.2 External Dosimetry Measurement

a. Two types of dosimetry devices are used at Nine Mile Point:

1. A passive dosimeter, a Thermoluminescent Dosimeter (TLDs) as the primary dosimetry record device

2. An active dosimeter, a Self Reading Dosimeter (SRDs, eg. Electronic Dosimeters or Pocket Ion Chambers) as the dose monitoring device

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

RADIATION PROTECTION ADMINISTRATIVE PROCEDURE

S-RAP-RPP-0703

REVISION 02

AUTHORIZATION TO EXCEED ADMINISTRATIVE DOSE LIMITS

Approved by: V. L. Schuman — Manager Radiation Protection - Unit 1 — Date: 18 Dec 98

Approved by: D. W. Barcomb — Manager Radiation Protection - Unit 2 — Date: 12-17-98

CONTROLLED

THIS IS A FULL REVISION

Effective Date: 12/28/98

3.0 PROCEDURE

NOTES: 1. This step is executed with the assistance of Radiation Protection when exposure limit increases are requested as per GAP-RPP-07.

2. Equivalent or computer generated forms may be used in lieu of Attachments.

3.1 Individuals Supervisor

(C1) Upon determination that an individual's administrative dose limit needs to be increased, the individual's supervisor shall:

a. Initiate an Authorization to Exceed NMPC Radiation Exposure Limits (Attachment 1), Section 1, and assess:

- The work to be performed
- The experience level and ability of the individual
- IF another individual is qualified to perform the work

b. Review the completed Section 1 with the individual and obtain the individual's concurrence and signature.

c. Forward the form to the Unit Rad Protection Supervision for preliminary review and approval.

3.2 Rad Protection Supervision should, upon receipt of the request form:

a. Review the merits of the request.

b. Temporarily de-authorize the individual for RCA access while the request for administrative dose limit increase is processed.

c. Approve, modify, or deny the request.

d. Sign and forward to the Dosimetry Office.

3.3 Rad Protection/Dosimetry Personnel shall complete Section 2 of the request form.

3.3.1 Ensure that the individual is logged-out of the Access Control System

3.3.2 Record the most recent exposure information on the request form.

a. Enter the requested dose limit (from Section 1).

b. Determine the individuals dose totals for the CURRENT YEAR.

- Official record (eg TLD) results plus estimated results for the current year.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	RO
Administrative Topic	A.3
Subject Description:	Radiation Exposure Limits
Question Number:	2

Question:

The TIP Room is posted with a sign containing the words "GRAVE DANGER". Radiation levels are posted at 800 Rad/hr. What actions are required to enter the TIP Room?

Answer:

Approved by RP Supervision and SSS.

Specific RWP is required.

Minimum authorized delta exposure of 300 mrem.

Appropriate monitoring established **(candidate is only required to provide <u>one</u> means of monitoring)**

- Instrument continuously indicating dose
- Device tracking cumulative dose and alarming at a predetermined value
- RP Tech with a dose rate instrument, responsible for positive exposure control.

RP Tech should accompany the worker to the entryway to determine radiological conditions at the time of entry and render assistance if necessary.

Technical Reference(s):
GAP-RPP-008, Rev 05 Section 3.2, 3.3, 3.4

K/A #:	Importance:
2.3.1, 2.3.4 2.3.10	2.6, 2.5, 2.9

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-RPP-08

REVISION 05

CONTROL OF HIGH, LOCKED HIGH, AND VERY HIGH RADIATION AREAS

TECHNICAL SPECIFICATION REQUIRED

Approved By:
R. G. Smith
Plant Manager - Unit 1
12/1/98
Date

Approved By:
N. C. Paleologos
Plant Manager - Unit 2
12/4/98
Date

CONTROLLED

Effective Date: 12/11/98

3.1.7 Areas with the potential for being Very High Radiation Areas include: TIP Rooms, Upper elevations of the drywell during fuel moves, Spent Fuel Pool during diving operations.

3.1.8 Very High Radiation Area Fencing should extend to the overhead to preclude anyone from climbing over the fencing.

3.2 Access Requirements for High Radiation Areas

3.2.1 A Radiation Work Permit (RWP) is required for entry into High Radiation Areas (HRA).

3.2.2 Personnel accessing High Radiation Areas should have a minimum authorized delta exposure of 300 mRem. Exceptions shall be approved by RP Supervision.

3.2.3 Key control for High Radiation Area barriers shall be maintained by Radiation Protection. Issuance and return of keys shall be documented in accordance with Branch Administrative procedures.

3.2.4 Each entry (individual or group) into a High Radiation Area shall be monitored for exposure control. Monitoring methods shall include one or more of the following:

a. Instrument continuously indicating dose rates (individual shall be qualified for instrument use)

b. Device tracking accumulative dose received and alarming at a predetermined value (only allowed after Radiation Protection establishes and communicates area dose rates to personnel entering the area).

c. A RP Technician, with a dose rate instrument, who is responsible for positive exposure control of the activities and periodic radiation surveillance at specified frequencies.

3.3 Access Requirements for Locked High Radiation Areas

In addition to the controls of Section 3.2:

3.3.1 Ensure the RWP specifies the maximum allowable stay time for individuals in that area and the dose rate levels in the immediate work area. Continuous direct or remote surveillance of activities within the area may be made by qualified Radiation Protection technicians in lieu of the stay time specification of the RWP.

3.3.2 Key control for Locked High Radiation Area barriers, except Unit 2 Main Steam Tunnel door R-240-6 shall be maintained by RP. Issuance and return of keys shall be documented in accordance with RP Branch Administrative procedures.

3.3.3 The key for access to the Unit 2 Main Steam Tunnel (Vital Area Door R-240-6) shall be controlled by the SSS and issued in accordance with NIP-SEC-02, Security Requirements. This key shall remain with the individual to whom it was issued until returned to the SSS. Personnel accessing this area shall consult Radiation Protection before entry.

3.4 Access Requirements for Very High Radiation Areas

In addition to the controls of Sections 3.2, 3.3:

3.4.1 To the extent possible, entry should be forbidden unless there is a sound operational or safety reason for entering.

3.4.2 Entry into Very High Radiation Areas shall be approved by RP supervision AND the SSS.

3.4.3 A specific RWP is required for entry into Very High Radiation Area.

3.4.4 An RP Technician should accompany the person entering the Very High Radiation Area to the entryway to determine radiation conditions at the time of entry and render assistance if necessary.

3.5 Emergency Access

(C3) 3.5.1 The SSS may use or authorize use of the HRA master keys stored in the "break-to-enter" key box located in the Control Room. The box contains keys to access high, locked high and very high radiation areas. The SSS shall utilize an RP technician to ensure compliance with Technical Specifications.

3.5.2 When notified by the SSS that HRA master keys from the "break-to-enter" box have been used, the RP branch shall initiate a Deviation Event Report.

3.6 Key Holder Responsibilities

3.6.1 Personnel issued a key for access to a High, Locked High or Very High Radiation Area shall maintain positive access control to the area. Control should include:

a. Ensuring individuals accessing area meet the applicable minimum exposure requirements for that area.

(C2) b. Notifying RP of unsatisfactory access controls. Unsatisfactory controls may include:

1. Structures (e.g., ladders, scaffold) near the area which may allow alternate unauthorized access to area.

2. Inoperable locked barriers (cannot be maintained locked).

NIAGARA MOHAWK POWER CORPORATION
OPERATOR JOB PERFORMANCE MEASURE

Title: EPIP-EPP-28, Fire Fighting, CSO Actions For A Fire In The Protected Area Revision: 0

Task Number:

Approvals:

10/26/99
General Supervisor Operations Training (Designee) Date

10-19-99
General Supervisor Operations (Designee) Date

NA Exam Security
Configuration Control Date

Performer:_____(SRO)

Trainer/Evaluator:_____

Evaluation Method: _____Perform ___X___Simulate

Evaluation Location: _____Plant _____Simulator

Expected Completion Time: 20 minutes Time Critical Task: NO Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: (Completion time based on the start location)

Plant Control Room or other designated area.

Simulator Set-up:

N/A

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SSS / CSO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SSS / CSO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SSS, CSO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. EPIP-EPP-28, Rev 05
2. N2-OP-76, Section H.1.0
3. NUREG
   K/A 2.4.27 (3.0)
   K/A 2.4.29 (2.6)

Tools and Equipment:

1. None

Task Standard:

Performs the CSO actions of EPIP-EPP-28 including the CSO checklist for a fire in the protected area.

Initial Conditions:

1. The plant is operating at 100% power when annunciator 852503, UPS1A SYSTEM TROUBLE, is received.
2. The operator dispatched to UPS1A reports that there is heavy smoke and flames at UPS1A and that he is leaving the room.
3. UPS1A continues to supply its loads.
4. The Control Room E operator has been directed to carry out the 2CEC-PNL849 Alarm Response Procedure (ARP) actions.
5. Ask the operator for any questions.

Initiating cue:

"(Operator's name), perform the CSO actions for implementing the fire fighting response."

Performance Steps	*Standard*	*Grade*	*Comments*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary*	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat	
RECORD START TIME _____			
2. Obtain a copy of the reference procedure and review/utilize the correct section.	EPIP-EPP-28 obtained. Section 2.2 and CSO Checklist referenced.	Sat/Unsat	
3. •Initiate the CSO checklist (Attachment 1) **Cue: As SSS, direct the CSO to perform the CSO Checklist for fire fighting.**	Record name and date. Indicate Unit 2.	Sat/Unsat	
4a. •Place the GAItronics system in the merge mode.	Actuates the MERGE switch. Note: Simulated unless in the simulator.	Sat/Unsat	

Performance Steps	*Standard*	*Grade*	*Comments*
4b. •Sound the Station Fire Alarm for 10 seconds.	Presses and holds fire alarm for 10 seconds. Note: Simulated unless in the simulator.	**Pass/Fail**	
4c. •Announce the Fire. **Cue: 15 seconds after the fire alarm is sounded or the announcement is made, acknowledge as Fire Brigade Leader.** **Cue: 1 minute after the fire alarm is sounded or the announcement is made, as Fire Brigade Leader confirm fire <u>and</u> request local fire departments be called to the site.**	Announces the following: "Attention. Attention, this is not a drill. A fire had been detected at Unit 2. The Nine Mile Point Fire Brigade shall report to 2VBB-UPS1A, Normal Switchgear Building elevation 237 feet". Note: Simulated unless in the simulator.	**Pass/Fail**	
1. Call the Unit 1 CSO and confirm the announcement was heard.	Unit 1 CSO called and announcement confirmed.	Sat/Unsat	
4d. •Repeat alarm.	Presses and holds fire alarm for 10 seconds. Note: Simulated unless in the simulator.	Sat/Unsat	

Performance Steps	*Standard*	*Grade*	*Comments*
4e. •Repeat announcement.	Announces fire. See 5c above for announcement. Note: Simulated unless in the simulator.	Sat/Unsat	
4f. •Remove the GAItronics from the merge mode.	Places merge switch to normal. Note: Simulated unless in the simulator.	Sat/Unsat	
4g. •Notify the SSS the fire is confirmed. **Cue: Acknowledge as SSS.**	SSS notified.	**Pass/Fail**	
5. •Turn up the volume on the radio base consoles.	Adjusts volume in the louder direction. Note: Simulated unless in the simulator.	Sat/Unsat	
6. •Contact Oswego 911. **Cue: role-play as 911 operator in response to NMP2 requests.**	Oswego 911 contacted and fire assistance requested to NMP2.	**Pass/Fail**	

Performance Steps	*Standard*	*Grade*	*Comments*
7. •Contact Site Security Supervisor and inform him that offsite fire assistance has been requested. **Cue: role-play as Contact Site Security Supervisor and acknowledge that offsite fire assistance has been requested to the station.**	Site Security Supervisor contacted and notified of offsite fire assistance.	**Pass/Fail**	
8. •If required, initiate any SOPs or EOPs.	Identify that N2-SOP-71, "Emergency Restoration of 2VBB-UPS1A, 1B, 1G" may be required if UPS 1A is lost.	Sat/Unsat	
9. •Check Process Radiation Monitors to determine if there is any rise in effluent activity. **Cue: The STA will monitor DRMS.**	Recognizes requirement to check Process Radiation Monitors on DRMS.	Sat/Unsat	
10. •If SSS implements a station evacuation, then perform the duties in EPIP-EPP-05. **Cue: Inform the CSO as SSS that a station evacuation is not required.**	Asks the SSS if a station evacuation is required. Determines entry into EPIP-EPP-05 is NOT required at this time.	Sat/Unsat	

Performance Steps	*Standard*	*Grade*	*Comments*
11. •Notify the Unit 1 SSS the fire is confirmed. **Cue: Acknowledge as Unit 1 SSS.** **Cue: Following the CSO response to the fire, inform the candidate as Fire Brigade Leader that the fire is out and the event may be terminated.**	SSS notified. Acknowledges that the fire is out and the event may be terminated.	Sat/Unsat	
12. When the fire is out and the fire event may be terminated:			
12a. •Place the GAItronics system in the merge mode.	Actuates the MERGE switch. Note: Simulated unless in the simulator.	Sat/Unsat	
12b. •Sound the Station Alarm for 10 seconds.	Presses and holds fire alarm for 10 seconds. Note: Simulated unless in the simulator.	Sat/Unsat	
12c. •Announce termination of the fire event.	Announces the following: "Attention. Attention, this is not a drill. The fire event is terminated."	Sat/Unsat	

Performance Steps	*Standard*	*Grade*	*Comments*
12d. •Remove the GAItronics from the merge mode.	Places merge switch to UNIT 1&2 ISOLATE.	Sat/Unsat	

End of JPM

Terminating Cue: Performs the CSO actions of EPIP-EPP-28 and the CSO checklist for a fire in the protected area.

RECORD STOP TIME_____

ATTACHMENT 1: CSO FIRE FIGHTING CHECKLIST

Name:	Date:	Unit: 1 ☐ 2 ☐

		Complete	N/A
1.	Upon notification of a fire, or upon receipt of an alarm AND actuation of an automatic Fire Suppression System:		
	a. Place the GAItronics system in the Merge Mode	☐	☐
	b. Sound the Station Fire Alarm for 10 seconds, and make the following announcement:	☐	☐
	(IF the OSC has NOT been activated) ***"Attention, Attention, this (is/is not) a drill. A fire has been detected at Unit (1/2). The Nine Mile Point Fire Brigade shall report to: _____"*** *(state building location, elevation and type of fire, if known).*		
	(If the OSC has been activated) ***"Attention, Attention, this (is/is not) a drill. A fire has been detected at Unit (1/2) (state building location elevation and type of fire, if known). The Nine Mile Point Fire Brigade shall report to the OSC."***		
	Repeat alarm and announcement	☐	☐
	c. Take the GAItronics system out of the Merge Mode, unless OSC has been activated	☐	☐
	d. If the Fire Brigade Leader does NOT respond within 60 seconds, repeat steps 1a - 1c	☐	☐
	e. Notify the SSS if the fire is confirmed	☐	☐
2.	Turn up volume on station radio base console, including Oswego County fire frequency	☐	☐
3.	If requested by Fire Brigade Leader, then call Oswego County 911 Center (911) and request offsite fire assistance	☐	☐
4.	If offsite assistance is requested, then inform the Security Site Supervisor (X2404) that offsite fire assistance has been requested	☐	☐
5.	If required, initiate any Special Operating Procedures OR Emergency Operating Procedures	☐	☐
6.	Check Process Radiation Monitors to determine if there is any rise in effluent activity.		
	a. If a rise is noted, contact Radiation Protection and inform them of the rise	☐	☐
	b. If no rise is noted, continue to monitor	☐	☐
7.	If SSS implements a station evacuation, then perform duties in EPIP-EPP-05	☐	☐

		Complete	N/A
8.	If fire is confirmed, then ensure the unaffected Unit SSS is notified	☐	☐
9.	When notification received that the fire is out and may be terminated, then perform the following:		
	a. Place GAltronics system in the Merge Mode	☐	☐
	b. Sound the Station Alarm for 10 seconds, and make the following announcement:	☐	☐
	"Attention, Attention, this (is/is not) a drill. The fire event is terminated." Repeat alarm and announcement	☐	☐
	c. Take the GAltronics system out of the Merge Mode	☐	☐
10.	Forward all completed checklists generated for a confirmed fire to the EP Department	☐	☐

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

EMERGENCY PLAN IMPLEMENTING PROCEDURE

EPIP-EPP-28

REVISION 05

FIRE FIGHTING

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

R. G. Smith
Plant Manager - Unit 1

4/20/99
Date

Approved by:
N. C. Paleologos

Nick Paleologos
Plant Manager - Unit 2

4-19-99
Date

PERIODIC REVIEW, 05/19/1999, NO CHANGE

Effective Date: 04/30/1999

PERIODIC REVIEW DUE DATE MAY 2000

LIST OF EFFECTIVE PAGES

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TABLE OF CONTENTS

1.0 PURPOSE

To provide prompt, efficient handling of any fire, regardless of size or presence of radioactivity, by the on-site Nine Mile Point Fire Brigade.

2.0 RESPONSIBILITIES

2.1 **Station Shift Supervisor (SSS)** has overall responsibility for the initial implementation of the Site Emergency Plan and Implementing Procedures.

2.2 **Chief Shift Operator (CSO)** notifies fire response personnel, coordinates the response of site personnel and makes notifications to site personnel.

2.3 **Supervisor Fire Protection:**

2.3.1 Ensures the Fire Brigade Leader maintains fire response control of fire fighting activities on-site.

2.3.2 Coordinates the testing and performing of inventories as required by EPMP-EPP-02, Emergency Equipment Inventories and Checklist.

2.4 **Security Site Supervisor** implements security related aspects of this procedure.

2.5 **Radiation Protection Technician** implements the radiation protection aspects of this procedure.

3.0 PROCEDURE

3.1 Fire Alarms Response

3.1.1 Upon annunciation or notification of a fire alarm, the CSO shall determine the location of the alarm source:

a. If the alarm IS associated with an automatic suppression system actuation within the protected area, initiate response in accordance with Section 3.2

b. If the alarm is NOT associated with the actuation of an automatic suppression system within the protected area, OR is outside the Protected Area, validate alarm in accordance with Step 3.1.2

3.1.2 Alarms NOT associated with the actuation of an automatic suppression system within the protected area OR any system outside the protected area shall be handled as follows:

a. CSO shall notify the Fire Brigade Leader of the alarm or fire condition.

b. Fire Brigade Leader shall dispatch at least one fire brigade member to the alarm location to verify a fire condition.

c. If a fire condition which requires fire brigade response exists within the protected area, the responder(s) shall notify the CSO to activate the fire brigade per Section 3.2

d. If no condition exists which requires fire brigade response, responders shall notify the CSO of the condition resulting in fire detection operation and exit this procedure.

e. If a fire condition exists outside the protected areas continue with Step 3.3.

3.2 Fires within the Protected Area

NOTE: If the OSC is activated, then all fire brigade response should be coordinated through the OSC. This may be done in person, or via telephone, gaitronics or radio.

3.2.1 SSS Actions

a. When credible evidence exists of a fire condition within the Protected Area, then direct the CSO to implement Attachment 1, "CSO Fire Fighting Checklist".

b. Determine the need to classify the event in accordance with EPIP-EPP-01/02.

c. If the event is classified as an emergency in accordance with Step 3.2.1.b, then activate the emergency plan in accordance with EPIP-EPP-18.

d. Direct a Licensed Nuclear Operator (if available) to the command post to act as a liaison with the Control Room.

e. If deemed appropriate, report to the fire scene to assess the effect of the fire on continued plant operation.

f. WHEN

1. Indication of fire has been received but it has been determined that no fire exists, OR

2. When the Fire Brigade Leader indicates that the fire has been extinguished, then direct the CSO to make an announcement terminating the fire event in accordance with Attachment 1 Step 9 of this procedure.

3.2.2 Site Security Supervisor Actions

a. When notified of a fire, implement Attachment 2, "Security Supervision Fire Fighting Checklist".

3.2.3 Radiation Protection Technician Actions

a. When notified of a fire, implement Attachment 3, "Radiation Protection Fire Fighting Checklist".

3.2.4 Fire Brigade Leader Actions

a. When the Station fire alarm is sounded, then

1. Acknowledge receipt of the alarm to the CSO

2. Report to the fire scene and establish a command post from which fire fighting activities can be safely directed.

3. Provide direction to fire brigade members as appropriate.

4. Inform the CSO of actual conditions at the scene and, if appropriate, confirm the fire condition.

b. If offsite fire department assistance is needed, then

1. Request such from the CSO.

2. Provide direction to responding offsite fire department using the incident command concept.

3. Maintain overall command of the fire scene and coordinate offsite assistance with the appropriate officer in charge using the incident command concept.

c. Request the SSS (via the CSO) conduct station evacuation, if required.

d. If station evacuation is initiated, contact the Personnel Accountability Coordinator (x2662 or use security personnel at the command post) and report the names of all personnel engaged in fire fighting activities.

e. When the fire has been extinguished

NOTE: Fire event may be terminated when the fire has been reported as extinguished.

1. Inform the CSO that the fire is out and state that the fire event may be terminated.

2. Establish a fire watch, if necessary.

3. Return fire fighting equipment used to service and conduct post-use inventory in accordance with EPMP-EPP-02.

3.2.5 Fire Brigade Member Actions

a. Report to the appropriate fire equipment storage cabinets, unless otherwise directed.

b. Obtain protective clothing, SCBA, and fire fighting tools.

c. Report to the fire scene, or other location as directed by the Fire Brigade Leader.

d. Follow all directions provided of the Fire Brigade Leader.

3.3 Actions for Fires Outside the Protected Area

3.3.1 If a fire exists, the responding fire brigade member(s) shall extinguish the fire, if possible. If the fire cannot be readily extinguished, the Fire Brigade Leader or on-scene fire fighter should:

a. Request the CSO call for offsite Fire Department assistance, as necessary

b. Request Security to direct off-site Fire Department personnel, vehicles, and other equipment to the fire scene command post upon arrival

c. Request RP assistance if response involves an area where radioactive materials may be stored (such as Warehouse Environmental Area, Source Storage Areas, etc).

d. Upon arrival of offsite Fire Departments, provide appropriate directions using the incident command concept, and direct Fire Brigade member(s) to return to site.

e. If appropriate, incident command may be:

- Kept by the Fire Brigade Leader, or
- Turned over to Offsite Fire Chief

3.3.2 After the fire is extinguished, the Fire Brigade Leader or on-scene fire fighters shall:

a. Inform the CSO that the fire is out and state that the fire event may be terminated.

b. Establish a fire watch as needed.

c. Return fire fighting equipment used to service as applicable.

3.3.3 The SSS should direct the CSO to make an announcement terminating the fire event in accordance with Attachment 1, Step 9 of this procedure when:

a. Indication of fire has been received, but it has been determined that no fire exists, OR

b. The fire brigade leader indicates that the fire has been extinguished.

4.0 DEFINITIONS

4.1 **Confirmed Fire.** A condition in which credible evidence exists that a fire is actually occurring. A fire may be considered as confirmed given ANY of the following: fire alarm/annunciator AND suppression system activation accompanied by actual flow or discharge, OR Fire Brigade/Leader report, OR SSS judgement.

4.2 **Incident Command System.** The system commonly used by emergency response organizations (i.e., police, fire companies, nuclear plant emergency response personnel, etc.) to efficiently and effectively mitigate emergency consequences. Facilitates cooperation of the emergency response effort by establishing a universally accepted system for communication, command hierarchy, response organization.

5.0 REFERENCES AND COMMITMENTS

5.1 Technical Specifications

Unit 2 Technical Specifications, Section 6.2.2

5.2 Licensee Documentation

5.2.1 Nine Mile Point Site Emergency Plan

5.2.2 Unit 1 FSAR, Chapters X, XIII

5.2.3 Unit 2 USAR, Chapters 9, 13

5.3 Standards, Regulations, and Codes

5.3.1 10CFR50, Appendix R, Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979

5.3.2 NUREG-0654-FEMA-REP-1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, October 1980

5.4 Policies, Programs, and Procedures

5.4.1 EPIP-EPP-01, Classification of Emergency Conditions, Unit 1

5.4.2 EPIP-EPP-02, Classification of Emergency Conditions, Unit 2

5.4.3 EPIP-EPP-18, Activation and Direction of Emergency Plan

5.4.4 EPIP-EPP-05, Station Evacuation

5.4.5 EPIP-EPP-20, Emergency Notifications

5.5 Commitments

None

6.0 RECORDS REVIEW AND DISPOSITION

6.1 The following records generated by this procedure shall be maintained by Records Management for the Permanent Plant File in accordance with NIP-RMG-01, Records Management:

NOTE: This only applies if records are generated as the result of an actual declared emergency at the Nine Mile Point Nuclear Station.

- Attachment 1, CSO Fire Fighting Checklist
- Attachment 2, Security Site Supervisor Fire Fighting Checklist
- Attachment 3, Radiation Protection Fire Fighting Checklist

6.2 The following records generated by this procedure are not required for retention in the Permanent Plant File:

NOTE: This only applies when records are not the result of an actual declared emergency.

- Attachment 1, CSO Fire Fighting Checklist
- Attachment 2, Site Security Supervision Fire Fighting Checklist
- Attachment 3, Radiation Protection Fire Fighting Checklist

LAST PAGE

ATTACHMENT 1: CSO FIRE FIGHTING CHECKLIST

Name:	Date:	Unit: 1 ☐ 2 ☐

		Complete	N/A
1.	Upon notification of a fire, or upon receipt of an alarm AND actuation of an automatic Fire Suppression System:		
	a. Place the GAltronics system in the Merge Mode	☐	☐
	b. Sound the Station Fire Alarm for 10 seconds, and make the following announcement:	☐	☐
	(IF the OSC has NOT been activated) ***"Attention, Attention, this (is/is not) a drill. A fire has been detected at Unit (1/2). The Nine Mile Point Fire Brigade shall report to: _____"*** *(state building location, elevation and type of fire, if known).*		
	(If the OSC has been activated) ***"Attention, Attention, this (is/is not) a drill. A fire has been detected at Unit (1/2) (state building location elevation and type of fire, if known). The Nine Mile Point Fire Brigade shall report to the OSC."***		
	Repeat alarm and announcement	☐	☐
	c. Take the GAltronics system out of the Merge Mode, unless OSC has been activated	☐	☐
	d. If the Fire Brigade Leader does NOT respond within 60 seconds, repeat steps 1a - 1c	☐	☐
	e. Notify the SSS if the fire is confirmed	☐	☐
2.	Turn up volume on station radio base console, including Oswego County fire frequency	☐	☐
3.	If requested by Fire Brigade Leader, then call Oswego County 911 Center (911) and request offsite fire assistance	☐	☐
4.	If offsite assistance is requested, then inform the Security Site Supervisor (X2404) that offsite fire assistance has been requested	☐	☐
5.	If required, initiate any Special Operating Procedures OR Emergency Operating Procedures	☐	☐
6.	Check Process Radiation Monitors to determine if there is any rise in effluent activity.		
	a. If a rise is noted, contact Radiation Protection and inform them of the rise	☐	☐
	b. If no rise is noted, continue to monitor	☐	☐
7.	If SSS implements a station evacuation, then perform duties in EPIP-EPP-05	☐	☐

		Complete	N/A
8.	If fire is confirmed, then ensure the unaffected Unit SSS is notified	☐	☐
9.	When notification received that the fire is out and may be terminated, then perform the following:		
	a. Place GAltronics system in the Merge Mode	☐	☐
	b. Sound the Station Alarm for 10 seconds, and make the following announcement:	☐	☐
	"Attention, Attention, this (is/is not) a drill. The fire event is terminated." Repeat alarm and announcement	☐	☐
	c. Take the GAltronics system out of the Merge Mode	☐	☐
10.	Forward all completed checklists generated for a confirmed fire to the EP Department	☐	☐

ATTACHMENT 2: SITE SECURITY SUPERVISION FIRE FIGHTING CHECKLIST

Name:	Date:	Unit: 1 ☐ 2 ☐

		Complete	N/A
1.	When the Station Fire Alarm is sounded, then dispatch a Security Force member to fire scene command post (or OSC as instructed) to provide crowd control and act as a communications liaison with Security or the STOC (if activated)	☐	☐
2.	Turn up the volume on the Oswego County fire radio base station	☐	☐
3.	Notify the following:		
	a. Supervisor Fire Protection	☐	☐
	b. Director Emergency Preparedness	☐	☐
	c. Manager Nuclear Communications and Public Affairs	☐	☐
4.	When notified by the control room that offsite fire assistance has been requested, then dispatch a Security Force member to the Unit 2 entrance traffic light (with fire/ambulance emergency equipment) to direct responding emergency vehicles to the emergency vehicle staging area or the fire scene command post	☐	☐
5.	When offsite Fire Departments arrive, then ensure dosimetry and portable radios are issued to all offsite Fire Department personnel	☐	☐
6.	Inform the Fire Brigade Leader and the CSO upon arrival of the number of fire trucks and the on-site arrival time	☐	☐
7.	If a station evacuation is called for, then implement actions as required by EPIP-EPP-05	☐	☐
8.	When fire event is terminated AND the SSS has authorized departure of offsite fire department personnel, then complete the following:		
	a. Complete entrance registration log	☐	☐
	b. Forward all completed checklists generated for a confirmed fire to the EP Department	☐	☐

ATTACHMENT 3: RADIATION PROTECTION FIRE FIGHTING CHECKLIST

Name:	Date:	Unit: 1 ☐ 2 ☐

		Complete	N/A
1.	When the Station Fire alarm is sounded, then report to the Fire Brigade Leader at the fire scene command post or OSC (as instructed)	☐	☐
2.	Perform air samples and radiological assessment of the fire scene as needed	☐	☐
3.	Contact the Radiation Protection Supervisor to provide additional personnel for radiological support as needed	☐	☐
4.	Provide assistance as requested by the Fire Brigade Leader	☐	☐
5.	If a station evacuation is implemented:		
	a. Report names of all Radiation Protection Technicians at the fire scene to the Personnel Accountability Coordinator	☐	☐
	b. Implement actions required by EPIP-EPP-05	☐	☐
6.	When the fire event is terminated, then perform the following:		
	a. Ensure personnel and equipment used at the fire scene is surveyed as required	☐	☐
	b. Ensure equipment determined to be contaminated is either retained on-site OR decontaminated prior to its release	☐	☐
	c. Retrieve dosimetry issued to offsite Fire Department personnel, and ensure all appropriate paperwork is completed	☐	☐
	d. Check local Continuous Air Monitors (CAMs or PINGs) for "fouling"	☐	☐
	e. Inform the Fire Brigade Leader and SSS when all duties are completed	☐	☐
	f. Forward all checklists generated as a result of a confirmed fire to the EP Department	☐	☐

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT 2

OPERATING PROCEDURE

N2-OP-76

REVISION 02

PLANT COMMUNICATIONS

TECHNICAL SPECIFICATION REQUIRED

Approved by:
J. T. Conway

Manager Operations - Unit 2

11/21/94
Date

THIS IS A FULL REVISION

PERIODIC REVIEW, 10/12/98, NO CHANGE

PERIODIC REVIEW, 11/01/96 - NO CHANGE

Effective Date: 11/30/94

PERIODIC REVIEW DUE DATE OCTOBER 2000

TABLE OF CONTENTS

A. REFERENCES AND COMMITMENTS

1.0 Technical Specifications

Section 3.9.5, Communications

2.0 Licensee Documentation

USAR Section 9.5.2, Appendix 13B

3.0 Policies, Programs, and Procedures

N2-IPM-GAI-SA001, Semi-Annual Speaker Communication Verification Test

4.0 Technical Information

- EE 016 Series
- EE 74C, Lighting and Communications Plan, Main Stack and Chiller Building
- EE 080 Series, Communications Plan Drawings
- Instructions Manual, Gaitronics E071A

5.0 Commitments

Sequence Number	Commitment Number	Description

None

B. SYSTEM DESCRIPTION

The plant communications system provides reliable means of voice communication between points inside the plant, and between the plant and points outside of it as required for conducting plant operations under all conditions; normal, special, and emergency.

Most plant communication equipment is powered from the uninterruptable power supplies to ensure the continuity of service of the subsystems.

The communications subsystems were designed so that the regular inspection by station procedures can be made quickly and easily. Among the latter are the tests of the station, fire, and evacuation alarm signals performed once a week from the Main or Backup Page Party/Public Address System Control Console.

B. SYSTEM DESCRIPTION (Cont)

1.0 Interplant Communications Subsystems

1.1 The Page Party/Public Address Communications Subsystem (COP)

The Page Party/Public Address Communications Subsystem (COP) enables plant personnel to broadcast voice messages plant-wide over the loudspeakers of the system. It enables the supervisory personnel in the control room to broadcast station alarms signaling various abnormal conditions and control the mode of operation of the system. It also allows plant personnel to communicate by means of handsets between various locations in the plant, and support buildings without broadcasting over the loudspeakers.

Provision is made for this system to operate either merged with or isolated from the Page Party/Public Address system of Unit 1, or like systems in facilities that may be added to Unit 2 in the future.

A handset has six channels: one for paging, five for party line conversation, a five-point selector switch for channel selection (party), and a pushbutton for paging. Loudspeakers are intended to be clearly audible over ambient noise. In areas where there is a high level of ambient noise, the handsets of the Page Party/Public Address System and the local telephone systems are provided with acoustical phone booths. Red strobe lights are also located in various high noise level areas of the plant to alert personnel in the event of any of the station alarms being sounded.

The Main Page Party/Public Address System Control Console is the central control station of the subsystem. It is situated in the control room. From this station, supervisory personnel can make a voice announcement to all plant personnel, monitor the status of the subsystem, and initiate the station alarm signals.

There is a Backup Page Party/Public Address System Control Console in the Remote Shutdown Room (CB261), that can perform all of the functions of the Main Page Party/Public Address System Control Console, except resetting a DC Supply failure. Both of these Control Consoles have selector switches for merging with:

- Nine Mile Unit 1
- Paging Speakers outside the plant
- The Admin Building

B. SYSTEM DESCRIPTION (Cont)

1.1 (Cont)

The operation of both the Desk-Top Control Console Figure 1 and the Wall Mounted Control Station Figure 2 is the same. Each control station has the capability of initiating up to five different alarm tones. The alarm tones are designed for a priority sequence with the Evacuation Alarm designated as priority one (Highest Priority), fire alarm as priority two, Station Alarm as priority three, SP-1 alarm (Spare Alarm 1) as priority four, and SP-2 alarm (Spare Alarm 2) as priority five (Lowest Priority). Only one alarm tone may be produced over the Page Line at any time.

This means an alarm tone will override any alarm tone with a lower priority. The activation of any alarm tone will automatically merge all systems' page lines. The ALARM INSTRUCT switch may be pushed if voice page instructions are required during an alarm condition. This switch will mute the alarm as long as the switch is activated and simultaneously places the control station operator on the merged page lines. The Page/Party Selector Switch does not need to be pushed when utilizing the alarm instruction switch. Releasing this switch will reactivate the alarm tone. To extinguish the alarm tone and reset the Tone Generator, push the ALARM OFF switch.

The Red System/Blue System Page Switch gives each control station the capability of selectively paging either the Red or Blue System (up for Blue, down for Red). This switch is locking and the Page/Party selector switch must be pushed to page. With the Red/Blue System Page Switch in the normal (center) position, pages from the Control Station will be heard over both systems' page lines. The five party lines are tied into the plant system and are not switched to selective systems at any time.

The Control Stations are equipped with an outdoor speaker on/off switch, a Unit 1 and 2 Isolate/Merge switch for merging Units 1 and 2, and a NMP2/ADMIN Isolation/Merge switch for merging NMP2 with the Administration Building speakers.

Both the outdoor speakers and the administration speakers will monitor ~~both the Red and Blue System Page~~ Lines if their associated switches are actuated and the Red/Blue System Page Switch is in the normal (center) position. If the Red/Blue System Page Switch is in any position other than NORM, both areas' speakers will monitor only the Red System Page Line.

The Unit 1 and 2 merge switch will automatically merge Units 1 and 2, turn on the NMP2/Administration Speakers and the outdoor speakers by means of the existing Central Control relay Assembly.

B. SYSTEM DESCRIPTION (Cont)

1.1 (Cont)

When a Unit 1/2 merge condition no longer exists, these switches must be reset manually by pushing the Unit 1/2 switch to the Isolate position, the NMP2/ADM switch to the MERGE position and the O.D. SPKRS switch to the ON position.

The system failure acknowledge switch, all ALARM switches, the D.C. Supply Reset Switch, and the Alarm Instruct Switch will function if pushed in either direction (Up or Down).

The overall PP/PA system is divided into two areas, the Red System and the Blue System. Two Annunciator Panels monitor the Red and Blue System Page Lines by means of a decoder assembly. The main purpose of this monitoring system is to check the integrity of the page line for fire protection purposes. It is of extreme importance that the alarm signal is heard in the event of a fire or evacuation.

The Decoder Assemblies monitor a constant 20 KHz signal which is generated onto the Red and Blue System Page Lines control cabinet. With the 20 KHz signal present, the Decoder Assemblies will supply the Annunciator Panels with a contact closure (indicating normal operation). Loss of AC Power or a Fault on the Page Line (short or open) will be detected by the Decoder Assemblies and the Annunciator Panel will lose its contact closure for the faulty station's area. A ground on both sides of the Page Line may or may not cause the alarm to operate, however, a ground will not impair the Alarm Signal, therefore the primary concern is an open or shorted condition. When a fault occurs and the contact closure normally supplied to the Annunciator Panel(s) opens, a flashing light will be activated on the front of the Annunciator Panel indicating the location of the faulty station(s). At this time the Red and/or Blue System failure lamps will illuminate at both the Main and Back-up Page Party/Public Address Control Consoles. After the system failure has been acknowledged at the Main or Back-up Page Party/Public Address Control Console, and at 2COP-ANN1A and 2COP-ANN1B, the Red and/or Blue System failure lamps on both control stations will remain illuminated and the flashing light(s) on the ~~Annunciator Panel(s) will change to a constant brilliance.~~ These lamps will remain illuminated until the fault is located and the system is returned to normal operation thereby giving the affected Annunciator Panel(s) its required contact closure.

Switches and relays enable an operator to separate the RED and BLUE systems at three key points in the system. When a separation is executed, the auxiliary alarm oscillator and 20 kHz oscillator are automatically connected to the separated portion.

B. SYSTEM DESCRIPTION (Cont)

1.1 (Cont)

Each PP/PA Control Station is equipped with lamps indicating whether the system is operating from the normal D.C. Supply or the alternate D.C. Supply. The Desk-Top Console contains a D.C. Supply reset switch (this switch is not supplied on the Wall Mounted Control Station). The D.C. Supply switch should be pushed to reset the D.C. Power Supplies, (one main supply and three back-up supplies), after initial power has been applied. This will insure that the system is operating from the Main D.C. Supply.

Under normal operation, the D.C. Supply Normal (Green) lamp will be illuminated (indicating the Main D.C. Supply is operational). If the Main D.C. Supply should develop a fault, the system will automatically switch to the alternate supply in the Main Relay and Control Cabinet, 2COP-RSB81. This switching action will extinguish the Normal lamp and illuminate the Alternate (red) lamp at the Control Stations. If the alternate supply in the Main Relay Cabinet develops a fault, the system will switch automatically to the Main D.C. Supply in the Back-Up Relay and Control Cabinet, 2COP-RSB80. This switching action will illuminate both D.C. Supply lamps at the Control Stations. Should the Back-Up Relay and Control Cabinet Main D.C. Supply develop a fault. The system will automatically switch to the alternate D.C. Supply in the Back-Up Relay and Control Cabinet. This switching action will again illuminate only the red lamp.

1.2 The Maintenance and Calibration Communications Subsystem (COJ)

The Maintenance and Calibration Communications Subsystem enables one or more persons at work in one area of the plant, to be in voice contact with one or more persons at work on a related task in another area of the plant. It provides eleven separate and independent communications channels between selected points throughout the plant. Each point, as determined by permanently installed communications jacks throughout the plant, can be lined up to any one of the eleven channels, or turned off, by means of a selector switch for that jack located in the auxiliary relay room.

1.3 Dial Telephone Subsystem

- Enables a caller at a handset to direct dial a call to any other handset on this system inside the plant.
- Enables a caller at a handset to dial a call to a location outside the plant via the NMPC tie lines.
- Provides a direct telephone link used solely for power dispatching purposes.

B. SYSTEM DESCRIPTION (Cont)

1.4 The Hand-Held Portable Radio Communications Subsystem (COR/COS)

This communication system enables the user to maintain voice contact with one or more similar units while moving about the plant as may be required to perform maintenance or emergency situation tasks. The portable hand-held radio system uses transmitters on the Lower VHF Band with Leaky Wire Antenna System, thereby allowing communications by Hand-Held portable radios in most areas of the plant without interfering with sensitive plant instrumentation. This system is meant to be used by particular individuals and not by all employees and contractors.

1.5 The Sound-Powered Communications Subsystem (COJ)

The Sound-Powered Communications Subsystem is provided for voice communication in the event of a total loss of electric power to the PP/PA and M/C subsystems. The SPC subsystem requires no plant electrical power.

2.0 Extraplant Communications Subsystem

2.1 Telephone and Radio Links

Telephone and radio links provide direct communication with special organizations and agencies such as the local law enforcement authority, local fire department, other power stations, and the commercial telephone systems.

2.2 Emergency Radio System

Emergency Radio System will allow for communication with Niagara Mohawk Radio System and the Oswego County Fire Control. This system will be further discussed in the Emergency Plan. Each of the communications subsystems is of a different type from the others, and each subsystem is installed separately from the others. Thus, damage to or a fault on any one subsystem would not affect the operability of the others.

C. OPERATING REQUIREMENTS

The following systems must be in operation in accordance with their applicable operating procedure in order to provide unrestricted operation of plant communication equipment.

- N2-OP-71C, 600V A.C. Distribution
- N2-OP-73A, Normal DC Distribution

F. NORMAL OPERATION (Cont)

1.2 Select the channel to be used as follows:

1.2.1 Go to 2COJ-RSC88, MAINTENANCE CALIBRATION SELECTOR SWITCH PANEL located in the Auxiliary Relay Room CB288, on the mid portion of the North Wall.

1.2.2 Locate the two (or more) control switches associated with the jacks, (such as switch 35 for jacks JK35A AND JK35B), that will be used.

1.2.3 Turn the control switches to the desired channel (1 through 11).

G. SHUTDOWN

1.0 The PP/PA communication system is normally left in operation at all times. IF for some reason it is required to be shutdown, de-energize power supplies as listed on Attachment 1, except for power to Maintenance Calibration System.

2.0 The dial telephone system is normally left in operation at all times. IF for some reason it is required to be shutdown, notification must be made to the NRC, according to NRC Bulletin 85-79.

3.0 The Maintenance Calibration Communication system is normally left in operation at all times. IF for some reason it is required to be shutdown, THEN take to OFF, 2LAC-PNLN04-4.

H. OFF-NORMAL PROCEDURE

NOTE: PP/PA central control consoles in the control room OR remote shutdown room are used for plant-wide broadcast of the evacuation, station, and fire alarms. Refer to EPPs for proper use of PP/PA system during emergency.

1.0 Site-Wide AND Emergency Announcements

1.1 IF a Site-Wide OR Emergency Announcement is required, perform the following:

1.1.1 Actuate the MERGE switch.

1.1.2 Sound the appropriate alarm.

1.1.3 Make announcement on the PAGE system.

1.1.4 Call the Unit 1 CSO and verify announcement was heard on PAGE system.

Facility: Nine Mile Point # 2		Date of Examination: 12/06/99
Examination Level (circle one): **SRO**		Operating Test Number: Cat A Test 2
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Startup Requirements	Question 1. Given conditions, classify a Reactivity Management Event. K/A 2.2.1, 2.2.35
		Question 2. A reactor startup is in progress, what administrative controls are in place to prevent mispositioned control rods? K/A 2.1.2, 2.2.1, 2.2.34
	Security	Question 1. What actions are required to obtain access to the Steam Tunnel and responsibilities for maintaining security of the area? K/A 2.1.2, 2.1.13
		Question 2. What actions must be taken in the event of the loss of a vital area key? K/A 2.1.2, 2.3.10
A.2	Surveillance Testing	Question: 1. What approvals are required if a surveillance test cannot be performed within the specified frequency? K/A 2.1.12, 2.2.12
		Question 2. What are the post maintenance test requirements following maintenance on a containment isolation valve? K/A 2.1.12, 2.1.28, 2.1.33, 2.2.18, 2.2.21, 2.2.24
A.3	Radiation Monitoring	Question 1. During an ATWS, an auxiliary operator must be dispatched to the HCUs to vent CRDM overpiston areas. What actions must be taken to assure ALARA requirements are met? K/A 2.3.2
		Question 2. A failure of the Digital Control System communication link to the Digital Radiation Monitoring System (DRMS) results in the loss of all control room annunciation associated with DRMS. What are the Technical Specification restrictions on plant operation? K/A 2.3.11, 2.1.33, 2.1.12
A.4	Emergency Classification	JPM: (New) Emergency Plan classification of each SRO candidates scenario (to be administered after each scenario). K/A 2.4.29, 2.4.41

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Startup Requirements
Question Number:	1

Question:

During a reactor startup using control rod sequence A2UP, the ATC RO notices that during the performance of RWM step 4, control rod 26-07 (RWM Step 3) is at position 02. The Reactor Operator reports that he failed to move the rod to position 04 when positioning it.

Classify the Reactivity Management Event?

Answer:

Severity Level 2 Event **OR** Reactivity Event

Technical Reference(s):
GAP-OPS-05, Rev 00 Section 3.13, Section 4.0, Attachment 4

K/A #:	Importance:
2.2.1, 2.2.35	3.6, 3.2

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-OPS-05

REVISION 00

REACTIVITY MANAGEMENT

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

For R.G. Smith
Plant Manager - Unit 1

4/15/98
Date

CONTROLLED

Approved by:
K. A. Dahlberg

Plant Manager - Unit 2

4/15/98
Date

THIS PROCEDURE SUPERSEDES N1-ODP-OPS-0106 AND N2-ODP-OPS-0110

Effective Date: 06/15/98

3.12.3 Any work identified in step 3.12.2 having an impact on reactivity management should be forwarded to Reactor Engineering for evaluation. During off-hours, any licensed SRO or STA can fulfill this function for Reactor Engineering.

3.13 Reactivity Management Incident Reporting and Trending

3.13.1 The following criteria should be used to classify reactivity management events (See Attachment 4 for examples) :

a. Severity Level 1 (SL1) Event - Significant Reactivity Event: An unplanned or uncontrolled plant change that significantly degrades the ability to control or monitor reactivity. "Significant" is defined as generally meeting one or more of the following criteria:

1. A reactivity related Technical Specification limit was exceeded;

2. An unplanned or uncontrolled reactor power change greater than 2% of rated thermal power (RTP);

3. An unplanned or uncontrolled reactor power change which results in failure of the fuel cladding.

4. Dropped or mispositioned fuel bundle in the reactor.

b. Severity Level 2 (SL2) Event - Reactivity Event: An unplanned or uncontrolled plant change not categorized as "significant" which:

1. Impairs the ability to control or monitor reactivity;

2. Results in an unexpected reactivity change (occurrence and/or magnitude);

3. Adversely affects a set point or alarm significant to reactivity.

c. Severity Level 3 (SL3) Event - Reactivity Precursor: An unexpected plant change or problem that was one barrier away from resulting in a Class 1 or Class 2 Event.

d. Reactivity Management Related Problem (RRP): An unexpected problem which can be related to the ability to control or monitor reactivity, but does not meet the criteria for the Severity Level 1, 2, or 3 Events. Reactivity management related problems, when taken as a group, may indicate problems with equipment, processes, procedures, and/or performance.

3.13.2 A DER shall be generated for the events of severity Level 1, 2 or 3 listed in Attachment 4.

3.13.3 A Reactivity Management Performance Monitoring Program should be established by Reactor Engineering Supervisor to monitor the effectiveness of the Reactivity Management Program.

3.13.4 A corrective action plan should be initiated to address adverse reactivity management performance trends.

3.14 3D Monicore

3.14.1 The Reactor Engineering Supervisor shall approve changes to the 3D Monicore Data Class constants in accordance with department procedures.

3.14.2 Computer System Engineering personnel shall assist Reactor Engineering in changing the 3D Monicore data bank.

3.14.3 Before Beginning of Cycle (BOC) Startup, the Supervisor Reactor Engineering, in conjunction with Computer System Engineering personnel, should verify key 3D Monicore data classes.

3.15 Control Rod Problem Log

3.15.1 A Control Rod Problem Log should be in place to document control rod operational problems.

3.15.2 The CRD System Engineer should ensure the log is periodically updated.

3.15.3 The Reactor Engineer should review the CRD Problem Log to identify potential control rod movement concerns. These concerns should be communicated to operators prior to reactivity maneuvers.

4.0 DEFINITIONS

4.1 (C6) Additional Qualified Individual

A person that performs verification of control rod selection and positioning when moving control rods. This person may be an SRO, AOC, RO, STA, Reactor Engineer or Reactor Analyst Technician. Those individuals that are not licensed are authorized to perform verification of control rod selection and positioning.

4.2 Banked Position Withdrawal Sequence (BPWS)

4.2.1 The rod sequencing rules followed between "ALL-RODS-IN" and the Low Power Set Point (LPSP) to assure compliance with the Control Rod Drop Accident Analysis.

4.2.2 The methodology used to withdraw control rods from the 100 percent control rod density point to low power setpoint that results in incremental control rod reactivity worth so peak fuel enthalpy resulting from a control rod drop is below 280 cal/gm.

4.3 Control Rod Exercising Instructions - Instructions for conducting rod exercising accounting for fuel preconditioning and other requirements.

4.4 Core Reactivity Control (CRC) Book - A binder located in the Control Room, provided to the Operating Shift by the Supervisor Reactor Engineering and maintained in accordance with Reactor Engineering Instructions. The CRC book contains as a minimum:

- Identification of CRAM RODS
- Control Rod Exercising instructions
- Allowable Recirculation Flow window to maintain desired power level.
- Shutdown control rod sequence, if applicable
- Special Instructions/Precautions as necessary

4.5 CRAM Rods - High worth control rods used for rapid power reductions in an emergency/off-normal situation.

4.6 Deep Control Rod - A control rod inserted to between position 24 and 00.

4.7 Fuel Preconditioning Recommendations - Special recommendations on power increases provided by the fuel vendor or Nuclear Fuels Engineering to minimize fuel damage due to Pellet-Clad-Interaction.

4.8 Mispositioned Control Rod - A control rod moved more than one notch beyond its target position, or a single notch error identified after the verification signoff is performed.

4.9 Reactivity - A measure of the effect on the rate at which neutron population will increase or decrease in nuclear fuel. In particular, the following parameters can significantly change reactivity: control rod position; core loading; fuel storage configuration; reactor power level; reactor coolant system temperature, pressure, flow, and reactor coolant void fraction.

4.10 Reactivity Controls - Hardware or administrative controls to ensure reactivity changes are performed within the bounds of analysis.

4.11 Reactivity Event - A failure of equipment, procedures, or work practices that causes or could cause a thermal limit to be exceeded, a core instability to occur, an unexpected criticality, or a failure to control global or local core reactivity as intended or in accordance with procedural requirements.

4.12 Reactivity Management - The systematic and philosophical direction given to controlling any and all evolutions that could affect reactivity.

4.13 Reactivity Management Related - Pertaining to the ability to monitor, measure, or control reactor power or fuel criticality status.

4.14 Sequence - One of four groupings of control rods defining which rods are inserted and if inserted, deep or shallow.

4.15 Shallow Control Rod - A control rod inserted to between position 30 and 48.

4.16 Shutdown - All rods inserted to; 02 or beyond (NMP-2) or 04 or beyond (NMP-1). If shutdown margin for the current cycle has been demonstrated, this definition could be met if all rods except one are inserted to position 00. The remaining rod can be at any position.

4.17 Startup/Shutdown Control Rod Movement Instructions - Instructions to achieve the desired Control Rod Pattern from the ALL-RODS-IN condition or to direct control rod insertions to the ALL-RODS-IN position. These instructions:

- Implement the Banked Position Withdrawal Sequence (BPWS).
- Control deviations from the BPWS above the low power setpoint.
- Ensure a monitored approach to criticality.
- Document reactivity changes.

4.18 Target Control Rod Pattern - The control rod pattern, developed by calculation, expected at 100 percent power with the desired flow.

4.19 Turbine Valve Testing Instructions - Instructions for required power drops and returning to rated power associated with the test accounting for fuel ramp rate limitations and other requirements.

5.0 REFERENCES AND COMMITMENTS

5.1 Licensee Documentation

5.1.1 Unit 1 Technical Specification Section 6.2.2.f

5.1.2 Unit 2 Technical Specification Section 6.2.2.f

5.2 Standards, Regulations, and Codes

5.2.1 For NMP-1, ANSI/ANS-3.1-1971, Qualifications of Nuclear Power Plant Personnel

5.2.2 For NMP-2, ANSI/ANS-3.1-1978, Qualifications of Nuclear Power Plant Personnel

5.2.3 Power/Flow U1 Operating Map DWG F45683C

5.2.4 Power/Flow U2 Operating Maps EM-950A/B

ATTACHMENT 4: EVENT CLASSIFICATION

Severity Level 1 Events:

- increase in frequency or severity of SL2 events
- core thermal hydraulic instability
- unplanned criticality during refueling
- plant transient outside design basis
- operation of core outside of design or licensing basis
- control rod drop accident
- misloaded fuel bundle in the reactor core
- violation of TS Thermal Limit Action Statement
- anticipated transient without scram (ATWS)
- fuel damage resulting from uncontrolled, unplanned, or improperly performed reactivity change

Severity Level 2 Events:

- increase in frequency or severity of SL3 events
- TS Thermal Limit Violation (MFLPD, MFLCPR, MAPRAT > 1.000)
- improper heat balance caused by undetected instrument or sensor failure resulting in violation of the licensed thermal power limit
- error in control rod movement instructions or fuel movement instructions that results in an improper reactivity change
- procedure violation resulting in improper bypass of a control rod
- error in data or calculation used to monitor core reactivity (i.e., reactivity anomaly)
- calculation error in reactivity related surveillance test (i.e., scram time testing, shutdown margin, reactivity anomaly, etc.) and not detected until after approval
- miscalibrated nuclear instruments
- improperly performed or inadequate maintenance resulting in reactivity change (i.e., causing a Loss of Feedwater Heating during maintenance on feedwater heaters)
- mispositioned control rod resulting from personnel error
- violation of Fuel Preconditioning Recommendations.

Severity Level 3 Events:

- error in control rod movement instructions or fuel movement instructions but discovered by operator/RE before implementation
- mispositioned control rod resulting from equipment problem (i.e., triple-notch event)
- misloaded fuel bundle in the spent fuel pool
- calculation error in reactivity related surveillance test (i.e., scram time testing, shutdown margin, reactivity anomaly, etc.) detected at the approval step

Reactivity Management Related Problem:

- miscellaneous control rod equipment problem (i.e., double-notching, difficult to move off 00, etc.)
- abnormally fast or slow control rod stroke speeds
- core monitoring code work arounds (i.e., monitoring cases failing because on inadequate disk space, start/restart cases fail unless selected points are substituted, etc.)
- RCS Flow Control Valve problems at Unit 2
- excessive LPRM Failure.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Startup Requirements
Question Number:	2

Question:

A reactor startup is in progress using control rod sequence A2UP. You have completed moving control rods in RWM Step 4. Prior to and while moving control rods in RWM Step 5, what actions are taken by the Reactor Operator to ensure control rods are moved to the correct position?

Answer:

Prior to commencing a new page (i.e., RWM Step 5):

- Update the final rod position (posted by the 4-rod display) with the final position of the control rods in RWM Step 5.
- Reactor Operator and verifier initial above the appropriate "TO" position for RWM Step 5 on the Control Rod Sequence Sheet.

Conduct rod movements using the Control Rod Sequence Sheets.

- RO verbalizes intended actions including selected rod, initial position, and final position. Intended actions (selection and positioning) are verified and verbally acknowledged by an additional qualified individual (verifier).

Technical Reference(s):
GAP-OPS-05, Rev 00 Section 3.4

K/A #:	Importance:
2.1.2, 2.2.1, 2.2.36	4.0, 3.6, 3.2

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-OPS-05

REVISION 00

REACTIVITY MANAGEMENT

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

For R.G. Smith
Plant Manager - Unit 1

4/15/98
Date

CONTROLLED

Approved by:
K. A. Dahlberg

Plant Manager - Unit 2

4/15/98
Date

THIS PROCEDURE SUPERSEDES N1-ODP-OPS-0106 AND N2-ODP-OPS-0110

Effective Date: 06/15/98

3.3.2 (Cont)

e. Changes to a Reactivity Maneuver Request Form after it has been approved by the SSS may only be performed with concurrence by the SSS and Reactor Engineer or STA. Changes shall be initialed and dated by the SSS and Reactor Engineer or STA.

3.3.3 Fuel Movement Instructions (FMIs)

a. Once in the Spent Fuel Pool, all fuel movement shall be performed using approved Fuel Movement Instructions.

b. Fuel Movement Instructions and associated procedural requirements shall ensure that fuel is only placed in pool or core locations in a configuration analyzed to meet shutdown margin (SDM) requirements for fuel movement and storage.

c. Fuel Movement Instructions shall be prepared by reactor engineering using approved procedures. The approved procedures should implement independent verification by another member of reactor engineering. The Reactor Engineering Supervisor should approve the Coversheet.

d. Changes to Fuel Movement Instructions after they have been approved may only be performed with concurrence by the SSS and reactor engineer. Changes shall be initialed and dated by the SSS and reactor engineer.

3.3.4 General Reactor Operator Instructions (CRC-Book)

Instructions for Operators to maintain desired steady state power level. These instructions include an allowable Core Flow range to maintain reactor power and are contained in the CRC book.

3.4 Reactivity Controls During Control Rod Movement

3.4.1 Operators shall conduct control rod movements in accordance with Reactivity Maneuver Requests (Attachment 1), Startup/Shutdown Control Rod Movement Instructions or other approved procedures.

NOTE: Although the Additional Qualified Individual may not be licensed or qualified to manipulate the controls of the facility, the Additional Qualified Individual is authorized to perform verification of rod selection and positioning.

3.4.2 (C6) All control rod selection and positioning should require an additional qualified individual (SRO, AOC, RO, STA, Reactor Engineer, or Reactor Analyst Technician) to perform verification, except when deemed appropriate by the SSS (For example: emergency power reductions).

3.4.3 While manipulating control rods, except during emergency power reductions or EOP's, operators should verbalize their intended actions including rod selected, initial position and final position. This should be verified and verbally acknowledged by the additional qualified individual prior to rod movement.

3.4.4 At Unit 2, the following requirements should be utilized for control rod movement, except during emergency power reductions, EOPs, or Weekly Control Rod Movement and Position Indicator Verification Surveillance.

a. Prior to commencing a new page on the Startup or Shutdown Rod Sequence Sheets or a Reactivity Maneuver Request Form, the Reactor Operator should ensure that a sign indicating the final rod position for the rods on that page has been posted beside the 4-Rod display.

b. Once the sign is posted, the Reactor Operator and the additional qualified individual should initial above the appropriate "TO" position on the sequence sheet or Reactivity Maneuver Request Form.

NOTE: Rod changes require intense focus and concentration and require frequent breaks. The following is the maximum time period for movements, but the responsible individuals should take breaks whenever needed.

c. Relief should be provided to both the RO and additional qualified individual at intervals not to exceed approximately 60 minutes for a period of at least 30 minutes. Due to the routine nature of weekly rod exercising, the RO and additional qualified individual should take a short break after every page.

3.4.5 At Unit 2, use of continuous withdraw of control rods is limited to those rods that are intended to be withdrawn directly to position 48, unless otherwise directed by procedure.

3.5 Reactivity Controls During Recirculation Flow Changes

3.5.1 Operators should conduct recirculation flow changes in accordance with a Reactivity Maneuver Request Form (Attachment 1) or other Approved procedures. A Reactivity Maneuver Request Form is not needed for recirculation flow changes required to maintain power "Power Maintenance".

3.5.2 During recirculation flow changes, Operators should verbalize their Actions and receive confirmation from the Additional Qualified Individual.

3.5.4 During recirculation flow changes monitor redundant nuclear instrumentation and recirculation flow indication.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Security
Question Number:	1

Question:

During an outage, with the plant in Mode 4, you are directed to hang a Markup on feedwater valves in the Steam Tunnel.

What must you do to obtain access to the Steam Tunnel and what are your responsibilities for maintaining security of the area?

NOTE: RWP and Confined Space requirements are NOT required when answering this question.

If asked if the team tunnel area has been "de-vitalized", inform the candidate that the area has NOT been de-vitalized.

Answer:

Permission to access the Steam Tunnel must be obtained from Radiation Protection prior to obtaining the key. The key is obtained from SSS (done by getting the key from the locked key cabinet and completing the sign out log).

Once an individual has the key they must maintain it in their possession and no one else is allowed to use the key.

The key may NOT leave the protected area and must be returned at the end of the shift or completion of the task whichever is sooner.

Technical Reference(s):

NIP-SEC-02,
Sections 3.2.3, 3.2.6, 3.2.7
GAP-OPS-01, Section 3.7.4

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Security
Question Number:	1

K/A #:	Importance:
2.1.2, 2.3.10	4.0, 3.3

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

NUCLEAR INTERFACE PROCEDURE

NIP-SEC-02

REVISION 08

GENERAL SECURITY REQUIREMENTS

TECHNICAL SPECIFICATION REQUIRED

Approved by: _____ 7/22/98
C. D. Terry
Safety Assessment and Support
Date

Effective Date: 07/29/98

3.2.3 Personnel issued vital area keys shall retain the keys in their personal possession and shall not remove the keys from the protected area, except as permitted by Nuclear Security Branch procedures. These vital area keys shall be attached to the individual's photo ID badge and shall only be removed by Nuclear Security.

3.2.4 Individuals who have been issued a vital area key on their photo ID badge shall return the key to Nuclear Security whenever:

a. The individual's job function changes such that a vital area key is no longer required to perform job duties.

b. The individual changes departments.

3.2.5 The SSS shall control temporary issuance of vital area keys assigned to the Control Room ensuring:

a. A key sign out log for temporarily issued keys is used.

b. A separate locked cabinet is used to store the key log and unissued keys.

3.2.6 Personnel receiving a temporarily issued vital area key from the SSS shall retain the key in their possession and shall not remove the key from the protected area.

3.2.7 Personnel shall return temporarily issued vital area keys to the SSS upon completion of use or prior to completing their shift, whichever is sooner.

3.3 Deliveries into the Protected Area

3.3.1 Nuclear Security shall ensure packages and materials to be delivered into the protected area from offsite are properly identified, authorized, and searched in accordance with applicable security procedures.

3.3.2 For deliveries to Materials Management arriving during normal working hours, storekeeper authorization is required.

3.3.3 For all other deliveries, authorization shall be provided by a NMPC Nuclear Division Supervisor, who possesses unescorted access authorization and who is knowledgeable in the details of the delivery (ie., contents, arrival time, name of carrier, etc.).

3.3.4 When applicable and before permitting the delivery into the protected area, Nuclear Security shall contact Radiation Protection to ensure that appropriate surveys are performed in accordance with radiation protection requirements.

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-OPS-01

REVISION 11

ADMINISTRATION OF OPERATIONS

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

Robert G. Smith
Plant Manager - Unit 1

12/22/98
Date

Approved by:
N. C. Paleologos

Plant Manager - Unit 2

12/22/98
Date

Effective Date: 12/31/1998

3.7.4 Unit 2 Steam Tunnel

The key for access to the Unit 2 Steam Tunnel (Vital Area Door R-240-6) shall be controlled by the SSS and issued in accordance with NIP-SEC-02, Security requirements.

NOTE: This key is required to enter and to exit the Steam Tunnel. This key shall remain with the individual to whom it was issued until returned to the SSS. Personnel accessing this area shall obtain Radiation Protection approval for entry prior to key issuance.

3.7.5 Emergency Access

The SSS may use or authorize use of HRA Master keys stored in the "break-to-enter" key box located in the Control Room. The box contains keys to access transient, high, locked high and very high radiation areas. The SSS shall utilize a Radiation Protection technician when using these keys, to ensure compliance with technical specifications.

3.7.6 Vital Area Key Inventory

a. The SSS shall control temporary issuance of vital area keys assigned to the Control Room, ensuring:

- A key signout log is used for temporarily issued keys
- The key signout log and unissued keys are stored in a separate, locked cabinet.

b. The Shift Security Supervisor, with assistance from the SSS shall conduct a daily inventory of vital area keys stored in the Control Room.

3.7.7 Loss of Control

A controlled key not properly issued from its storage location or a properly issued key found unattended shall constitute a loss of key control. The following shall apply if a loss of key control occurs:

a. Vital Area Key

The SSS and Nuclear Security shall be notified immediately of any loss of control of a vital area key.

b. Non-Vital Area Key

The SSS shall be notified immediately of any loss of control of a non-vital area controlled key. Upon notification, the SSS shall assess the significance of the loss of control and initiate appropriate action to assure positive control of the locked component, device or door is restored or maintained.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Security
Question Number:	2

Question:

During an outage, with the plant in Mode 4, you have issued the key to the steam tunnel. The individual who signed it out reports that they have lost the key. What actions must be taken?

Answer:

Ensure the S.S.S, Security and Radiation protection have been notified.

Immediately establish positive access control by posting an individual at the area.

Initiate a Security Work Request (SWR) to replace the lock within 24 hours.

Maintain an individual at the area until it can be locked or roped off, posted and a flashing yellow light installed.

Technical Reference(s):
S-RAP-RPP-0801, Section 3.5 GAP-OPS-01, Section 3.7.7

K/A #:	Importance:
2.1.2, 2.3.10	4.0, 3.3

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

RADIATION PROTECTION ADMINISTRATIVE PROCEDURE

S-RAP-RPP-0801

REVISION 08

HIGH RADIATION AREA MONITORING AND CONTROL

Approved by:
P. O. Smalley

Manager Radiation Protection - Unit 1

4-5-97
Date

Approved by:
D. W. Barcomb

Manager Radiation Protection - Unit 2

for DW Barcomb

4-5-97
Date

Effective Date: 04/05/97

3.4.2 (Cont)

- If NO enclosure exists that can be locked and NO enclosure can be reasonably constructed around the individual areas (e.g., Drywell, Torus area, suppression pool) then:

  a. Obtain consent and approval of the Supervisor Radiation Protection or designee to perform the following steps:

     1. Rope off the area; AND

     2. Conspicuously post the area; AND

     3. Activate a flashing light as a warning device; OR

     4. Provide continuous surveillance ensuring positive access control over the area.

  b. If flashing lights are used, a verification frequency of at least once per day or as directed by RP supervision should be established to ensure the operability of the flashing lights.

3.5 Broken Locks and Lost Keys

RP Chief Technicians shall implement controls for each area that has an inoperable door/gate (cannot be maintained locked) or unaccounted for key as follows:

3.5.1 Locked High Radiation Area

a. Immediately establish positive access control at entrance(s).

b. Notify RP supervision AND Station Shift Supervisor (SSS). Additionally, notify Security for Main Steam Tunnels.

c. Process a Security Work Request (SWR) and request immediate (within 24 hours) response to replace the core or repair the door/gate as appropriate.

d. If the replacement or additional XH/XR lock CANNOT be installed in a timely manner, then:

   1. In accordance with 10CFR20.1601(b), an individual shall be posted at the area to prevent unauthorized entry. This shall be maintained until one of the following controls can be established.

   2. Install if possible a XH/XR cored padlock and chain to secure the door/gate.

3.5.1.d (Cont)

3. The area shall be roped off, conspicuously posted and a flashing yellow light activated as a warning device for a time period not to exceed the next regularly scheduled working day.

3.5.2 High Radiation Area

a. Immediately establish positive access control at entrance(s).

b. Ensure the requirements of Section 3.3 are met.

3.6 High Radiation Area Access, Monitoring, and Survey Requirements

3.6.1 For entry into a High Radiation Area, station personnel shall sign in and work under a Radiation Work Permit (RWP).

3.6.2 For High Radiation Areas which are locked, station personnel should obtain an H-key or XH/XR key from the RP Chief Technician/assigned Backshift Technician (or Control Room for Main Steam Tunnels) by signing out the key on the appropriate Key Sign Out Log.

a. Except for keys issued for Operations Department Rounds, keys shall be issued by the RP Chief Technician/assigned Backshift Technician.

b. Keys issued to support Laundry or Trash walkdowns or pick ups shall only be issued to the assigned RP Technician.

3.6.3 RP Chief Technicians/assigned Backshift Technicians shall ensure personnel entering a High Radiation area are monitored by being provided with, or accompanied by, one of the following:

a. A radiation monitoring device which continuously indicates the radiation dose rate in the work area.

NOTE: Personnel are required to monitor area radiation levels when entering a High Radiation Area to satisfy 10CFR20.2103, Records. The instrument used for the survey also satisfies Technical Specification 6.12.1.a requirements.

b. A Radiation Monitoring device (e.g., Digidose) which continuously integrates radiation dose and alarms at a preset integrated dose.

Use of this method is authorized only after:

1. Area dose rates have been established.

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-OPS-01

REVISION 11

ADMINISTRATION OF OPERATIONS

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

Robert G. Smith
Plant Manager - Unit 1

12/22/98
Date

Approved by:
N. C. Paleologos

Dan Bosnic & NCP
Plant Manager - Unit 2

12/22/98
Date

Effective Date: 12/31/1998

3.7.4 Unit 2 Steam Tunnel

The key for access to the Unit 2 Steam Tunnel (Vital Area Door R-240-6) shall be controlled by the SSS and issued in accordance with NIP-SEC-02, Security requirements.

NOTE: This key is required to enter and to exit the Steam Tunnel. This key shall remain with the individual to whom it was issued until returned to the SSS. Personnel accessing this area shall obtain Radiation Protection approval for entry prior to key issuance.

3.7.5 Emergency Access

The SSS may use or authorize use of HRA Master keys stored in the "break-to-enter" key box located in the Control Room. The box contains keys to access transient, high, locked high and very high radiation areas. The SSS shall utilize a Radiation Protection technician when using these keys, to ensure compliance with technical specifications.

3.7.6 Vital Area Key Inventory

a. The SSS shall control temporary issuance of vital area keys assigned to the Control Room, ensuring:

- A key signout log is used for temporarily issued keys
- The key signout log and unissued keys are stored in a separate, locked cabinet.

b. The Shift Security Supervisor, with assistance from the SSS shall conduct a daily inventory of vital area keys stored in the Control Room.

3.7.7 Loss of Control

A controlled key not properly issued from its storage location or a properly issued key found unattended shall constitute a loss of key control. The following shall apply if a loss of key control occurs:

a. Vital Area Key

The SSS and Nuclear Security shall be notified immediately of any loss of control of a vital area key.

b. Non-Vital Area Key

The SSS shall be notified immediately of any loss of control of a non-vital area controlled key. Upon notification, the SSS shall assess the significance of the loss of control and initiate appropriate action to assure positive control of the locked component, device or door is restored or maintained.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	Surveillance Testing
Question Number:	1

Question:

On 12/14/99 at 0000 hours, it is discovered that N2-OSP-RHS-Q@004, RHR SYSTEM LOOP A PUMP & VALVE OPERABILITY TEST AND ASME XI PRESSURE TEST, was last performed on 9/1/99 at 0000 hours. What approvals are required if the test cannot be performed within the next 48 hours?

Answer:

The test cannot be completed before exceeding 1.15 times the surveillance interval, therefore Branch Manager approval is required.

The following is not required by the candidate to answer the question:

1. *On 12/2/99 at 0000, 92 days expired.*
2. *On 12/15/99 at 1912, 105.8 days expires (GAP-SAT-01, 15% extension)*
3. *On 12/25/99 at 0000, 1.15 days expires (25% extension)*

Technical Reference(s):

GAP-SAT-01, Rev 06
Section 3.2, Steps 3.2.3

K/A #:	Importance:
2.1.12, 2.2.12	4.0, 3.4

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-SAT-01

REVISION 06

SURVEILLANCE TEST PROGRAM

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

Plant Manager - Unit 1 CONTROLLED

6/23/99
Date

Approved by:
N. C. Paleologos

Plant Manager - Unit 2

6-24-99
Date

Effective Date: 06/24/1999

1.0 PURPOSE

To provide administrative controls for surveillance tests and inspections required by Technical Specifications and other license requirements.

1.1 Applicability

This procedure applies to personnel responsible for performing surveillance tests at Nine Mile Point Nuclear Station.

2.0 PRIMARY RESPONSIBILITIES

2.1 **Responsible Branch Managers** have overall responsibility to ensure surveillance and periodic tests comply with Technical Specifications and other license requirements.

2.2 The **Station Shift Supervisor (SSS)** is responsible to authorize the performance of surveillance tests and to determine the operability status of associated systems, structures, and components.

2.3 **Supervisors** are responsible to ensure assigned surveillance tests are performed as scheduled or are rescheduled or delayed as allowed.

3.0 PROCEDURE

3.1 Surveillance Test Program

(C3) 3.1.1 A lead group shall be assigned responsibility for each surveillance test required by Technical Specifications and other license requirements. The lead group shall:

a. Ensure procedures are prepared and approved for each assigned activity

b. Ensure surveillance test requirements comply with Unit Technical Specifications

c. Provide input to the Preventive Maintenance and Surveillance Test Database (PMST) per GAP-PSH-02

3.2 Scheduling Surveillance Tests and LCO Specified Actions

3.2.1 Each required surveillance test shall be scheduled per GAP-PSH-02, except as noted below:

a. Each department is responsible for scheduling, performing, and documenting completion of assigned "short frequency" tests (frequency of less than seven days).

3.2.1 (Cont)

b. Each department shall conduct "Event-Related Tests" (those associated with specific occurrences such as mode or LCO action statement requirements) at the request of the SSS.

(C6)

c. Unless an LCO action specifically requires performance of a surveillance, LCO specified actions shall be scheduled AND completed WITHIN the specified time requirements. Application of the 25% surveillance extension to LCO actions is prohibited.

3.2.2 The responsible planner shall ensure a Work Order is prepared for each surveillance test to be performed per GAP-PSH-01.

3.2.3 Lead groups should ensure surveillance tests are completed on or before the Next Due Date. Unless otherwise specified by Technical Specifications, extensions beyond Next Due Date may be authorized as follows:

a. Greater than +15%, but NOT to exceed +25%, of the assigned surveillance interval with approval of Branch Manager

b. For a second consecutive performance greater than +15%, but NOT to exceed +25% of the assigned surveillance interval with approval of the Branch Manager AND the Plant Manager

3.2.4 Responsible supervision may reschedule or delay performance of the surveillance test, IF:

a. The equipment is inoperable; OR

b. The station is NOT in the required condition for performance of the test

3.2.5 If a surveillance test cannot be performed within the specified plant or system conditions:

a. Responsible supervision shall notify the SSS (if the ST requires SSS notification at completion), and:

1. Reschedule the ST for a time when the necessary conditions exist (primary alternative); OR

2. Initiate a revision or change to the procedure to allow the test to be performed under different conditions

b. The SSS shall determine operability of equipment and take appropriate actions required by Technical Specifications.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test:
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	Surveillance Testing
Question Number:	2

Question:

During a refueling outage, the 2DER*MOV120, EQUIP DRAINS OUTBD ISOL VLV, is scheduled to have its disk and seat replaced. Following completion of the work, what testing is required?

Answer:

- Stroke timing and exercise
- Full stroke freedom of movement verification
- Position Indication
- As-left leak rate

Technical Reference(s):

GAP-SAT-02, Rev 07, Section 3.2
GAP-SAT-02, Rev 07, Definition 4.12
GAP-SAT-02, Rev 07, Attachment 1
NIP-DES-04, Attachment 5
T.S. 4.6.1.2.2, Table 3.6.1.2-1

K/A #:	Importance:
2.1.12, 2.1.28, 2.1.33, 2.2.18, 2.2.21, 2.2.24	4.0, 3.3, 4.0, 3.6, 3.5, 3.8

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-SAT-02

REVISION 07

PRE/POST-MAINTENANCE TEST REQUIREMENTS

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

UNCONTROLLED

Plant Manager - Unit 1 — Date: 10/28/98

Approved by:
N. C. Paleologos

Plant Manager - Unit 2 — Date: 10-28-98

Effective Date: 10/30/98

3.2 Performance of Pre-Maintenance Test and PMT

(C2) 3.2.1 If an SSC has operability conditions defined by technical specifications, the SSS shall ensure Pre-Maintenance Test (Unit 2 only) performance. Otherwise, the SSS may delegate responsibility for ensuring Pre-Maintenance Test (Unit 2 only) performance to the responsible supervisor.

3.2.2 To the extent possible, PMT should be performed under conditions that represent normal operating parameters such as flow, pressure, temperature, input signal values, and fluid type.

3.2.3 If multiple Pre-Maintenance Tests (Unit 2 only) and/or PMT requirements are specified, Pre-Maintenance Tests (Unit 2 only) and/or PMT should be performed in a logical order so that adjustments made during one test do not invalidate a previously performed test.

3.2.4 Personnel shall perform Pre-Maintenance Tests (Unit 2 only) and/or PMT per applicable procedure/work instructions, and report Pre-Maintenance Tests (Unit 2 only) and/or PMT results to the responsible Branch Supervisor/SSS, as applicable, for evaluation per GAP-PSH-01.

(C8) 3.2.5 The SSS shall determine SSC operability based on a review of work documentation, PMT results, and applicable technical specification requirements (including LSFT requirements at Unit 2).

4.0 DEFINITIONS

4.1 **"Any" (as used in Attachments 1-3).** An activity that could affect the proper functioning of a component. Includes disassembly of a component or power supply. Does not include removal of inspection covers on non-pressure retaining components, or non-intrusive maintenance, (such as visual inspections or surface cleaning).

4.2 **CIV.** Containment Isolation Valve

4.3 **Functional Test.** A test (such as a technical specification surveillance test) that demonstrates a component is capable of performing its design functions. At Unit 2, this includes Logic System Functional Test requirements outlined as surveillance requirements in Technical Specifications.

4.4 **Inservice Inspection (ISI).** Non-destructive examination per ASME B&PV Code Section XI.

4.5 **Leakage Test.** A test for leakage at the point of maintenance, such as a Downy Wand or Snoop test.

4.6 **Load Test.** A test designed to ensure a component is capable of carrying a required load.

4.7 **MOV Dynamic Test.** A test performed on motor operated valves to prove that the valves will operate under design flow conditions.

4.8 **MOV Static Test.** A test performed on motor operated valves to develop and trend valve/actuator baseline conditions.

4.9 **Operational Test.** A test that demonstrates normal operation of equipment under normal service conditions.

4.10 **PIV.** Pressure Isolation Valve.

4.11 **Post-Maintenance Test (PMT).** A test performed during or following maintenance activities to verify an original deficiency has been corrected and to ensure a particular SSC performs its design function.

4.12 **Pre-Maintenance Test.** A test performed prior to maintenance activities to determine the "As Found" condition of a particular SSC, currently used only as required for Unit 2 Appendix J, Option B, Program Plan.

4.13 **Pressure/Flow Test.** A test performed at one operating point to demonstrate a that a fan or pump as operating on its head/capacity curve, or to show that a pressure boundary is sufficiently leak tight.

4.14 **Pump Curve Validation.** A test performed at a range of pressures and flows to demonstrate the validity of a pump head/capacity curve after major pump maintenance. Requirements for pump curve validation are provided in specification MDC-11 (Unit 1 ONLY).

4.15 **Stroke Test.** Movement of a valve or damper through a sufficient portion of its travel to assure freedom of movement.

4.16 **Stroke Timing Test.** Timing of the movement of a valve or damper through a sufficient portion of its travel to ensure the travel time is correct. This test usually requires full travel unless partial travel times are previously documented.

4.17 **VT-2.** ASME XI, IWA-5240 code required visual examination for evidence of leakage.

5.0 REFERENCES AND COMMITMENTS

5.1 Licensee Documentation

Unit 1 and 2 Technical Specifications, Section 3.0/4.0, Limiting Conditions for Operation and Surveillance Requirements

ATTACHMENT 1
MECHANICAL PRE/POST-MAINTENANCE TEST GUIDELINES

MECHANICAL COMPONENT	MAINTENANCE ACTIVITY	PRE/POST-MAINTENANCE TEST GUIDELINES
Compressors	Any	1. Full cycle test (unusual noises) 2. Vibration levels 3. Bearing temperature 4. Leakage at operating pressures 5. Check parameters • Cooling flow • Oil level • Temperatures • Oil Contamination
Containment: Primary (C10)	Any opening of an airlock, hatch, or penetration; and any activity affecting the drywell head	Appendix J Program Plan testing, as applicable (may require Pre-Maint. test at Unit 2 - check with Appendix J Coordinator)
Containment: Secondary	Airlock, airlock seal, or penetration repair/replacement	Secondary Containment leakage test (Unit 1 T/S 4.4.1, Unit 2 T/S 4.6.5.1.c)
Control Room Pressure Boundary	Door, door seal, or penetration repair/replacement	Control Room pressure boundary test (Unit 1 T/S 4.4.5.g, Unit 2 T/S 4.7.3.e)
Coolers	Any	See Heat Exchangers or Freon Units
Cranes/Hoists	Any	1. Load test 2. Brake/clutch operability 3. Limit switch operability check
Dampers	Actuator repair or replacement	1. Stroke test 2. Stroke timing check
	Damage repair or replacement	1. Stroke test 2. For Reactor Building or Control Room isolation dampers, a system pressure/flow interlock test 3. Stroke timing check
Diesels	Any	1. EDG Synchronization and load test 2. Auto start functional test 3. Manual start test 4. Diagnostic baseline checks • Vibration • Cylinder compression 5. Fluid parameter checks • Lube oil level • Cooling water flow • Cooling water temperature • Fuel oil sampling • Governor control oil system 6. Engine analyzer 7. Voltage regulation and frequency checks 8. Protective features auto test • Overspeed • Generator differential • Low lube oil pressure • High crankcase pressure 9. Position indicator checks 10. Oil contamination
Fans/Filter Units	Any	1. Head/capacity (pressure/flow) test 2. Function test and manual start 3. Dynamic balance checks 4. Check • Bearing temperature • Vibration level • Abnormal noise 5. Measure running current
Filters (Air)	Housing maintenance	1. Leakage test 2. For SGTS, Control Room Emergency Ventilation, or Reactor Head Evacuation Filter Assembly, chemical absorption test
	Media replacement	Flow, delta pressure, and chemical absorption test
	Intake area smoke, chemical release, or painting	Chemical absorption test
Filters (Fluid)	Housing maintenance	ISI/IST, Hydro

MECHANICAL COMPONENT	MAINTENANCE ACTIVITY	PRE/POST-MAINTENANCE TEST GUIDELINES
Filters (Fluid Cont)	Media Replacement	1. Flow check 2. Delta pressure check
Fire Barriers: Non-pressure boundary	Door, door seal, or penetration repair/replacement	Visual inspection
Flanges	Gasket replacement	1. Leakage check 2. System flow test 3. If part of primary containment pressure boundary, Appendix J Program Plan testing, as applicable
Freon Units (Chillers)	Any	1. Full cycle test 2. Leak check/vibration check at operational condition (unusual noises)
Gates	Any	Exercise test (raise/lower to check for binding/hang-ups
Gears	Any	1. Operability test under load (ST for driven device) 2. Check for noise/vibration
Hatches: Non-containment	Any	Leakage test
Heat Exchangers	Tube plugging	1. Tube leakage test 2. For Unit 1 Containment Spray, leak test 3. Verification of heat exchanger capability, either by test or analysis 4. Hydrostatic or operational test for tube and tube sheet leakage test 5. Heat exchanger parameter check • Temperature • Flow • External leakage
Hydraulic Units	Any	1. Surveillance Test (for driven device) 2. Operability test and leakage check 3. Full cycle test 4. Timing or sequence check
(C12) Internal Coolers	Any	1. Verify adequate flow 2. Verify no internal leakage
Piping (C10)	System Maintenance	1. System flushed 2. ASME Code requirements (hydro test) 3. Integrity check of mechanical joints 4. Cleanness check 5. System restoration • Piping supports • Heat tracing • Insulation 6. Ensure proper attachment of instrumentation lines 7. If part of primary containment pressure boundary, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2)
	Weld repair	1. ISI/IST 2. Code required leakage test (VT-2) 3. If through wall repair, flush or run pump 4. If part of primary containment pressure boundary, Appendix J Program Plan testing, as applicable
Pumps: Safety or Non-Safety related	General	1. Appropriate Surveillance Test (ST) 2. If motor leads were disconnected, check direction of rotation 3. Inspect: • Filters • Oil level • Oil contamination • Cooling flow • Pressures • Bearing temperatures 4. Auto function test (all interlocks) 5. Inspect baseplate and foundation 6. Flush or internal inspection
	Packing/mechanical seal replacement	1. Check for gross leakage 2. Adequate seal cooling 3. Run pump for one hour and then readjust packing 4. Appropriate Surveillance Test (ST)
	Adjustment or operating pump packing	Run pump for one hour and then readjust packing

MECHANICAL COMPONENT	MAINTENANCE ACTIVITY	PRE/POST-MAINTENANCE TEST GUIDELINES
Pumps: Safety or Non-Safety related (Cont) (C3,C6)	Overhaul, wear ring tolerance changes, impeller replacement/trimming	1. Vibration 2. Bearing temperature 3. Internal visual inspection 4. Pump curve validation • Unit 1 - as required per MDC-11 • Unit 2 - curve validation shall be performed for pumps in the IST program. For remaining pumps, System Engineering (Tech. Supp. Engr.) will determine the required testing for curve validation. 5. ISI/IST 6. Code required leakage test/(VT-2) 7. Appropriate Surveillance Test (ST)
	Casing repair	1. Vibration Testing 2. Code required leakage test (VT-2) 3. System flush
Racks	Any	Load test
Rod Drives/HCUs	Any	1. Exercise test 2. Scram time test
	Any affecting coupling integrity	Coupling integrity test
Snubbers	Any	1. Functional test/stroke test 2. VT 3/4 (when required)
Strainers	Pressure boundary repair	1. ISI/IST 2. Code required leakage test (VT-2)
	Any other	1. Flow test 2. Pressure differential check
Tanks/Pressure Vessels	Pressure boundary repair or replacement	1. ISI/IST 2. Code required leakage test (VT-2) 3. Tank/vessel integrity checks 4. Content checks • Concentration • Level • Viscosity • Other 5. Parameter checks • Proper level • Pressure • Temperature • Cleanness 6. Flush
Traveling Screens	Any	Full cycle test
Turbines	Any	1. Surveillance Test (ST) for driven component 2. Auto start functional test 3. Turbine protective feature test 4. Manual start test 5. Oil level check 6. Check for fluid leakage at normal system parameters 7. Vibration analysis 8. Visual check for rotor grounds 9. Fluid inspection for contamination 10. Grease sliding plates at foundation and pedestal 11. Auxiliaries for heating and cooling 12. Turbine (pump) performance check • Flow • Speed • Bearing temperature • Vibration amplitude
Valves (C7)	Non-CIV packing replacement and adjustment (Power operated valves only)	1. Stroke timing test 2. Verify full stroke freedom of movement 3. Leakage check at normal operating pressures 4. Leak rate test, if required 5. Running current checks on motor 6. GL 89-10 valves, verify final force or perform MOV Static Test

MECHANICAL COMPONENT	MAINTENANCE ACTIVITY	PRE/POST-MAINTENANCE TEST GUIDELINES
Valves (Cont) (C7)	Packing replacement or adjustment for CIVs or PIVs listed in NIP-DES-04 Attachments 5 or 6	1. For CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2) 2. Stroke timing & exercise 3. Verify full stroke freedom of movement (at operating pressure) 4. Fail test if applicable 5. Position indication 6. GL 89-10 valves, verify final force or perform MOV Static Test
(C10) (C7)	CIV repair/replacement	1. Perform any code required strength or seat tightness testing 2. Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2) 3. Verify position indication 4. GL 89-10 valves MOV static and/or dynamic test, as directed by MOV coordinator 5. Stroke timing and exercise 6. ISI/IST 7. Code required leakage test (VT-2)
(C10)	Check valves; installation if new, or reworked, or pressure boundary breached	1. Verify proper orientation • Direction of flow • Valve attitude (top-up, bonnet accessibility) 2. Code required leakage test (VT-2) 3. Visual local leak test at normal operating temperature and pressure 4. For CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2) 5. Operational test • Opening/closing • No abnormal noise • Valve chatter • Cavitation 6. Appropriate Surveillance Test (ST) 7. ISI/IST
(C10) (C11)	Limit switch replacement or adjustment (stem mounted or internal)	1. Stroke timing and exercise 2. Verify limit switch actuation of controlled device including any interlocks 3. For limit seated CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2) 4. Position indication test as required 5. GL89-10 valves, MOV static test or other verification method as approved by MOV Coordinator
	Pressure regulating valve repair or replacement	1. Set point calibration check 2. Valve seat leakage test
(C10 (C7)	Torque switch replacement or adjustment	1. Stroke timing and exercise 2. For CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2) 3. GL 89-10 valves MOV static test
(C10)	MOV Actuator - Motor change (like for like), Motor pinion change (like for like), Tripper finger adjustment	1. Stroke timing and exercise 2. For CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2)
(C7)	MOV Actuator upper housing cover removal	1. Stroke timing and exercise 2. GL 89-10 valves, verify final force or perform MOV Static Test
(C7) (C10)	MOV replacement	1. Verify Engineering reperforms calculations per NRC Generic Letter 89-10 MOV Program 2. GL 89-10 valves, MOV static and dynamic tests, as directed by MOV coordinator 3. Stroke timing & exercise 4. Position Indication as required 5. ISI/IST 6. Code required leakage test (VT-2) 7. For CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2)

MECHANICAL COMPONENT	MAINTENANCE ACTIVITY	PRE/POST-MAINTENANCE TEST GUIDELINES
Valves (Cont) (C7) (C4) (C10)	Motor operator replacement, gear train repair, spring pack replacement, spring pack adjustment, operator removal, operator changes affecting speed or thrust/torque, motor modifications	1. Stroke timing and exercise 2. GL 89-10 valves, MOV static test 3. Verify limit switch actuation of controlled device including any interlocks 4. Seat leakage test 5. Starting/running motor current 6. Verify torque and limit switch settings 7. Automatic function test 8. Position verification check 9. MOV grease/lubrication 10. Full-stroke exercising check (two strokes) at normal system flow, pressure and temperature 11. For CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2)
(C4) (C10)	Air operator replacement	1. Full-stroke exercising check (two strokes) at normal system parameters 2. Automatic function test 3. Position verification check 4. Control valve loop alignment verification 5. Positioner and E/P or S/P converter calibration 6. Stroke timing 7. Verify limit switch actuation of controlled device, including any interlocks 8. Snoop air connections 9. For CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2)
     (C10)	Solenoid valve repair or replacement, controller replacement	1. For each sequence solenoid/actuator, full-stroke exercising check 2. Seat leakage test 3. Automatic function test 4. Position indication verification check 5. Stroke time as required 6. Code required leakage test (VT-2) 7. For CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2) 8. ISI/IST
	Pressure boundary repair	1. ISI/IST 2. Code required leakage test (VT-2) 3. If part of primary containment pressure boundary, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2)
Valve Internals (C10) (C4) (C7) (C10) (C7) (C10) (C7)	Air/motor operated valve repair/replacement including stem, disc, or seat changes or lapping	1. For CIVs, Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2) 2. MOV grease/lubrication 3. Verify position indications (remote and local) 4. For packing adjustment, stroke timing 5. Full stroke exercise (two strokes) 6. GL 89-10 valves, MOV static test and/or dynamic test as directed by MOV coordinator 7. Stroke time as required 8. Code required leakage test (VT-2) 9. ISI/IST
	Pressure isolation valve repair/replacement	1. Stroke time & exercise 2. Position indication as required 3. Seat leakage test (Unit 1 T/S 3.2.7.1, Unit 2 T/S 3.4.3.2.d) 4. Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2) 5. Code required leakage test (VT-2) 6. ISI/IST 7. GL 89-10 valves, MOV static test and/or dynamic test as directed by MOV coordinator
	CIV repair/replacement	1. Appendix J Program Plan testing, as applicable (Pre- and Post-Maintenance Testing - Unit 2) 2. Stroke timing & exercise 3. GL 89-10 valves, MOV static test and/or dynamic test as directed by MOV coordinator 4. Position Indication 5. Code required leakage test (VT-2) 6. ISI/IST
	(Unit 1 only) Torus to Drywell vacuum breaker repair/replacement	1. Pressure decay rate test 2. Force test per T/S 4.3.6.b.1 3. Appendix J Program Plan testing, as applicable

MECHANICAL COMPONENT	MAINTENANCE ACTIVITY	PRE/POST-MAINTENANCE TEST GUIDELINES
Valve Internals (Cont)	(Unit 2 only) Suppression Pool/Drywell Vacuum Breaker repair/replacement	1. Cycle through at least one complete cycle of full travel (T.S. 4.6.4.b.1) 2. Verify the position indicators "operable" by performance of a "Channel Calibration" (T.S. 4.6.4b.3b) 3. Set point test (T.S. 4.6.4b.3a) 4. Leak rate test, if required
	(Unit 2 only) Vacuum Breakers, other than Drywell/Suppression chamber repair/replacement	1. Exercise 2. Set point test
	(Unit 1 only) Reactor Building to Torus vacuum breaker repair/replacement	1. Force test per T/S 4.3.6.b.1 2. Appendix J Program Plan testing, as applicable
	Accumulator check valve repair/replacement	1. Leakage check per T/S 4.1.3.5.b.2 (Unit 2) 2. Exercise 3. Code required leakage test (VT-2) 4. ISI/IST
	Safety Valve repair/replacement	1. Relief setpoint test before installation 2. Leak test at operating pressure (see OM-1 for Unit 2) 3. Valve seat leakage test 4. Proper position indications, chattering check, packing leakage 5. Code required leakage test (VT-2) 6. Visual
	ERV/ADS repair/replacement	At Unit 1, flow test per T/S 4.1.5.e At Unit 2, flow test per T/S 4.5.1.e.2.b

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

NUCLEAR INTERFACE PROCEDURE

NIP-DES-04

REVISION 24

LIST OF CONTROLLED LISTS

TECHNICAL SPECIFICATION REQUIRED

Approved By: RB Abbott

R. B. Abbott
Vice President Nuclear Engineering

2/24/99
Date

Effective Date: 03/09/99

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
A. AUTOMATIC				
2MSS*AOV6 A,B,C,D	Inside MSIV	1	Z,X,C,D,E,P,T,R,RM,AA	3 to 5
2MSS*AOV7 A,B,C,D	Outside MSIV	1	Z,X,C,D,E,P,T,R,RM,AA	3 to 5
2MSS*MOV208	MSL Drain Line Outside IV	1	Z,X,C,D,E,P,T,R,RM,AA	18
2MSS*MOV111	Main Steam Drain Line Inside IV	1	Z,X,C,D,E,P,T,R,RM,AA	60
2MSS*MOV112	Main Steam Drain Line Outside IV	1	Z,X,C,D,E,P,T,R,RM,AA	60
2RHS*MOV33 A,B	RHS Cont. Spray Outside IVs	*	RM and *	35
2RHS*MOV104	RHS Reactor Head Spray Outside IV	5	A,L,M,Z,RM,CC,DD	50
2RHS*MOV40 A,B	Shutdown Cooling Return Outside IVs	5	A,L,M,Z,RM,CC,DD	29
2RHS*MOV67 A,B	SDC Inboard IV Bypass Valves	5	A,L,M,Z,RM,CC,DD	18
2RHS*MOV112	SDC Supply Inside IV	5	A,L,M,Z,RM,CC,DD	29
2RHS*MOV113	SDC Supply Outside IV	5	A,L,M,Z,RM,CC,DD	29
2CSH*MOV111	CSH Test Return to Suppression Pool Outside IV	*	RM and *	60
2ICS*MOV164	RCIC Vacuum Breaker Outside IV	11	H & F, RM	21
2CCP*MOV94 A,B	CCP Supply to RCS Inside IVs	8	B,F,Z,RM	38
2CCP*MOV17 A,B	CCP Supply to RCS Outside IVs	8	B,F,Z,RM	38
2CCP*MOV16 A,B	CCP Return from RCS Pumps Inside IVs	8	B,F,Z,RM	38
2CCP*MOV15 A,B	CCP Return from RCS Pumps Outside IVs	8	B,F,Z,RM	38
2DFR*MOV120	DFR Drain Tank Line Outside IV	8	B,F,Z,RM	45
2DFR*MOV121	DFR Drain Tank Line Inside IV	8	B,F,Z,RM	54
2DER*MOV119	DER Line from Drywell Inside IV	8	B,F,Z,RM	35
2DER*MOV120	DER Line from Drywell Outside IV	8	B,F,Z,RM	35
2RCS*SOV104	RCS Sample Inside IV	2	B,C,Z,RM	5
2RCS*SOV105	RCS Sample Outside IV	2	B,C,Z,RM	5

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
2FPW*SOV218(i)	RCS A Water Spray Outside IV		NA	NA
2FPW*SOV219(i)	RCS A Water Spray Inside IV		NA	NA
2FPW*SOV220(i)	RCS B Water Spray Outside IV		NA	NA
2FPW*SOV221(i)	RCS B Water Spray Inside IV		NA	NA
2DFR*MOV139	DFR Vent Line Outside IV	8	B,F,Z,RM	20
2DFR*MOV140	DFR Vent Line Inside IV	8	B,F,Z,RM	20
2DER*MOV130	DER Vent Line Inside IV	8	B,F,Z,RM	18
2DER*MOV131	DER Vent Line Outside IV	8	B,F,Z,RM	18
2CCP*MOV265	Sply to Drywell Space Cooler Outside IV	8	B,F,Z,RM	60
2CCP*MOV273	Sply to Drywell Space Cooler Inside IV	8	B,F,Z,RM	60
2CCP*MOV122	Return from Drywell Space Cooler Inside IV	8	B,F,Z,RM	60
2CCP*MOV124	Return from Drywell Space Cooler Outside IV	8	B,F,Z,RM	60
2CPS*AOV104	Purge Inlet to Drywell Outside IV	9	B,F,Y,Z,RM	5
2CPS*AOV105	Purge Inlet to Sup. Chamber Outside IV	9	B,F,Y,Z,RM	5
2CPS*AOV106(n)	Purge Inlet to Drywell Inside IV	9	B,F,Y,Z,RM	5
2CPS*AOV107(n)	Purge Inlet to Sup. Chamber Inside IV	9	B,F,Y,Z,RM	5
2CPS*AOV108(n)	Purge Exhaust from Drywell Inside IV	9	B,F,Y,Z,RM	5
2CPS*AOV109(n)	Purge Exhaust from Sup. Chamber Inside IV	9	B,F,Y,Z,RM	5
2CPS*AOV110	Purge Exhaust from Drywell Outside IV	9	B,F,Y,Z,RM	5
2CPS*AOV111	Purge Exhaust from Sup. Chamber Outside IV	9	B,F,Y,Z,RM	5
2IAS*SOV164	ADS Hdr A N_2 Supply Outside IV	8	B,F,Z,RM	5
2IAS*SOV165	ADS Hdr B N_2 Supply Outside IV	8	B,F,Z,RM	5
2IAS*SOV166	IAS to MSS Safety Relief Valve Outside IV	8	B,F,Z,RM	5
2IAS*SOV184	IAS to MSS Safety Relief Valve Inside IV	8	B,F,Z,RM	5
2IAS*SOV168	Inst. Air to Testable Check Outside IV	8	B,F,Z,RM	5
2IAS*SOV180	Inst. Air to Testable Check Inside IV	8	B,F,Z,RM	5
2IAS*SOV167	IAS to test Ck. & Vac. Bkrs. Outside IV	8	B,F,Z,RM	5
2IAS*SOV185	IAS to test Ck. & Vac. Bkrs. Inside IV	8	B,F,Z,RM	5

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
2HCS*MOV1 A,B	H_2 Recombiners Sply to Supp. Chamber Outside IVs	8	B,F,Z,RM	30
2HCS*MOV2 A,B	H_2 Recomb. Ret. from Supp. Chamber Outside IVs	8	B,F,Z,RM	30
2HCS*MOV3 A,B	H_2 Recomb. Return from Drywell Outside IVs	8	B,F,Z,RM	30
2HCS*MOV4 A,B(q)	H_2 Recomb. Sply. to Supp. Chamber Inside IVs	8	B,F,Z,RM	30
2HCS*MOV5 A,B(n)	H_2 Recomb. Ret. from Supp.Chamber Inside IVs	8	B,F,Z,RM	30
2HCS*MOV6 A,B(q)	H_2 Recomb Ret. from Drywell Inside IVs	8	B,F,Z,RM	30
2CPS*SOV119	Containment Purge to Supp. Chamber Outside IV	9	B,F,Y,Z,RM	2
2CPS*SOV120	Containment Purge to Drywell Outside IV	9	B,F,Y,Z,RM	2
2CPS*SOV121(n)	Containment Purge to Supp.Chamber Inside IV	9	B,F,Y,Z,RM	2
2CPS*SOV122(n)	Containment Purge to Drywell Inside IV	9	B,F,Y,Z,RM	2
2CMS*SOV24A,B,C,D	CMS from Drywell Inside & Outside IVs	8	B,F,Z,RM	5
2CMS*SOV26A,B,C,D	CMS from SP Inside & Outside IVs	8	B,F,Z,RM	5
2CMS*SOV32 A,B	CMS to Drywell Outside IVs	8	B,F,Z,RM	5
2CMS*SOV33 A,B(n)	CMS to Drywell Inside IVs	8	B,F,Z,RM	5
2CMS*SOV34 A,B(n)	CMS to SP Inside IVs	8	B,F,Z,RM	5
2CMS*SOV35 A,B	CMS to SP Outside IVs	8	B,F,Z,RM	5
2CMS*SOV60 A,B	CMS from Drywell Outside IVs	8	B,F,Z,RM	5
2CMS*SOV61 A,B(n)	CMS from Drywell Inside IVs	8	B,F,Z,RM	5
2CMS*SOV62 A,B	CMS to Drywell Outside IVs	8	B,F,Z,RM	5
2CMS*SOV63 A,B(n)	CMS to Drywell Inside IVs	8	B,F,Z,RM	5
2CPS*SOV132	Nitrogen to 2CPS*AOV107 Outside IV	9	B,F,Y,Z,RM	5
2CPS*SOV133	Nitrogen to 2CPS*AOV109 Outside IV	9	B,F,Y,Z,RM	5
2LMS*SOV152(i)	LMS from Drywell Inside IV	8	B,F,Z,RM	5
2LMS*SOV153(i)	LMS from Drywell Outside IV	8	B,F,Z,RM	5
2LMS*SOV156(i)	LMS from SP Inside IV	8	B,F,Z,RM	5
2LMS*SOV157(i)	LMS from SP Outside IV	8	B,F,Z,RM	5

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
2RCS*SOV65 A,B(l)	Hyd. Unit to RCS FCVs Outside IVs	8	B,F,Z,RM	20
2RCS*SOV66 A,B(l)	Hyd. Unit to RCS FCVs Outside IVs	8	B,F,Z,RM	20
2RCS*SOV67 A,B(l)	Hyd. Unit to RCS FCVs Outside IVs	8	B,F,Z,RM	20
2RCS*SOV68 A,B(l)	Hyd. Unit from RCS FCVs Outside IVs	8	B,F,Z,RM	20
2RCS*SOV79 A,B(l)	Hyd. Unit to RCS FCVs Inside IVs	8	B,F,Z,RM	20
2RCS*SOV80 A,B(l)	Hyd. Unit to RCS FCVs Inside IVs	8	B,F,Z,RM	20
2RCS*SOV81 A,B(l)	Hyd. Unit to RCS FCVS Inside IVs	8	B,F,Z,RM	20
2RCS*SOV82 A,B(l)	Hyd. Unit from RCS FCVs Inside IVs	8	B,F,Z,RM	20
2ICS*MOV121	RCIC Steam Supply Outside IV	10	K,M,H,Z,RM,BB,CC,DD	30
2ICS*MOV128(q)	RCIC Steam Supply Inside IV	10	K,M,H,RM,BB,CC,DD	30
2ICS*MOV170	RCIC Warmup Valve Inside IV	10	K,M,H,RM,BB,CC,DD	18
2WCS*MOV102	WCS Supply from RCS & RPV Inside IV	7	B,J,U,S,Z,RM,DD	14
2WCS*MOV112	WCS Supply from RCS & RPV Outside IV	6	B,J,U,S,Z,RM,DD	14
2ICS*MOV148	RCIC Vacuum Breaker Outside IV	11	H & F, RM	21
2NMS*SOV1A,B,C,D,E	Traversing Incore Probe Ball Outside IVs	3	B,F,Z,RM	5
2GSN*SOV166	Nitrogen Purge to TIP Indexing Mechanism Outside IV	3	B,F,Z,RM	5
2RHS*MOV142(j)(m)	RHS Drain to Radwaste Outside IV	4	A,Z,F,RM	30
2RHS*MOV149(j)(m)	RHS Drain to Radwaste Inside IV	4	A,Z,F,RM	25
2RHS*SOV35 A/B (j)	RHS Sample HX Outside IVs	4	A,Z,F,RM	5
2RHS*SOV36 A/B (j)	RHS Sample HX Inside IVs	4	A,Z,F,RM	5
2RDS*AOV124(k)	SCRAM Discharge Volume Vent	NA		NA
2RDS*AOV132(k)	SCRAM Discharge Volume Vent	NA		NA
2RDS*AOV123(k)	SCRAM Discharge Volume Drain	NA		NA
2RDS*AOV130(k)	SCRAM Discharge Volume Drain	NA		NA

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
B. Remote Manual				
2RHS*MOV15 A,B	Containment Spray to Drywell Outside IVs	12	RM	NA
2RHS*MOV1 A,B,C(o)	RHS Pump Suction Outside IVs	12	RM	NA
2RHS*MOV30 A,B	RHS Test Line to SP Outside IVs	12	RM	NA
2RHS*MOV25 A,B(q)	Containment Spray to Drywell Outside IVs	12	RM	NA
2RHS*MOV24 A,B,C	RHS/LPCI to RPV Outside IVs	12	RM	NA
2CSH*MOV118(q)(o)	CSH Suction from SP Outside IV	12	RM	NA
2CSH*MOV105	HPCS Min Flow Bypass Outside IV	12	RM	NA
2CSH*MOV107	CSH to RPV Outside IV	12	RM	NA
2CSL*MOV112(o)	CSL Suction from SP Outside IV	12	RM	NA
2CSL*MOV104	CSL to RPV Outside IV	12	RM	NA
2ICS*MOV136(q)(o)	ICS Suction from SP Outside IV	12	RM	NA
2ICS*MOV143(n)	ICS Min Flow to SP Outside IV	12	RM	NA
2ICS*MOV122(q)	ICS Turbine Exhaust to SP Outside IV	12	RM	NA
2ICS*MOV126(q)	ICS to RPV Outside IV	12	RM	NA
2NMS*VEX1 A,B,C, D,E(d)	Traversing Incore Probe Shear Outside IVs	12	RM	NA
2FWS*MOV21 A,B	Feedwater to RPV Outside IVs	12	RM	NA
2WCS*MOV200	WCS to RPV Outside IV	12	RM	NA
2RHS*MOV26 A,B(c)(o)	RHS HX Vent Inboard IVs	12	RM	NA
2RHS*MOV27 A,B(c)(o)	RHS HX Vent Outboard IVs	12	RM	NA
2SLS*MOV5 A,B(g)	SLS to RPV Outside IV	12	RM	NA

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
C. Manual				
2SAS*HCV160	SAS to Drywell Outside IV			
2SAS*HCV161	SAS to Drywell Outside IV			
2SAS*HCV162	SAS to Drywell Inside IV			
2SAS*HCV163	SAS to Drywell Inside IV			
2AAS*HCV134	AAS to Drywell Outside IV			
2AAS*HCV135	AAS to Drywell Outside IV			
2AAS*HCV136	AAS to Drywell Inside IV			
2AAS*HCV137	AAS to Drywell Inside IV			
2RHS*V192	RCIC/RHS Vacuum Breaker Outside IV			
2SFC*V203	Inner Refuel Seal Leakoff Outboard IV			
2SFC*V204	Inner Refuel Seal Leakoff Inboard IV			
D. Other				
Safety Relief				
2RHS*RV20 A,B,C(d)	RHS RV Disch. to SP Outside IVs			
2RHS*RV61 A,B,C(d)	RHS RV Disch. to SP Outside IVs			
2RHS*RV108(d)	RHS RV Disch. to SP Outside IVs			
2RHS*RV110(d)	SDC to RHS Pump Suction RV			
2RHS*RV139(d)	RHR Hdr. Flush to Radwaste RV			
2RHS*RV152(n)	SDC Supply from RCS RV Inside IV			
2RHS*RV56 A,B(d)	RHS HX Shell Side RVs			
2RHS*SV34 A,B(d)	RHS HX Steam Supply Safety Valves			
2RHS*SV62 A,B(d)	RHS HX Steam Supply Safety Valves			
2RHS*RVV35 A,B(d)	RHS Vacuum Breakers			
2CSL*RV105(d)	CSL RV Disch. to SP Outside IV			
2CSL*RV123(d)	CSL RV Disch. to SP Outside IV			

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
2RHS*RVV36 A,B(d)	RHS Vacuum Breakers			
2CCP*RV170(n) 2CCP*RV171(n)	CCP RV Discharge Inside IV CCP RV Discharge Inside IV			
2CSH*RV113(d) 2CSH*RV114(d)	CSH RV Disch. to SP Outside IV CSH RV Disch. to SP Outside IV			
2RHS*RV57A,B(r)	Outside IV Bonnet Pressure Relief			
Check Valves				
2RHS*AOV16 A,B,C(h) 2RHS*AOV39 A,B(h)	RHS/LPCI to RPV Inside IVs SDC to RCS Inside IVs			
2CPS*V50 2CPS*V51	Nitrogen Supply to CPS*AOV107 Inside IV Nitrogen Supply to CPS*AOV109 Inside IV			
2CSH*AOV108(h) 2CSL*AOV101(h)	CSH to RPV Inside IV CSL to RPV Inside IV			
2ICS*AOV156(h) 2ICS*AOV157(h)	ICS to RPV Outside IV ICS to RPV Inside IV			
2SLS*V10	SLS to RPV Inside IV			
2GSN*V170	N_2 Purge to Tip Index Mech. Inside IV			
2IAS*V448 2IAS*V449	IAS to ADS Accumulators Inside IV IAS to ADS Accumulators Inside IV			
2RCS*V59 A,B 2RCS*V60 A,B 2RCS*V90 A,B	RDS to RCS Pumps A and B Seals Outside IVs RDS to RCS Pumps A and B Seals Inside IVs RDS to RCS Pumps A and B Seals Outside IVs			

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
2RHS*V19(d)(f)	Discharge Check from RCIC to Supp. Pool			
2RHS*V20(d)(f)	Discharge Check from RCIC to Supp. Pool			
2RHS*V117(d)(f)	Check Valve from RCIC Drain to Supp. Pool			
2RHS*V118(d)(f)	Check Valve from RCIC Drain to Supp. Pool			
2FWS*AOV23 A,B(h)	Feedwater to RPV Outside IVs			
2FWS*V12 A,B	Feedwater to RPV Inside IVs			
Excess Flow Check(e) Reactor Instrumentation Lines				
2ISC*EFV1	Inst. Line from MSS			
2ISC*EFV2	Inst. Line from N14, 200°			
2ISC*EFV3	Inst. Line from N14, 160°			
2ISC*EFV4	Inst. Line from N13, 190°			
2ISC*EFV5	Inst. Line from N14, 20°			
2ISC*EFV6	Inst. Line from N14, 340°			
2ISC*EFV7	Inst. Line from N13, 10°			
2ISC*EFV8	Inst. Line from N12, 160°			
2ISC*EFV10	Inst. Line from N12, 200°			
2ISC*EFV11	To 2ISC*FT47K,FT48B			
2ISC*EFV13	To 2ISC*FT47H			
2ISC*EFV14	Vessel Bottom Tap, Loop A Jet Pump			
2ISC*EFV15	Inst. Line from N12, 340°			
2ISC*EFV17	Inst. Line from N12, 20°			
2ISC*EFV18	To 2ISC*FT47J,FT48A			
2ISC*EFV20	To 2ISC*FT47E			
2ISC*EFV21	Vessel Bottom Tap for CSH, RDS			
2ISC*EFV22	Vessel Bottom Tap for WCS and Loop B J.P.			
2ISC*EFV23	To 2ISC*FT48C and Postaccident Sampling			
2ISC*EFV24	To 2ISC*FT48D and Postaccident Sampling			
2ISC*EFV25	To 2ISC*FT47L			
2ISC*EFV26	To 2ISC*FT47C			

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
2ISC*EFV27	To 2ISC*FT47A			
2ISC*EFV28	To 2ISC*FT47R			
2ISC*EFV29	To 2ISC*FT47G			
2ISC*EFV30	To 2ISC*FT47N			
2ISC*EFV31	To 2ISC*FT48A			
2ISC*EFV32	To 2ISC*FT47T			
2ISC*EFV33	To 2ISC*FT47V,FT48C			
2ISC*EFV34	To 2ISC*FT47B			
2ISC*EFV35	To 2ISC*FT47D			
2ISC*EFV36	To 2ISC*FT47F			
2ISC*EFV37	To 2ISC*FT47S			
2ISC*EFV38	To 2ISC*FT47M			
2ISC*EFV39	To 2ISC*FT47P			
2ISC*EFV40	To 2ISC*FT48B			
2ISC*EFV41	To 2ISC*FT47U			
2ISC*EFV42	To 2ISC*FT47W,FT48D			
2ISC*EFV9	Containment Pressure 2ISC*PT15C,16B,16D			
2ISC*EFV12	Containment Pressure 2ISC*PT15B,17B,17D			
2ISC*EFV16	Containment Pressure 2ISC*PT15A,16A,16C			
2ISC*EFV19	Containment Pressure 2ISC*PT15D,17A,17C			
2CMS*EFV1A	To CMS*PT1A			
2CMS*EFV1B	To CMS*PT1B			
2CMS*EFV3A	To CMS*PT2A			
2CMS*EFV3B	To CMS*PT2B			
2CMS*EFV5A	To CMS*PT7A			
2CMS*EFV5B	To CMS*PT7B			
2CMS*EFV6	To CMS-PT168			
2CMS*EFV8A	To CMS*LT9A,11A,114			
2CMS*EFV8B	To CMS*LT9B,11B,105			
2CMS*EFV9A	To CMS*LT9A,11A,114			
2CMS*EFV9B	To CMS*LT9B,11B,105			
2CMS*EFV10	To CMS-PI173			

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
2ICS*EFV1	To 2ICS*PDT167			
2ICS*EFV2	To 2ICS*PDT167			
2DER*EFV31	To DER*PT134			
2ICS*EFV3	To 2ICS*PDT168			
2ICS*EFV4	To 2ICS*PDT168			
2IAS*EFV200	To 2IAS*PT230 off ADS Accum.			
2IAS*EFV201	To 2IAS*PT231 off ADS Accum.			
2IAS*EFV202	To 2IAS*PT232 off ADS Accum.			
2IAS*EFV203	To 2IAS*PT235 off ADS Accum.			
2IAS*EFV204	To 2IAS*PT234 off ADS Accum.			
2IAS*EFV205	To 2IAS*PT233 off ADS Accum.			
2IAS*EFV206	To 2IAS*PT236 off ADS Accum.			
2RHS*EFV 5,6	To 2RHS*PDT18B			
2RHS*EFV7	To 2RHS*PDT18A			
2MSS*EFV 1A,B,C,D	To Flow Elements A,B,C,D Steamlines			
2MSS*EFV 2A,B,C,D	To Flow Elements A,B,C,D Steamlines			
2MSS*EFV 3A,B,C,D	To Flow Elements A,B,C,D Steamlines			
2MSS*EFV 4A,B,C,D	To Flow Elements A,B,C,D Steamlines			
2RCS*EFV44 A,B	To 2RCS*PT 84 A/B			
2RCS*EFV45 A,B	To 2RCS*FT 7A/B, FT 9 A/B			
2RCS*EFV46 A,B	To 2RCS*FT 7A/B, FT 9 A/B			
2RCS*EFV47 A,B	To 2RCS*FT 6A/B, FT 8 A/B			
2RCS*EFV48 A,B	To 2RCS*FT 6A/B, FT 8 A/B			
2RCS*EFV52 A,B	To 2RCS*PDT 15 A/B			
2RCS*EFV53 A,B	To 2RCS*PDT 15 A/B			
2RCS*EFV62 A,B	To 2RCS*PT44 A/B			
2RCS*EFV63 A,B	To 2RCS*PT42 A/B			

ISOLATION VALVE NO.	VALVE FUNCTION	VALVE GROUP	ISOLATION SIGNAL (a)	MAXIMUM CLOSING TIME (SECONDS)(p)
2WCS*EFV221	To 2WCS-FT 134			
2WCS*EFV222	To 2WCS*FT67X, PDS 115			
2WCS*EFV223	To 2WCS*FT67Y			
2WCS*EFV224	To 2WCS*FT67Y			
2WCS*EFV300	To 2WCS*FT67X, PDS 115			
2CSH*EFV1	To 2CSH*LT123, LT124			
2CSH*EFV2	To 2CSH*LT123, LT124			
2CSH*EFV3	To 2CSH*PDT109			
2CSL*EFV1	To 2CSL*PDT132 and 2RHS*PDT18A			

Table Notations

* Isolates on injection signal, not primary containment isolation signal.

(a) See Technical Specification 3.3.2, Table 3.3.2-4, for valve groups operated by isolation signal(s).

(b) Deleted

(c) These valves are the RHR heat exchangers vent lines isolation valves. The vent line connects to the RHR safety relief valves (SRVs) discharge header before it penetrates the primary containment. The position indicators for these valves are provided in the Control Room for remote manual isolation.

(d) Type C leakage tests not required.

(e) The associated instrument lines shall not be isolated during Type A testing. Type C testing is not required. These valves shall be tested in accordance with Tech. Spec. Surveillance Requirement 4.6.3.4.

(f) These valves are check valves, located in the vacuum breaker lines for RHR SRVs discharge headers. The SRV discharge header terminates under pool water and therefore has no containment isolation valves other than those on lines feeding into it.

(g) 2SLS*MOV5A and B are globe stop check valves. These valves close upon reverse flow. The motor operator is provided to remote manually close the valve from the Control Room.

(h) These valves are testable check valves. They close upon reverse flow. The air operator on each valve is provided only for periodic testing of the valve. These valves can only be tested against a zero d/p.

(i) Valves are maintained closed. The FPW lines are capped. Valves are Type C tested.

(j) Not primary containment isolation valves. These valves close on an isolation signal to provide integrity of "A" and "B" LPCI loops.

(k) Valves close on a SCRAM signal; not part of primary containment isolation system but are included here for Type C testing per Technical Specification 3.6.1.2. These valves are not required to be OPERABLE per this specification but are required to be OPERABLE per Technical Specification 3.1.3.1.

(ℓ) Not subject to Type A or Type C leak test because of constant monitoring under constant 1800 psig pressure and the possible detrimental effects of shutdown.

Table Notations (Cont)

(m) These valves are leak tested once every two years in compliance with ASME Sec. XI test frequency requirements. The Leakage Acceptance Criteria is 10 gpm per valve for 2RHS*MOV142 and MOV149 (Ref. Engineering Calc. Nos. H21C-038-01C and A10.1-E-130, and SE No. 95-077, Rev. 0).

(n) These valves are Type C tested and may be tested in the reverse direction.

(o) Isolation barrier remains waterfilled post-LOCA. Isolation valve is tested with water in accordance with Technical Specification 4.6.1.2.3.

(p) The maximum isolation times for primary containment automatic isolation valves listed in this procedure are either the analytical times used in the accident analysis as described in the USAR; or times derived by applying margins to the vendor test data obtained in accordance with industry codes and standards or the GL 89-10 calculated time. For non-analytical automatic primary containment isolation valves, the maximum isolation time is derived as follows:

1. Valves with full stroke times less than or equal to 10 seconds, maximum isolation time approximately equals the vendor tested closure time or the GL 89-10 calculated time multiplied by 2.0.

2. Valves with full stroke times greater than 10 seconds, maximum isolation time approximately equals the vendor tested closure time or the GL 89-10 calculated time multiplied by 1.5.

3. Valve closing times do not include isolation instrumentation response time.

(q) These valves are leak tested and may be tested by pressurizing between the seats. Reference UFSAR Table 6.2-65.

(r) Relief Valves are Type C tested as part of 2RHS*MOV15A,B assembly.

SURVEILLANCE REQUIREMENTS

4.6.1.2.1 The primary containment leakage rates shall be demonstrated at test schedules and in conformance with the criteria specified in the 10 CFR 50 Appendix J Testing Program Plan as described in Section 6.8.4.f.

4.6.1.2.2 Main steam line isolation valves and the remainder of the valves specified in Table 3.6.1.2-1 shall be leak tested in accordance with the 10 CFR 50 Appendix J Testing Program Plan as described in Section 6.8.4.f at a test pressure of at least 40 psig with air or nitrogen to demonstrate that each valve satisfies the leakage limits specified in Table 3.6.1.2-1.

4.6.1.2.3 Containment isolation valves in hydrostatically tested lines which penetrate the primary containment shall be leak tested in accordance with the 10 CFR 50 Appendix J Testing Program Plan as described in Section 6.8.4.f at a test pressure of at least 1.10 Pa, 43.73 psig.

4.6.1.2.4 The provisions of Specification 4.0.2 are not applicable to Surveillance Requirements 4.6.1.2.1, 4.6.1.2.2, and 4.6.1.2.3.

TABLE 3.6.1.2-1

ALLOWABLE LEAK RATES THROUGH VALVES IN POTENTIAL BYPASS LEAKAGE PATHS

LINE DESCRIPTION	VALVE MARK NO	TERMINATION REGION	PER VALVE LEAK RATE, SCFH
4 Main Steam Lines	2MSS*AOV6A, B, C, D 2MSS*AOV7A, B, C, D	Turbine Bldg.	24.0
Main Steam Drain Line (Inboard)	2MSS*MOV111, 112	Turbine Bldg.	1.875
Main Steam Drain Line (Outboard)	2MSS*MOV208	Turbine Bldg.	0.625
4 Postaccident Sampling Lines	2CMS*SOV77A, B 2CMS*SOV74A, B 2CMS*SOV75A, B 2CMS*SOV76A, B	Radwaste Tunnel	0.2344
Drywell Equipment Drain Line	2DER*MOV119 2DER*MOV120	Radwaste Tunnel	1.25
Drywell Equipment Vent Line	2DER*MOV130 2DER*MOV131	Radwaste Tunnel	0.625
Drywell Floor Drain Line	2DFR*MOV120 2DFR*MOV121	Radwaste Tunnel	1.875
Drywell Floor Vent Line	2DFR*MOV139 2DFR*MOV140	Radwaste Tunnel	0.9375
RWCU Line	2WCS*MOV102 2WCS*MOV112	Turbine Bldg.	2.5
Feedwater Line	2FWS*AOV23A 2FWS*V12A 2FWS*AOV23B 2FWS*V12B	Turbine Bldg.	12.0
CPS Supply Line to Drywell	2CPS*AOV104 2CPS*AOV106	Standby Gas Trtmt. Area	4.38
CPS Supply Line to Drywell	2CPS*SOV120 2CPS*SOV122	Standby Gas Trtmt. Area	0.625
CPS Supply Line to Supp. Chamber	2CPS*AOV105 2CPS*AOV107	Standby Gas Trtmt. Area	3.75
CPS Supply Line to Supp. Chamber	2CPS*SOV119 2CPS*SOV121	Standby Gas Trtmt. Area	0.625

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test 2
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Monitoring
Question Number:	1

Question:

During an ATWS, an auxiliary operator must be dispatched to the HCUs to vent CRDM overpiston areas. No Emergency Action Level classifications have been made. What actions must be taken to assure ALARA requirements are met?

Answer:

- If available, RP Tech continuously monitors work
- RWP, Radiation Survey Log sheets, RWP sign-in logs, documentation is processed.
- Post-job ALARA Job review.
- Need for generation of a DER is evaluated.

Technical Reference(s):

GAP-RPP-02, Rev. 05, Section 3.2.1
N2-EOP-6, Section 12.0
S-RAP-ALA-0102, Section 3.5.1
NIP-ECA-01, Section 1.1.1.f

K/A #:	Importance:
2.3.2	2.9

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

GENERATION ADMINISTRATIVE PROCEDURE

GAP-RPP-02

REVISION 05

RADIATION WORK PERMIT

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

Plant Manager - Unit 1

2/2/99
Date

Approved by:
N. C. Paleologos

Plant Manager - Unit 2

2-3-99
Date

THIS IS A FULL REVISION

Effective Date: 02/11/99

3.1.1 (Cont)

conditions) from the RWP requirement with RP supervision approval. There are three types of RWPs:

a. General RWP - For personnel access to RCA for general tours, supervisory oversight, inspections, or RP approved work in areas not posted as a Radiation Area or Contaminated Area.

b. Standing RWP - For routine or repetitive work functions.

c. Specific RWP - For performance of a job in locations where the work may affect or change the radiological conditions and any work, or any other condition beyond the scope of a Standing RWP, as determined by RP.

3.1.2 Depending on the planned scope of work, qualifications of personnel performing the work, and radiological conditions of the work area, RP may specify the use of a General, Standing or Specific RWP.

3.2 Emergency Response Radiation Work Permit

3.2.1 To prevent delays during an emergency, RWP processing may be modified as directed by the Station Shift Supervisor (SSS) or Supervisor RP Operations, or designee, provided:

a. Required work is continuously monitored by RP technicians.

b. At the conclusion of the emergency condition, a RWP, Radiation Survey Log Sheet(s), RWP Sign-In Logs, and other documentation are initiated and processed.

c. A post-job ALARA review is issued per GAP-ALA-01 to evaluate actions taken and resultant personnel exposure.

d. Generation of a DER to document the event is considered.

3.3 Use of General Radiation Work Permit

3.3.1 Personnel shall adhere to the following limitations for General RWPs:

a. Access to posted Radiation Areas is permitted for passage and short duration inspection/observation activities only. Loitering is prohibited.

b. Entry into areas requiring a specific RWP is prohibited without signing or logging in on an appropriate specific RWP.

c. The daily exposure guide specified on the RWP shall not be exceeded.

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT 2

EMERGENCY OPERATING PROCEDURE

N2-EOP-6

REVISION 05

NMP2 EOP SUPPORT PROCEDURE

TECHNICAL SPECIFICATION REQUIRED

Approved by:
D. P. Bosnic

D P Bosnic
Manager Operations - Unit 2

12/22/98
Date

THIS IS A FULL REVISION

Effective Date: 12/31/1998

PERIODIC REVIEW DUE DATE DECEMBER, 2000

C. PRECAUTIONS AND LIMITATIONS (Cont)

4.0 When using the Attachments, the operator shall place a "check" opposite each step as it is completed.

5.0 Changes to these attachments should not be made (including step numbering) except in an emergency, without review by the EOP Coordinator and Manager-Unit 2 Operations or General Supervisor-Unit 2 Operations, as required per N2-ODP-PRO-0301.

6.0 If a procedure step can not be performed as written, the EOP Director shall be notified immediately.

7.0 The Restoration section of an Attachment shall be performed only when directed by the SSS/EOP Director.

8.0 All tools, materials, keys, etc. that are required to perform the Attachment will listed in Section 2 of each attachment.

9.0 An (T) notation in the left margin adjacent to a step number or note indicates that a tool or material is required for performance.

10.0 Common tools (screwdrivers, tape etc.) will not be specified in the procedure step. Only special tools or situations where confusion may result will have a particular tool specified in a step or note.

11.0 Independent verification is required in the Restoration section when restoring temporary alterations or returning permanent plant equipment to normal status. This verification may be delayed if emergency conditions still exist, and it is imperative that restoration be completed immediately. The EOP Director/SSS permission is required to delay independent verification.

12.0 During plant conditions which require implementation of these procedures, environmental conditions may be potentially extreme (temperature, radiation, water levels).

In many cases this will require coordination and support from the OSC. Where access is required in areas of elevated temperatures, prudency dictates protective equipment be used and precautions taken. Stay times and activity levels should be minimized.

Consultation with the Safety Department Or Site Hygienist is recommended when possible. Above 135° F personnel access may be significantly hampered.

When it is anticipated or known that radiation levels are elevated, radiation protection assistance should be sought. Some evolutions may require utilization of emergency exposure guidelines or emergency dosimetry in accordance with EPP-15.

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

RADIATION PROTECTION ADMINISTRATIVE PROCEDURE

S-RAP-ALA-0102

REVISION 04

ALARA REVIEWS

Approved by:
V. Schuman

Manager Radiation Protection - Unit 1 — Date: 14-Jan-99

Approved by:
D. W. Barcomb

Manager Radiation Protection - Unit 2 — Date: 1-15-99

THIS IS A FULL REVISION

Effective Date: 02/02/99

3.5 Post-Job ALARA Review

3.5.1 Post job ALARA reviews should be conducted:

a. On jobs where actual exposure is greater than 5 man-rem or when a pre job review has been waived for an emergency condition.

b. When determined necessary by the job supervisor or RP supervision.

3.5.2 Post-job reviews should consist of the following:

a. A comparison of the estimated and actual man-hours and man-rem for the job.

b. Identification of the successes and problems encountered during the performance of the job.

c. Identification of improvements which can be incorporated into future work.

d. An evaluation of the workers and RP personnel comments on the job using the ALARA Post-Job Questionnaire, Attachment 9, or obtained during personnel interviews.

e. An evaluation of airborne radioactivity/internal dose.

3.5.3 The completed post-job review should be submitted for review and approval based on the man-rem for the job. Suggested criteria is listed in Attachment 1.

3.5.4 The Post-job review should be maintained in the job history files.

3.6 Revising ALARA Reviews

3.6.1 ALARA reviews should be revised when new tasks are added to the RWP or ALARA requirements have changed.

NOTE: The Unit ALARA Lead/Designee will determine when a change(s) to a pre-job ALARA review requires:

- A new rev number to be assigned
- Rerouting for signature approvals

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION

NUCLEAR INTERFACE PROCEDURE

NIP-ECA-01

REVISION 16

DEVIATION/EVENT REPORT

TECHNICAL SPECIFICATION REQUIRED

Approved by:

J.T. Conway
Vice President Nuclear Generation

4/28/99
Date

THIS PROCEDURE SUPERSEDES QAP-ECA-15.02 AND QAP-ECA-16.20

Effective Date: 04/30/1999

1.0 PURPOSE

To prescribe the method for processing Deviation/Event Reports (DERs) for the identification, documentation, notification, evaluation, correction, prevention, trending, and reporting of conditions, events, activities, and concerns that have the potential for affecting the safe and reliable operation of the Nuclear Stations at Nine Mile Point.

1.1 (C1) Applicability

This procedure applies to Nuclear SBU personnel addressing events, conditions, or activities adverse to quality that may impact Nine Mile Point including:

1.1.1 Conditions or abnormal occurrences having an adverse or potentially adverse effect on activities important to nuclear safety, industrial safety, plant reliability, or human performance, including, but not limited to:

a. Hardware failures other than normal wear and tear

b. Hardware or component malfunctions resulting from design or manufacturing deviations or defects

c. Out-of-calibration measuring and test equipment known to have adversely or potentially adversely affected other plant equipment

d. Non-compliances having nuclear safety significance

e. Adverse personnel performance such as failure to follow procedures or violations of personnel safety rules or practices

f. Radiation Protection deviations

g. Preventive maintenance activities not completed before late date or deferred date

h. Recurring corrective maintenance/hardware failures, or structures systems or components exceeding their performance criteria described in the Maintenance Rule Program.

i. Human performance problems/issues

j. Inadequate corrective actions

k. Test failures

ℓ. Deviations from design document requirements (other than normal wear and tear) including station configuration discrepancies, such as USAR discrepancies

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test 2
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Monitoring
Question Number:	2

Question:

While at 100% power, a failure of the Digital Control System communication link to the Digital Radiation Monitoring System (DRMS) results in the loss of all control room annunciation associated with DRMS. NO liquid radwaste discharge is in progress.

What are the Technical Specification restrictions on plant operation?

Answer:

With their control room alarm function lost, the following radiation monitors are inoperable:
(1) 2CWS-CAB157, T.S. 3.3.7.9-1, Function 2.c, Action 130
(2) 2LWS-CAB206, T.S. 3.3.3.9-1, Function 1, Action 128
(3) 2OFG-CAB13A/123B, T.S. 3.3.7.10-1, Function 1.a, Action 135

Cooling tower blowdown line effluent:

- Since a release is in progress, the release may continue provided that grab samples are collected and analyzed at least once per 12 hours.

Liquid radwaste effluent:

- Since no release is in progress, prohibit any release via this pathway until the monitor is restored to OPERABLE.

Offgas system effluent:

- Since a release is in progress, the release may continue provided grab samples are taken at least once per 12 hours and the samples are analyzed for gross activity within 24 hours.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test 2
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Monitoring
Question Number:	2

Technical Reference(s):
N2-OP-79, Section H.2 T.S. 3.3.7.9-1, F2.c, Action 130 T.S. 3.3.3.9-1, F1, Action 128 T.S. 3.3.7.10-1, F1.a, Action 135

K/A #:	Importance:
2.3.11, 2.1.33, 2.1.12	3.2, 4.0, 4.0

Comments:

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION UNIT 2

OPERATING PROCEDURE

N2-OP-79

REVISION 07

RADIATION MONITORING

TECHNICAL SPECIFICATION REQUIRED

Approved by:
R. G. Smith

R G Smith
Manager Operations - Unit 2

3/12/97
Date

THIS IS A FULL REVISION

PERIODIC REVIEW, 03/05/99, NO CHANGE

Effective Date: 03/20/97

PERIODIC REVIEW DUE DATE MARCH 2001

H. OFF-NORMAL PROCEDURE

1.0 DRMS ALARM RESPONSE

NOTE: Use of the DRMS Console SET ALARM OFF pushbutton will silence existing console alarms and any other console alarms until the ACK OLDEST ALARM pushbutton is depressed, this could result in missed alarms and unknown degradation of plant conditions.

1.1 DRMS console alarms are to be acknowledged by use of the OLDEST ALARM ACK button only.

1.2 DRMS alarm response is the responsibility of the Control Room Operator. All unexpected alarms will be acknowledged from the Control Room.

1.3 Day to day operation AND maintenance of the system is the responsibility of the Radiation Protection Department. Routine expected alarms may be acknowledged by Radiation Protection Technicians.

2.0 Loss of DCS/Loss of Communication with the DCS

NOTES: 1. If the Digital Control System communication link is lost, there will be no control room annunciation associated with DRMS. Safety related monitors (1-E monitors), equipment failure and alarm status will only be available at 2CEC*PNL880A, B, C and D or at each individual monitors' microprocessor. All trip/ isolation functions will occur independent of DCS communication.

1-E Monitors:
2CMS*RE10A 2HVC*RE18A 2SWP*RE146A
2CMS*RE10B 2HVC*RE18B 2SWP*RE146B
2HVR*RE14A 2HVC*RE18C 2RMS*RE1A
2HVR*RE14B 2HVC*RE18D 2RMS*RE1B
2HVR*RE32A 2SWP*RE23A 2RMS*RE1C
2HVR*RE32B 2SWP*RE23B 2RMS*RE1D

2. The following radiation monitors are considered inoperable due to loss of Control Room alarm functions:

2CWS-CAB157 - Technical Specification 3.3.7..9-1 2.c ACTION 130

2LWS-CAB206 - Technical Specification 3.3.7..9-1 1. ACTION 128

2OFG-CAB13A/13B- Technical Specification 3.3.7.10-1 1.a ACTION 135

INSTRUMENTATION

MONITORING INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.3.7.9 The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3.7.9-1 shall be OPERABLE with their Alarm/Trip Setpoints set to ensure that the limits of Specification 3.11.1.1 are not exceeded. The Alarm/Trip Setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the OFFSITE DOSE CALCULATION MANUAL (ODCM).

APPLICABILITY: During releases via this pathway.

ACTION:

a. With a radioactive liquid effluent monitoring instrumentation channel Alarm/Trip Setpoint less conservative than required by the above specification, immediately suspend the release of radioactive liquid effluents monitored by the affected channel, or declare the channel inoperable, or change the setpoint so it is acceptably conservative.

b. With the number of channels OPERABLE less than the Minimum Channels OPERABLE requirement, take the ACTION shown in Table 3.3.7.9-1. Restore the instruments to OPERABLE status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.9 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST at the frequencies shown in Table 4.3.7.9-1.

TABLE 3.3.7.9-1

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1. Radioactivity Monitors Providing Alarm and Automatic Termination of Release		
Liquid Radwaste Effluent Line	1	128
2. Radioactivity Monitors Providing Alarm But Not Providing Automatic Termination of Release		
a. Service Water Effluent Line A	1	130
b. Service Water Effluent Line B	1	130
c. Cooling Tower Blowdown Line	1	130
3. Flow Rate Measurement Devices		
a. Liquid Radwaste Effluent Line	1	131
b. Service Water Effluent Line A	1	131
c. Service Water Effluent Line B	1	131
d. Cooling Tower Blowdown Line	1	131
4. Tank Level Indicating Devices*	1	132

* Tanks included in this specification are those outdoor tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system, such as temporary tanks.

TABLE 3.3.7.9-1 (Continued)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

TABLE NOTATIONS

ACTION 128 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue provided that before initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.1, and

b. At least two technically qualified members of the facility staff independently verify the release rate calculations and discharge line valving;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 129 - Not used.

ACTION 130 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that, at least once per 12 hours, grab samples are collected and analyzed for radioactivity at a limit of detection of at least 5×10^{-7} microcuries/ml.

ACTION 131 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided the flow rate is estimated at least once per 4 hours during actual releases. Pump performance curves generated in place may be used to estimate flow.

ACTION 132 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, liquid additions to this tank may continue provided the tank liquid level is estimated during all liquid additions to the tank.

TABLE 4.3.7.9-1

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. Radioactivity Monitors Providing Alarm and Automatic Termination of Release				
Liquid Radwaste Effluent Line	D	P	R(c)	M(a)(b)
2. Radioactivity Monitors Providing Alarm But Not Providing Automatic Termination of Release				
a. Service Water Effluent Line A	D	M	R(c)	SA(b)
b. Service Water Effluent Line B	D	M	R(c)	SA(b)
c. Cooling Tower Blowdown Line	D	M	R(c)	SA(b)
3. Flow Rate Measurement Devices				
a. Liquid Radwaste Effluent Line	D(d)	NA	R	Q
b. Service Water Effluent Line A	D(d)	NA	R	Q
c. Service Water Effluent Line B	D(d)	NA	R	Q
d. Cooling Tower Blowdown Line	D(d)	NA	R	Q
4. Tank Level Indicating Devices*	D**	NA	R	Q

* Tanks included in this specification are those outdoor tanks that are not surrounded by liners, dikes, or wall capable of holding the tank contents and do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system, such as temporary tanks.

** During liquid additions to the tank.

TABLE 4.3.7.9-1 (Continued)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TABLE NOTATIONS

(a) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if the instrument indicates measured levels above the Alarm/Trip Setpoint.

(b) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:

(1) Instrument indicates measured levels above the Alarm Setpoint, or
(2) Circuit failure, or
(3) Instrument indicates a downscale failure, or
(4) Instrument controls not set in operate mode.

(c) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards, standards that are traceable to the National Bureau of Standards, or using actual samples of liquid effluents that have been analyzed on a system that has been calibrated with National Bureau of Standards traceable sources. These standards shall permit calibrating the system over its intended range of energy and measurement. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration may be used.

(d) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once per 24 hours on days on which continuous, periodic, or batch releases are made.

INSTRUMENTATION

MONITORING INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.3.7.10 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3.7.10-1 shall be OPERABLE with their Alarm/Trip Setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The Alarm/Trip Setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.

APPLICABILITY: As shown in Table 3.3.7.10-1.

ACTION:

a. With a radioactive gaseous effluent monitoring instrumentation channel Alarm/Trip Setpoint less conservative than required by the above specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel, or declare the channel inoperable, or change the setpoint so it is acceptably conservative.

b. With the number of channels OPERABLE less than the Minimum Channels OPERABLE requirement, take the ACTION shown in Table 3.3.7.10-1. Restore the instruments to OPERABLE status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.10 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3.7.10-1.

TABLE 3.3.7.2-1

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1. Offgas System			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release	2	*	135
b. System Flow-Rate Measuring Device	1	*	136
c. Sample Flow-Rate Measuring Device	2	*	136
2. Offgas System Explosive Gas Monitoring System**			
a. Hydrogen Monitor Train A (Instrument 20FG-AT-16A or 20FG-AT-115)	1	*	137
b. Hydrogen Monitor Train B (Instrument 20FG-AT-16B or 20FG-AT-115)	1	*	137
3. Radwaste/Reactor Building Vent Effluent System			
a. Noble Gas Activity Monitor†	1	††	139
b. Iodine Sampler	1	††	138
c. Particulate Sampler	1	††	138
d. Flow-Rate Monitor	1	††	136
e. Sample Flow-Rate Monitor	1	††	136
4. Main Stack Effluent			
a. Noble Gas Activity Monitor†	1	††	139
b. Iodine Sampler	1	††	138
c. Particulate Sampler	1	††	138
d. Flow-Rate Monitor	1	††	136
e. Sample Flow-Rate Monitor	1	††	136

TABLE 3.3.7.10-1 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

TABLE NOTATIONS

* During offgas system operation.

** Only one train required to be in operation.

† Includes high range noble gas monitoring capability.

†† At all times.

ACTIONS

ACTION 135 - a. With the number of OPERABLE channels one less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the inoperable channel is placed in the tripped condition within 12 hours.

b. With the number of OPERABLE channels two less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are taken at least once per 12 hours and these samples are analyzed for gross activity within 24 hours.

ACTION 136 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate for the inoperable channel(s) is estimated at least once per 4 hours.

ACTION 137 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the offgas system may continue provided grab samples are collected at least once per 4 hours and analyzed within the following 4 hours.

ACTION 138 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided samples are continuously collected starting within 8 hours of discovery, using auxiliary sampling equipment as required in Table 4.11.2-1.

ACTION 139 - a. With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are taken at least once per 12 hours and these samples are analyzed for gross activity within 24 hours for a radioactivity limit of detection of at least 1×10^{-4} microcurie/ml.

b. Restore the inoperable channel(s) to OPERABLE status within 72 hours or in lieu of another report required by Specification 6.9.1, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the schedule for restoring the system to OPERABLE status.

TABLE 7.10-1

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. Offgas System					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release	D	NA	R(a,e)	M(b,c)	**
b. System Flow-Rate Measuring Device	D	NA	R	Q	**
c. Sample Flow-Rate Measuring Device		NA	R	Q	**
2. Offgas System Explosive Gas Monitoring System					
a. Hydrogen Monitor Train A	D	NA	Q(d)	M	**
b. Hydrogen Monitor Train B	D	NA	Q(d)	M	**
3. Radwaste/Reactor Building Vent Effluent System					
a. Noble Gas Activity Monitor †	D	M	R(a)	Q(c)	*
b. Iodine Sampler	W	NA	NA	NA	*
c. Particulate Sampler	W	NA	NA	NA	*
d. Flow-Rate Monitor	D	NA	R	Q	*
e. Sample Flow-Rate Monitor	D	NA	R	Q	*

TABLE 4.3.7.1 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
14. Main Stack Effluent					
a. Noble Gas Activity Monitor †	D	M	R(a)	Q(c)	*
b. Iodine Sampler	W	NA	NA	NA	*
c. Particulate Sampler	W	NA	NA	NA	*
d. Flow-Rate Monitor	D	NA	R	Q	*
e. Sample Flow-Rate Monitor	D	NA	R	Q	*