

NMP2 REQUALIFICATION PROGRAM ACTION PLAN

JUNE 1990

REVISION 3

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NMP2 REQUALIFICATION PROGRAM ACTION PLAN

The Nine Mile Point Unit 2 Operations and Operations Training Departments |3
underwent an evaluation of individual performances and of the requalification |
program during the weeks of July 17 and July 24, 1989. During this
evaluation, 10 of 24 licensed operators failed one or more sections of the
examination. In addition, 1/2 the crews (3 of 6) exhibited sufficient
deficiencies to warrant failure as teams by the Nine Mile Point Unit 2
evaluators. Based on this evaluation, Nine Mile Point Unit 2 implemented an |3
Action Plan to correct these deficiencies.

Our initial evaluation of the program revealed the specific issues discussed
below. In addition, Niagara Mohawk has completed an independent assessment of
the Unit 2 Requalification Program and has identified the underlying root
causes for these weaknesses. The Assessment Team recommended that four (4)
additional actions contained in the report recommendations be included in the
Unit 2 Requalification Action Plan. They further stated that nine (9)
additional recommendations be seriously considered by NMPC. The four (4)
subject actions are included on page 5 and 6 of the attached corrective action |3
list. Item 1.C.5 of the attached Requal Action Plan, which required NMPC to |
evaluate the remaining nine (9) recommendations, has been completed. Each of |
these recommendations has been evaluated and entered into the Nuclear Training |
Center Internal Tracking System as appropriate. |

A follow up assessment has been conducted to review the adequacy of the |3
corrective actions taken. The six (6) recommendations from this report have |
been evaluated and entered into the Nuclear Training Center Internal Tracking |
System as appropriate for implementation. |

The specific actions contained in this document are designed to correct the
program, individual, and crew performance problems noted during the evaluation
period, with particular emphasis on those issues of examination content and
crew failures in the simulator. The specific issues include:

1. The NMP-2 Requalification Program was judged unsatisfactory by both NMPC
and NRC.



2. Evaluation of the written examination by the NMPC Instructional Technologist group raised concerns about examination structure.
3. Evaluation of the written examination by the NMP-2 Operations Instructional Group raised concerns about Operator knowledge deficiencies.
4. Weaknesses were noted in crew communications
5. STA involvement in plant assessment and event control was not consistent between crews
6. Operator actions were not always in accordance with guidance as provided in the Emergency Operating Procedures (EOP's)
7. Operator actions were not always in accordance with guidance as provided in normal operating procedures during emergency events
8. Dynamic simulator scenarios used in the evaluation were not always realistic, manageable and within the 50 minute standard as set forth in ES-601
9. Teamwork, including prioritization, of crew actions, evaluation of plant conditions and communications were weak during emergency events.



Specific Issue #1

- A. The NMP-2 Requalification Program was judged as unsatisfactory by the NMPC Training Department and the NRC, in that:
1. >25% of the licensed operators (10 of 24) failed at least one section of the examination, failing overall.
 2. >25% of the licensed operators (7 of 24) failed the written examination.
 3. >1/3 of the crews (3 of 6) failed the simulator team evaluation.

B. Corrective Actions

1. Perform an examination analysis of the written (classroom) examination.
2. Develop an exam development process description.
3. Perform an examination analysis of the simulator examination.
4. Interview operators to determine:
 - 1) Reason for high failure rate.
 - 2) Attitude concerning examination process.
5. Develop Plan and schedule for remediation and for evaluation of D Shift.
6. Conduct evaluation of D Shift.
7. Analyze the cause of exam failures and develop Action Plan to correct.

Responsibilities · Impl. Date Comp. Date

Seifried	N/A	7/29/89
Dort	N/A	7/29/89
Smith/Weimer		7/26/89
Montgomery	N/A	7/29/89
Kaminski/Cigler/ Smith	N/A	7/29/89
Weimer/Smith	N/A	8/3/89
Weimer		7/29/89



Specific Issue #1 (Cont'd):

8. Conduct an independent assessment of the NMP2 Requalification Program which will include, but not be limited to, determining:
 - a. Why NMPC (Facility Management) was not able to detect the problems with operator performance and knowledge deficiencies (including BWR Power Oscillation concerns) prior to the NRC conducting the requalification examination and the underlying reasons why the deficiencies exist
 - b. Determine whether the simulator scenarios were realistic and manageable and why NMP2 operators were not properly trained to handle complex emergency situations prioritization (Corrective Actions (9.B.10)
 - c. The extent to which organizational interface difficulties led to program deficiencies.
 - d. If there is/was an attitude problems with some operators.
 - e. Why NMPC failed to generate an examination bank of high quality written questions and simulator scenarios. (Corrective Actions 3.B.5 and 8.B.4)
 - f. Why NMPC failed to properly time-validate written examination questions and simulator scenarios. (Corrective Actions 3.B.6 and 8.B.6)

Responsibilities

Rivers

Impl. Date

9/15/89

Comp. Date

10/27/89



Specific Issue #1 (Cont'd):

- g. If the quality of the classroom/simulator training including training materials was adequately conducted during the 1988/1989 Requalification Program.
 - h. If training and evaluation adequately addressed operator knowledge/performance weaknesses.
 - i. If the NMP2 Requalification Program Action Plan adequately addresses all issues pertaining to the Requalification Program and individual operator failures.
9. a. Prepare a summary of "lessons learned" to prevent recurrence.
- b. Develop a process to ensure that lessons learned at Unit 1 (Unit 2) are communicated to Unit 2 (Unit 1).
10. Conduct a followup independent assessment to measure the effectiveness of the actions taken in this action plan.
11. Prepare a "lessons learned" transmittal to address the importance of ensuring that upper level management is aware of and agrees with major program changes.
- C. Corrective Actions/Independent Assessment Report
1. Develop an integrated plan which includes completion of the SAT Project, upgrading of training material and completion of the Examination Bank.

	<u>Responsibilities</u>	<u>Impl. Date</u>	<u>Comp. Date</u>
	Rivers/Abbott	N/A	10/29/89
	Abbott/Dahlberg	1/2/90	3/30/90
	Rivers	4/1/90	4/30/90
	Rivers/Abbott	10/1/89	11/1/89
	Seifried	N/A	10/31/89



2. Develop and implement a simulator instructor training program which incorporates Operations and Training management standards and expectations.
3. Develop, implement and commit to a schedule which will ensure that Operations and Training Management participate in the observation and evaluation of requalification training.
4. Establish a Unit #2 OTPAC and a Site Training Advisory Board (TAB).
5. Evaluate Unit 2 Independent Assessment Report recommendations 4.5 through 4.17. Incorporate those accepted into the internal training action item tracking system with the appropriate schedule for implementation.

<u>Responsibilities</u>	<u>Impl. Date</u>	<u>Comp. Date</u>
Seifried	11/2/89	3/31/90
Rivers/Willis/ Peifer	N/A	12/1/89
Abbott/Willis/ Peifer	N/A	OTPAC 10/27/89 TAB 12/8/89
Rivers/Willis Peifer	N/A	2/28/90



Specific Issue #2:

Responsibility

Impl. Date

Comp. Date

A. Evaluation of the written examination by the NMPC Instructional Technologist Group resulted in several concerns, in that;

1. Test item construction is not clear.
2. Point values for multiple part answers were not specified.
3. Several double jeopardy questions were noted.
4. Questions requiring multiple responses were not separated out.

B. Corrective Actions

1. Provide training to Operations Training Instructors involved in writing open reference examinations, on examination development techniques (i.e., test taking, test construction, and question construction).
2. Review all current examination questions contained within the requalification examination bank for format and correlation to learning objectives. Formalize this process in a Training Instruction.
3. Review all future annual requalification written examinations for format and organization prior to examination implementation. Formalize this process in a Training Instruction.
4. Formulate a plan to complete the Systematic Approach to Training Process.

LeClair

N/A

3/1/90

LeClair

1/2/90

4/30/90

LeClair

1/2/90

4/30/90

Weimer/Smith

N/A

10/31/89



Specific Issue #3:

- A. Evaluation of the written examination for knowledge area deficiencies by the NMP-2 Operations Training Group raised the following concerns, in that;
1. SRO's experienced difficulty in;
 - a. Determining the actions necessary for a loss of Stator Cooling Water when less than the runback setpoint.
 - b. Selecting the necessary response to a short period annunciator.
 - c. Determining Primary Containment Isolation Setpoints for various isolation groups.
 - d. Understanding operations of the EHC system Load Limiter Set.
 - e. Determining the capacity/limitations for operation with one Reactor Feed Pump.
 - f. Determining Limiting Plant Conditions on a loss of 2NPS-SWG003.
 - g. Determining possible scram signals as a result of a Loss of Instrument Air.
 - h. Causes and Effects of Reactor Level Swell.
 - i. Calculating single Loop MAPLHGR.
 - j. Determining Pressure response to an MSIV isolation following a reactor scram.



Specific Issue #3 (Cont'd):

2. Both SROs and ROs experienced difficulty in;
 - a. Ascertaining Operator actions on a loss of Low Pressure Feed Heater string.
 - b. Determining the actions necessary for a sympathetic alert.
 - c. Describing the EOP basis which allows for MSIV re-opening during an ATWS.
 - d. Defining the effects of Loss of Extraction Steam on Reactor Power.
 - e. Calculating total core flow when in a single loop configuration.
 - f. Ascertaining the negative response time of the Turbine Control Valves and the Turbine Control Valve Setpoint.
 - g. Determining the followup actions required following a Circulating Water Pump Trip.
3. ROs experienced difficulty in;
 - a. Determining Operator actions on a loss of RBCLC.
 - b. Ascertaining the steps necessary to override Containment Purge Valves following isolation.
 - c. Ascertaining the steps required to place CSH System in a Tank to Tank Lineup following initiation.
 - d. Determining immediate actions on a Loss of H₂ Seal Oil.



Specific Issue #3 (Cont'd):

- e. Recognizing indications of an OFG H₂ Explosion.
- f. Determining notifications required as a communications aide.
- g. Recognizing EOP entry conditions for an ATWS situation.
- h. Recognizing feedwater effects on Reactor Pressure.
- i. Describing plant response on a Loss of Vacuum.
- j. Identifying limitations placed on operation of Main Condenser Vacuum Breakers.

B. Corrective Actions

- 1. Review examination results with all licensed operators requiring remediation.
- 2. Develop a Remediation Plan for examination failures to be conducted between 8/1/89-8/15/89.
- 3. Perform re-examination of all examination failures between 8/16/89-8/18/89.
- 4. a. Include all questions where >20% of examinees missed the item into the 1990/1991 year Requalification Program Schedule.
- b. EOP weaknesses and usage deficiencies will be reviewed with all Licensed Operators (See 6.B.1, 6.B.2 and 7.B.1)
- 5. Analyze the quality of written examination questions used in the Requalification Program examinations. (See Corrective Action 1.B.8.e)
- 6. Determine why NMPC failed to properly time validate written examination questions (See Corrective Action 1.B.8.f)

Responsibility

Impl. Date

Compl. Date

<u>Responsibility</u>	<u>Impl. Date</u>	<u>Compl. Date</u>
Kaminski	N/A	7/31/89
Kaminski	N/A	7/31/89
Weimer/Smith *	8/16/89	8/18/89
Weimer	N/A	3/20/90
Weimer	8/21/89	10/6/89
Rivers	9/15/89	10/27/89
Rivers	9/15/89	10/27/89



Responsibility

Impl. Date

Comp. Date

Specific Issue #4:

A. Weaknesses were noted in crew communications, in that:

1. Operators used imprecise language
2. Directions were non specific
3. Reports/directives were not always acknowledged
4. Repeatbacks were often not noted or weak.
5. Orders were not directed at one individual, sometimes resulting in no accountability.

B. Corrective Actions

1. Train operators, in the simulator, to ODI 1.06, Verbal Communications.
2. Train instructors in ODI 1.06, Verbal Communications, and reinforce the policy to train to these standards during simulator training.
3. Develop a program by which observations will be conducted by management personnel (e.g. General Superintendent, Station Superintendent, Operations Superintendent and/or other Operations Management Staff) during each Requalification Cycle that includes simulator training. Include direction for implementing this program in a Training Department Procedure or Instruction.

Cigler

7/31/89

10/6/89

Cigler

7/31/89

8/21/89

Willis/Peifer*

8/21/89

5/14/90

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Specific Issue #4: (Cont'd)

	<u>Responsibility</u>	<u>Impl. Date</u>	<u>Comp. Date</u>	
4. Develop a program by which observations will be conducted by management personnel (e.g. Manager Nuclear Services, Superintendent of Training, Assistant Superintendent of Training and/or other Operations Training Staff) during each Requalification Cycle that includes simulator training. Include direction for implementing this program in a Training Department Procedure or Instruction.	Peifer	8/21/89	5/14/90	3
5. Schedule the Unit 1 training instructors to evaluate a selected crew at least once per quarter during 1990 and provide report to Operations Superintendent. Include a task to reevaluate effectiveness at end of 1990 into the Nuclear Training Center Internal Commitment Tracking System.	Weimer/Sanaker	10/2/89	5/2/90	3
6. Establish a Training Program for Simulator Instructors in the use of video tape in post simulator exercises to more effectively critique communications teamwork and prioritization.	Seifried	10/9/89	3/31/90	3
7. Investigate feasibility of establishing cross crew evaluations.	Weimer/Smith	10/2/89	1/31/90	3



Specific Issue #5:

- A. STA involvement in plant assessment and event control was not consistent between crews, in that;
1. Some STA's provided little or no assessment of events to the SSS/SED other than updating parameters and classifying events.
 2. Some STA's did not provide the SSS with support in ensuring all EOP actions were completed.
 3. Some STA's did not correct inappropriate actions or recommend appropriate actions.

B. Corrective Actions

1. Formalize management expectations (beyond what is defined in EPP's and AP's) for the actions of the STA during EOP's.
2. Train STA's (all SRO's) in the standard during simulator training.
3. Train instructors in the standard and reinforce the policy to train to these standards during simulator training.
4. Develop a program by which observations will be conducted by management personnel (e.g. General Superintendent, Station Superintendent, Operations Superintendent and/or other Operations Management Staff) during each Requalification Cycle that includes simulator training. Include direction for implementing this program in a Training Department Procedure or Instruction.

Responsibility

Impl. Date

Comp. Date

<u>Responsibility</u>	<u>Impl. Date</u>	<u>Comp. Date</u>	
Smith/Abbott	N/A	7/28/89	
Cigler	7/31/89	10/6/89	
Cigler	7/31/89	8/21/89	
Willis	8/21/89	5/14/90	3



Specific Issue #5: (Cont'd)

	<u>Responsibility</u>	<u>Impl. Date</u>	<u>Comp. Date</u>	
5. Develop a program by which observations will be conducted by management personnel (e.g. Manager Nuclear Services, Superintendent of Training, Assistant Superintendent of Training and/or other Training Staff) during each Requalification Cycle that includes simulator training. Include direction for implementing this program in a Training Department Procedure or Instruction.	Peifer	8/21/89	5/14/90	3
6. Schedule the Unit 1 training instructors to evaluate implementation of standards on a Unit 2 selected crew at least once per quarter during 1990 and to provide a report to the Operations Superintendent.	Weimer/Sanaker	10/2/89	5/2/90	 3
7. Investigate feasibility of establishing cross-crew evaluations.	Weimer/Smith	10/2/89	1/31/90	
8. Schedule the Unit 1 and Unit 2 Operations Superintendents to evaluate team performance of selected opposite plant crews during the 1990-1991 Requal Program.	Weimer/Randall	10/2/89	5/14/90	 3



Specific Issue #6:

A. Operator actions were not always in accordance with Guidance as provided in the EOP's, in that;

1. One crew violated EOP's by securing Standby Liquid Control pumps with all rods not in following an ATWS, although the RO's knew it was not an appropriate action.
2. One crew never implemented vessel flooding in accordance with EOP's, although the STA knew or suspected that conditions were met and the requirement existed.
3. Five (5) crews failed to adequately control water level 159-202" by overflowing the vessel. Confusion existed with RO's and one (1) SRO as to what normal water level was in the EOP's. In three (3) events, the water level rise was slow and controlled.
4. One (1) SRO failed to fully implement guidance for vessel flooding.
5. Two (2) SRO's failed to recognize that a diamond decision block is not an action statement, in that; when asked if 3(2)SRV's could be open they opened 3(2) SRV's when procedurally 7 were to be opened.
6. One RO suspected that an order to open 2 SRV's was incorrect, but did not question the SSS because he believed the SSS was being guided by EOP's.

B. Corrective Actions

1. a. Develop and implement a 2-3 day EOP refresher training session on EOP usage and bases. This training should emphasize the significance of water level control and overflowing events.

Responsibility

Impl. Date

Complete

Williamson

8/21/89

10/6/89





6. Establish formal management expectations for EOP usage, including communications, command control, and STA responsibilities in carrying out EOP's.

Responsibility

Impl. Date

Comp. Date

Smith/Abbott

N/A

7/28/89

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Specific Issue #7:

- A. Operator actions were not always in accordance with Guidance as provided in normal operating procedures during emergency events, in that;
 1. Some crews had difficulty in carrying out N2-OP-97, Section H.2 per EOP-RQ.
 2. Although crews could work through OP-29 during a recirc pump trip and recovery, two crews wasted 45 minutes doing administrative tasks that were not necessary and one crew did not realize a recirc pump could not be started in the restricted zone and drove recirc flow further into the zone in an attempt to restart the pump. (Observed during NMPC Evaluation Week)
 3. Several RO's did not correctly place RHR in SP Cooling or DW/SP Spray when required in an emergency situation.

B. Corrective Actions:

1. Review specific deficiencies concerning EOP required actions during EOP refresher training.
2. Identify those Simulator JPM's that should be able to be performed without the use of a procedure and include 1990/1991 Requal Program.
3. Establish formal management expectations for verification of immediate actions taken during emergency conditions.

Williamson/
Cigler

8/21/89

10/6/89

Brown/Smith

N/A

1/2/90

Smith/Abbott

N/A

8/21/89

|3



Specific Issue #8:

A. Dynamic simulator scenarios used in the evaluation were not always realistic, manageable and within the 50 minute standard as set forth in ES-601, in that:

1. One scenario involved an ATWS following an MSIV isolation due to failed fuel (>3XNFPB isolation). In addition, the SDV ruptured in the Reactor Building causing a direct leak from the vessel to the secondary containment. The SSS was in 14 different EOP's.
 - a. This scenario was beyond the boundaries of the NMP2 FSAR.
 - b. This scenario was unmanageable in that two crews took manual pressure control as directed by EOP's, then required the same operator to inject with both SLC pumps. Both crews lost control of manually overridden automatic functions resulting in vessel depressurization and subsequent overfill.
2. All scenarios exceeded the 50 minute time guidelines.

B. Corrective Actions:

1. Develop a plan to implement each of the 15 existing scenarios into the 1990/1991 requalification program
2. Revise each of the 15 existing scenarios as necessary and validate during the 1990/1991 Requal Program.
3. Schedule the development of 10 new 50 minute scenarios by incorporating into the 1990/1991 Requal Program Schedule.

Responsibility

Impl. Date

Complete

	<u>Responsibility</u>	<u>Impl. Date</u>	<u>Complete</u>
	Kaminski	1/2/90	1/30/90
	Kaminski	1/2/90	2/21/90 3
	Kaminski	10/9/89	6/19/90 3



Specific Issue #8: (Cont'd)

	<u>Responsibility</u>	<u>Impl. Date</u>	<u>Com. Date</u>
4. Analyze the quality of simulator scenarios used in Requalification Program examinations. (See Corrective Action 1.B.8.e)	Rivers	9/15/89	10/27/89
5. Determine whether the simulator scenarios used in the Annual Requalification were realistic and manageable. (See Corrective Action 1.B.8.b)	Rivers	9/15/89	10/27/89
6. Determine why NMPC was unable to properly time validate simulator scenarios used in the Annual Requalification Examination. (See Corrective Action 1.B.8.f)	Rivers	9/15/89	10/27/89



Specific Issue #9:

Responsibility

Impl. Date

Comp. Date

A. Teamwork, including prioritization, evaluation and communication, were weak, in that:

1. Several crews tended to "cluster" around problems.
2. One crew took an action in violation of EOP's even though the Reactor Operator knew the action was incorrect.
3. Several crews allowed alarms to continue for up to ten (10) minutes, trying to verbally communicate above the alarm noise during EOP's.
4. Some crews SSS' were not aware of sources of water that were injecting into the vessel causing overflow.
5. Several crew members did not effectively screen plant parameters to ensure pertinent EOP parameters were communicated to the SSS.
6. Several STA's were more concerned with classification of events than assessment of plant conditions.
7. SSS' did not always effectively prioritize crew actions during EOP's.
8. Two crews did not correctly evaluate system status of recirc pumps being tripped prior to drywell spray being initiated.
9. Some RO's did not effectively communicate their actions so that other members could react (i.e. Rod Insertion following an ATWS that directly impacted vessel depressurization).

B. Corrective Actions:

1. Establish formal management expectations for the roles and responsibilities of crew members during emergency conditions.

Smith/Abbott

N/A

7/28/89



Specific Issue #9: (Cont'd)

	<u>Responsibility</u>	<u>Impl. Date</u>	<u>Comp. Date</u>	
2. Incorporated into 9.B.3.				
3. Train instructors and crews to the standard and reinforce during simulator training.	Cigler	7/31/89	8/14/89	
4. Establish a requirement to perform team evaluations on each crew each requalification training cycle that includes simulator training and individual evaluations twice per year.	Seifried	10/2/89	4/30/90	
5. Develop a program by which observations will be conducted by management personnel (e.g. General Superintendent, Station Superintendent, Operations Superintendent and/or other Operations Management Staff) during each Requalification Cycle that includes simulator training. Include direction for implementing this program in a Training Department Procedure or Instruction.	Willis	8/21/89	5/14/90	3
6. Develop a program by which observations will be conducted by management personnel (e.g. Manager Nuclear Services, Superintendent of Training, Assistant Superintendent of Training and/or other Operations Training Staff) during each Requalification Cycle that includes simulator training. Include direction for implementing this program in a Training Department Procedure or Instruction.	Peifer	8/21/89	5/14/90	3
7. Schedule the Unit 1 instructor(s) to evaluate implementation of standards on a selected crew at least once per quarter during 1990 and to provide a report to the Operations Superintendent.	Weimer/Sanaker	10/2/89	5/2/90	3



Specific Issue #9: (Cont'd)

	<u>Responsibility</u>	<u>Impl. Date</u>	<u>Comp. Date</u>	
8. Investigate feasibility of establishing cross-crew evaluations.	Weimer/Smith	10/2/89	1/31/90	
9. Schedule the Unit 1 and Unit 2 Operations Superintendent to evaluate team performance of selected opposite plant crews during the 1990-1991 Requal Program.	Weimer/Randall	10/2/89	5/14/90	3
10. Determine the reason for operators inability to handle complex emergency situations. (See Corrective Action 1.B.8.b)	Rivers/Smith	9/15/89	10/27/89	3

