

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-220/89-25

Docket No. 50-220

License No. DPR-63

Licensee: Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Facility Name: Nine Mile Point Unit 1

Inspection At: Salina Meadows - Corporate Office

Inspection Conducted: September 18-29, 1989

Inspectors: Roy K Mathew
Roy K. Mathew, Reactor Engineer, PSS, DRS

11/2/89
date

Other Participants and Contributors to this report

J. C. Stewart, Electrical Engineer, NRR/SICB
C. Douth, Electrical Engineer, NRR/SICB

Approved by: C. J. Anderson
C. J. Anderson, Chief, Plant Systems
Section, EB, DRS

11/3/89
date

Inspection Summary: Inspection on September 18-29, 1989 (Inspection Report No. 50-220/89-25)

Areas Inspected: An inspection was conducted at the NMPC Corporate Office to review the licensee's actions on eight previously identified restart issues identified in the March 26-31, 1989 Regulatory Guide 1.97 inspection. In addition, the open items from a previous RG 1.97 inspection dated November 14-18, 1988 were reviewed.

Results: No violations were identified. One restart item is closed. The remaining items are open pending the licensee's completion of all short term commitments. Five open items from a previous inspection, 88-34, are closed.



DETAILS

1.0 Persons Contacted

1.1 Niagara Mohawk Power Corporation (NMPC)

- *J. Benson, Senior Engineer, Consulting Services
- G. Brownell, Regulatory Compliance
- *F. J. Constance, Electrical Engineer
- *M. Dooley, Supervisor, Regulatory Compliance
- *R. Eastham, Assistant Manager, Modifications, Unit 1
- *D. Johnson, Nuclear Compliance and Verification
- J. Kronenbitter, Generation Engineer, Operations, Unit 1
- *T. McMahon, Assistant Manager, Electrical Engineering
- *G. Montgomery, Technical Assistant to Station Superintendent
- *B. Nowicki, Senior Engineer, Consulting Services
- J. Parrish, Reactor Operator, Unit 1
- B. Randell, Superintendent, Operations, Unit 1
- *J. Thuotte, Licensing Engineer
- *S. W. Wilczek, Jr., Manager, Nuclear Technology
- B. Wolken, Project Manager, Compliance

1.2 NMPC Contract Personnel

- C. Haller, MPR Associates
- J. Schilder, OEI

1.3 US Nuclear Regulatory Commission

- *C. J. Anderson, Chief, Plant Systems Section, NRC Region I
- *S. Newberry, Chief, I&C Branch, NRR/HQ

*Denotes personnel present at the exit meeting on September 29, 1989.

2.0 Purpose

The purpose of this inspection was to review eight Regulatory Guide (RG) 1.97 restart issues identified in a previous inspection, 50-220/89-12, and in an NRC letter to the licensee, dated April 21, 1989. The unresolved items and violations identified in the first RG 1.97 inspection, 88-34, conducted during the period November 14-18, 1988 were also reviewed. The status of the restart issues and open items reviewed are discussed in Sections 3.0 and 4.0 of this report.



3.0 Followup of Previous Inspection Findings (Restart items identified in the 89-12 inspection report)

3.1 (Open) Unresolved Item (50-220/89-12-01) Evaluation of RG 1.97 cable separation deficiencies

During the previous inspection, the licensee stated that separation deviations in cable routing for Category 1 instruments were still under evaluation.

Following the inspection, the licensee developed and completed a cable separation evaluation for RG 1.97 Category 1 instruments. The methodology used for this analysis consisted of the following: 1) the development of one line cable routing sketches for each Category 1 instrument loop from color coded cable routing drawings; 2) the development of a list of potential cable routing discrepancies and cable routing matrices; 3) the development of hazards criteria in evaluating the as-built conditions of the cable routing; 4) the preparation of a walkdown checklist data to identify the presence of hazards, fire zones, physical separation of redundant cables and components and the documentation of the as-built cable routing walk-down and; 5) the analysis of the walkdown data documented in the cable separation evaluation report.

During this inspection, the inspector reviewed the licensee's cable routing analyses, walkdown check sheets, cable routing sketches and matrices and a draft copy of cable separation evaluation reports. The inspector also performed a field walkdown of some of the cable routings to determine the nature of cable separation discrepancies. Based on the licensee's evaluation, they concluded that the cable routing was inconsistent with their routing practices. At the end of this inspection, the licensee was still in the process of completing the final review and approval of the cable separation evaluation report.

Basically the inconsistencies identified were as follows:

1. Redundant channel cables were routed together from the control room panel to control complex.
2. RPS channel 11 cables were routed in channel 12 cable trays and vice versa.
3. There was inconsistent use of non-channelized trays for RPS 11 or 12 cables.

The licensee's analysis shows that the potential cable separation deficiencies identified were not a concern for the restart of the plant based on their hazards analysis and walkdown, available fire protection detection and mitigation, alternate instruments available, a special operating procedure and operator training.



Based on the inspector's review of the licensee's evaluation of potential cable separation deficiencies, the inspector concluded that there are no restart concerns for Unit 1 cable separation deficiencies. The licensee stated that the long term action for the cable separation concerns will be addressed in the future as part of NMPC Unit 1 Design Base Reconstitution Program which is included under the Engineering Program Integration Plan (EPIP).

This item remains open pending the licensee's completion of the final review and approval of the RG 1.97 cable separation evaluation report before restart. No deficiencies were identified regarding the licensee's evaluation of this issue.

3.2 (Open) Unresolved Item (50-220/89-12-03) Review of the RG 1.97 instrument circuit loading and the adequacy of installed fuses

During the previous RG 1.97 inspection, no analysis was available to establish the adequacy of fuses to support the existing loads on the RPS Bus 12 instrumentation loops. The licensee was asked to complete a sample evaluation of two instrument circuits (circuits 7 and 12) of RPS Bus 12 before restart. The objective was to establish whether: 1) the fuses provided are adequately sized; 2) fuses are provided where needed to limit the number of loads to which the power supply may be lost or degraded as a result of a fault; and, 3) the time/current characteristics of upstream fuses are properly coordinated with downstream fuses.

The inspector reviewed the sample evaluation of fuse loading and coordination study MPR-1143, by MPR Associates, Inc. Based on the evaluation, MPR concluded that the upstream fuses are sized and coordinated properly. However, the evaluation identified a potential problem of some subcircuit loads without fuses. The licensee reviewed 23 of the RPS Bus 11 and 12 instrument power supply circuits feeding the category 1 variables. This review identified several subcircuit loads that were not protected by branch fuses. The inspector noted that eight out of ten EOP key parameters would be affected if a short circuit occurred in the unfused loads that are fed by the same power supply.

The licensee's short term action is to install additional subcircuit fuses for circuits that supply non redundant category 1 instruments before restart. These Category 1 instruments lack a redundant instrument that can be relied upon in the event of a bus failure resulting from inadequate fuse protection at the subcircuit level RPS Bus 11 circuit 12 and RPS Bus 12 circuit 7 are affected by this modification. New fuses will be properly sized and coordinated and any deficiencies will be corrected accordingly. The licensee is in the process of generating a modification package to complete this fuse discrepancy.

The licensee's long term actions are to perform a detailed analysis of fusing adequacy for all other RPS circuits that supply RG 1.97



Category 1 instruments and to perform modifications for identified deficiencies as a part of the licensee's EPIP program.

This item remains open pending the licensee's completion of modifications of subcircuit fuses for circuit 12 and 7 of RPS Bus 11 and 12.

3.3 (Closed) Unresolved Item (50-220/89-12-08) Document and Docket
Nine Mile 1 RG 1.97 Restart Activities

During the previous inspection, the NRC requested the licensee to document the following:

1. The Niagara Mohawk RG 1.97 evaluation of the parameters important to the EOPs that was performed to support NRC inspection 89-12.
2. The RG 1.97 Hazards Analyses
3. Planned modifications including scope and schedule.

The licensee has documented and docketed the above information in their May 19, 1989 and July 31, 1989 submittals. The inspector verified the adequacy of these documents. The inspector had no further questions.

This item is closed.

3.4 (Open) Unresolved Item (50-220/89-12-04) Review of alternatives
to Category 1 RG 1.97 instruments for which deficiencies exist

During the previous inspection, the licensee's evaluation of alternatives to RG 1.97 monitoring instruments was still in progress at the end of the inspection. The licensee was requested to provide the following information before restart.

- a. Identify and document the usefulness of alternatives to the RG 1.97 instruments for implementing the EOPs.
- b. Provide operator guidance and training as to when and how the alternative instruments would be used.

A number of alternatives to the primary RG 1.97 monitoring instruments exist for providing important post accident monitoring information. The licensee's evaluation of the usefulness of these alternatives for implementing EOPs are discussed in their submittal, dated July 31, 1989. The licensee has developed a Special Operating Procedure (SOP), NI-SOP-14, to specifically address the use of the identified RG 1.97 EOP instruments, the identified supplemental instruments and other alternate methods for determining the current status of EOP key parameters.



The inspector reviewed the licensee's submittal for the alternate instruments and performed a walkdown of all of the alternate instruments listed in the special operating procedure. The licensee stated that one shift crew is trained in the use of the alternate instrumentation and the remaining operators and staff are scheduled for training before restart. During the field walkdown, the inspector interviewed an operator in the control room to determine the effectiveness of the training and also to assess the adequacy of the information furnished in the SOP. The inspector noted that the operator had difficulty in identifying the instruments given in the SOP due to inadequate details. This was brought to the licensee's operating staff's attention.

Based on discussions with the licensee, the licensee committed to the following corrective actions before restart.

1. Additional training for the crews that went through the original training and the remaining operators and staff before restart. The training lesson plan will include all the necessary information to use alternate instruments per the new updated information of the SOP.
2. Provide more information for Drywell water level alternate instruments in the SOP.
3. List the missing Drywell Temperature instrument for the RG 1.97 instrument listed in the SOP.
4. Add instrument numbers and ranges for alternate and Reg. Guide instruments listed in the SOP-14.
5. Add necessary steps regarding when and how to use the alternative instruments.

The inspector had no further questions. This item remains open pending the licensee's completion of the revision of the SOP and providing additional operator training before restart.

3.5 (Open) Unresolved Item (50-220/89-12-06) Identification of RG 1.97 instrument power sources and providing instrument power source information at the site

This item pertains to the lack of instrument power supply information available at the site for the operations staff and Instrument and Control groups. The inspector reviewed the instrument power supply one line diagram showing RG 1.97 Category 1 instruments and verified that this information is available at the control room. This information is attached to the Special Operating Procedure, SOP-14. The licensee stated that this information will be made available to other personnel in operations and I&C before restart.



The inspector noted that the RPS Bus 11 & 12 circuit 4 power supply information was missing from the one line drawing. Also, during the review, the licensee stated that they identified some discrepancies of circuit loads that do not match with the drawings. The licensee has scheduled an in-plant walkdown of the RPS circuits where a discrepancy has been identified. The licensee plans to update one line drawings to reflect actual load configuration if needed.

The licensee stated that all the above identified discrepancies will be corrected before restart and the NRC inspector will be notified upon completion of the corrective actions.

During this review, the inspector noted that the licensee had an event on July 3, 1989 which was reported to the NRC under LER 89-11 regarding an automatic initiation of the reactor building emergency ventilation system. This event was caused by the removal of an incorrect fuse from RPS Bus 11 by plant personnel due to inadequate power supply information available for instrument circuit loops. The inspector noted that this event underscores the importance of providing this information at the site. The licensee's corrective action for this LER is still in progress. However, the licensee's short term corrective actions for the RG 1.97 Category 1 instrument power sources are complete except for the discrepancies identified above.

Long term actions for RG 1.97 instrument power circuits include development of a one line elementary wiring diagram as a part of the EPIP program.

This item remains open pending the licensee's completion of the short term commitments discussed above for this issue.

3.6 (Open) Unresolved Item (50-220/89-12-07) Redundant Fuel Zone Transmitters with Common Variable Leg

This issue involves two basic issues. The first is to determine if the fuel zone level instrumentation should be included as a part of Generic Issue 101 or whether it should be limited to a review of the system against RG 1.97. The licensee performed a review of the GI 101, NUREG/CR-5112 and the NMP-1 documentation which revealed that NMP-1 does qualify as a group 1 BWR plant and the responses noted in the NUREG are generally valid for NMP-1. Where the responses differ, the NMP-1 design is better than that described in the NUREG. The inspectors agreed with the licensee's view that the fuel zone variable leg break is not covered by the NUREG which addresses level instrument reference leg line breaks only.



The evaluation of the fuel zone as it relates to RG 1.97 follows. Reg Guide 1.97 specifies redundancy for RPV level indication from the bottom of the core support plate to the lesser of the top of the vessel or centerline of the main steam line. The inspector's evaluation agrees with the licensee review which shows that this parameter is redundant with the exception of the common variable leg.

The inspectors reviewed the effects of a variable line break. Under this condition, the indication will fail downscale. If this failure occurs at normal operating levels, the operators will have several other level indicators available. If this failure occurs as the reactor level drops below the other indications, the operator will not be able to determine level and, according to the draft EOPs that the inspectors reviewed, the operator will assume that there is no water at all and will take the appropriate depressurization and core flooding steps. The licensee stated that operator training is to include methods for detecting a failed variable leg. This will include using the core plate and sparger differential pressure signals going offscale as an indication that the problem is in the variable leg and not an actual reduction in water level.

The fuel zone level instrumentation does not initiate any automatic safety actions. The automatic actions all take place prior to the level where the fuel zone is the only remaining indication. A line break would be a small break LOCA which could be compensated for by any operational injection system. The draft EOP reviewed for RPV inventory control addresses RPV losses for line breaks. Specifically, if the RPV water level cannot be determined the EOP requires injection to the RPV as needed to re-establish RPV level indication. The inspectors concluded that the licensee has addressed this issue appropriately.

Since the licensee has deviated from their original commitments for providing a fully redundant channel for fuel zone RPV water level. The licensee indicated that they planned to submit their analyses and bases for NRC's evaluation for a deviation to RG 1.97 commitments within 90 days after the restart.

During the previous NRC RG 1.97 team inspection, the team raised a concern that if a break in the variable leg sensing line was to occur, the resulting indications presented in control room instrumentation might be confusing. Without proper training it might lead to improper operator action that jeopardizes adequate core cooling.

The inspector reviewed operator training materials and training records and noted that one shift crew went through the "fuel zone level instrument common tap break" training. Also, the inspector interviewed an operator to determine his ability to diagnose the problem and to see what actions would be taken to identify a fuel zone level instrument variable tap (common tap) break. The operator



was unable to give the inspector any information except that the operator knew of the existence of a potential problem. The inspector noted that the licensee has adequately addressed this issue in their analysis. The analysis shows the indications that provide the means for event diagnosis and identification and appropriate actions to be taken by the Emergency Operating Procedures. However, the training given to the operators was not effective.

Based on discussions with the licensee operating staff, they have committed to the following before restart.

1. Additional training for the crews that went through the original training and the remaining operators and staff before restart. The training lesson plan will include consequences and diagnostic aids given in the fuel zone common tap issue analysis.
2. EOP training will discuss fuel zone level break caution statements added to the EOP.
3. Add fuel zone level common tap failure analysis information in the operations technology manual for the operating staff's reference.
4. Add information regarding the core spray differential pressure alarm versus fuel zone line break detection in the annunciator response procedure OP-2.

This item remains open pending the licensee's completion of the above short term commitments for this issue before restart.

3.7 (Open) Unresolved Items (50-220/89-12-02) and (50-220/89-12-05)
Completion of the failure modes and effects analysis for the APRM
isolation deficiencies; Evaluation of the RG 1.97 isolation
deficiencies

3.7.1 APRM/Computer Interface

This subject was identified as a separate isolation problem because it is the only interface identified as a part of the licensee's RG 1.97 review where a Reactor Protection System (RPS) was shown to not be electrically isolated from the non safety systems. A review of the report prepared by MPR associates described a maximum credible fault test of the computer input card. A short review of the testing shows that it is similar to the testing required to qualify isolation devices for new power plants. The testing demonstrated that the input card will be destroyed by the fault but will open circuit and prevent the fault from propagating to the RPS equipment. In addition to the testing, the licensee prepared a failure modes



and effects analysis (FMEA) of lower voltage faults, open circuits, shorts to ground and connections between input cards. The analysis addresses problems most likely to occur. The inspectors concluded that the licensee has demonstrated that they have adequate isolation between the APRM and the computer circuits to satisfy NRC restart concerns.

3.7.2 RPS/Computer Interface

As a followup to the discovery of the APRM/computer isolation question, the NRC requested NMP-1 to check for other areas lacking isolation devices between RPS and non-safety systems. The inspectors reviewed the licensee's draft submittal and confirmed that the RPS has appropriate isolation. The inspectors had no further questions in this area.

3.7.3 Reg Guide 1.97 Indication/Feedwater Interface

The inspectors reviewed MPR Associates report No. 1148 which provides an evaluation of feedwater/ RG 1.97 isolation. This study evaluated the GEMAC equipment using traditional circuit analysis assuming the application of a maximum credible fault. No tests of this equipment were performed.

The review of the GEMAC isolated power supply takes credit for the fuse in the circuit. The NRC does not generally find fuses acceptable for isolation, unless they can be shown to be potted or otherwise prevented from being replaced with a different size fuse. This was not demonstrated in this case. This device is a transformer with fuses on both sides of the coil. However, the inspectors concluded that even though this device has not been demonstrated to be an isolation device, that it is not likely that a fault would propagate through the entire device.

The GEMAC proportional amplifier has a magnetic comparator comparable to a transformer and is not likely to propagate faults. The inspectors agree with the licensee's analysis. However, it was noted that the device has not been qualified as a class 1E isolation device.

The GEMAC strip chart recorder relies upon physical separation and has no electrical interties and is therefore acceptable.

The GEMAC multiplier divider study assumes that components will fail during the fault but without physical damage to adjacent components. This device has not been shown to be a qualified isolator and has not been tested as such. However, the inspectors noted that the input and output of the device will provide some isolation capability.



The licensee has proposed rewiring the common feedwater selector switch so that an internal switch failure will be less likely to disable both inputs. This is being performed under the modification package No. 89-147.

3.7.4 Related Issues

During the previous inspection, the NRC identified five EOP key parameters that do not have isolation to the process computer. The licensee reviewed the instrument loops for the same credible failures as in the FMEA study. Based on the individual evaluation of the loop the licensee committed to make the following changes.

- 1) In addition to the feedwater switch modification, the licensee is performing a modification, MOD #89-109, to make power supply changes for the wide range water level so that this single channel indication will fail only upon loss of one particular power bus rather than fail if either power bus fails.
- 2) They have also planned to physically move some computer input cards to obtain some separation and reduce the possibility of losing two channels of a parameter, and
- 3) They plan to move the existing ground from the input side of computer card to the common side of dropping resistor. Per Mod #89-195.

The licensee has committed to provide the NRC with their long term isolation plans 90 days after restart. The acceptability of the isolation for the long term will be evaluated at that time.

These above isolation issues remain open pending the licensee's completion of all of the above short term modifications before restart.

4.0 Followup of Previous Inspection Findings (Open Items Identified in the 88-34 inspection report)

4.1 (Closed) Violation (50-220/88-34-03)

This violation pertains to the failure of the licensee to establish Environmental Qualification (EQ) for Category 1, Regulatory Guide 1.97 instruments for Drywell Atmosphere Sensing Elements TE 201-36A, 50A and 51A.

The inspector reviewed the licensee's response to the notice violation. The root cause of this violation was determined to be an inadequate



review of RG 1.97 instruments that require Equipment Qualification. The licensee has reviewed all variables in RG 1.97, Revision 2 as Category 1 and 2 and updated this information in their submittal dated July 31, 1989. The licensee has initiated a modification package, MOD #88-152 to replace the existing thermocouples. This work is scheduled to be completed before restart. The inspector verified the modification package and thermocouple EQ test reports. No unacceptable conditions were noted.

The inspector considered the licensee's corrective actions acceptable. This item is closed.

4.2 (Closed) Violations 50-220/88-34-04 and 50-220/88-34-05

These violations pertain to the failure of the licensee to establish Environmental Qualification for Category 1 RG 1.97 instruments for suppression pool water level instrument LT 58-04 and Suppression Pool Water Temperature TE 201-2-517, 518, 491 and 492. The root cause of these violations was determined to be an error in the RG 1.97 submittal dated October 5, 1987 showing the incorrect instruments for these variables. The licensee identified the RG 1.97 instruments for these variables as LT 58-05 and 58-06 for suppression pool water level and TE 201-2-493 through TE 201-2-516 for suppression pool water temperature. TE 201-2-491 and 492 were inadvertently listed as sensing elements for suppression pool water temperature. They are actually suppression pool air temperature sensors and are not required for RG 1.97 instrumentation. The licensee has corrected all the discrepancies and updated this information in their submittal dated July 31, 1989.

The inspector reviewed the licensee's response for this violation and the EQ files and other documentations to establish Environmental qualification. No unacceptable conditions were noted.

The inspector considered the licensee's corrective actions acceptable. These items are closed.

- 4.3 (Open) Unresolved Item 50-220/88-34-06 pertaining to the lack of isolation between the Class 1E devices and the computer points. This item was also discussed in section 3.7 of this report. The FMEA study regarding isolation problems between APRM flow bias scram circuit and the computer circuit showed that the computer card provided isolation when it was subjected to a maximum credible fault and it did not affect the loop function at a lower credible fault. The licensee evaluated five EOP key parameters that do not have isolation to the process computer. They were subjected to the same credible failures as in the FMEA study. Based on the individual evaluation of each loop, some deficiencies were identified regarding instrument grounding for the loop. The licensee has initiated a modification package, 89-195 to correct the above discrepancies before restart. The licensee stated that all the short term commitments will be



completed with the completion of the modification package. Long term actions regarding the isolation issue are to provide further details regarding scope and schedule 90 days after restart.

This item remains open pending the licensee's completion of the long term actions.

4.4 (Closed) Unresolved Item 50-220/88-34-02

This item addresses the non redundancy, common power supply, and lack of recording devices for Drywell Atmospheric temperature.

The existing instrumentation has only one channel which monitors three levels of temperature in the drywell area. The common power supply from RPS Bus 12, Circuit 7 for this single channel instrumentation is acceptable.

The alternative instruments for this variable are shown in the licensee's hazards analysis and also in the special operating procedure SOP-14 and are acceptable alternatives for restart of the plant. The recording function for this variable is achieved by point assignment to a non-dedicated recorder.

The licensee stated that they have initiated a modification package to install two electrically and physically independent channels of safety related temperature instrumentation during the next refueling outage as a long term resolution to this problem.

Based on the inspection and discussions with the licensee and also the commitment made by the licensee to complete the modification by the next refueling outage, the inspector concluded that the corrective actions taken by the licensee are adequate.

This item is closed.

4.5 (Closed) Unresolved Item (50-220/88-34-07)

This item pertains to the lack of sufficient documentation to establish the performance characteristics for isolation device, Model No. RIS-SC326.

The inspector noted that this isolator is listed in NUREG-1342 as an acceptable isolator to isolate the non safety circuits and the maximum credible fault level listed does not exceed the NMPC instrument loop fault level. The licensee also stated that they performed a test on Model SC-326 and no adverse conditions were noted.

Based on review and clarification with the manufacturer, Rochester Instrument Systems, the licensee concluded that Isolator Model RIS



SC-326 provides the required isolation function in the event of an output fault.

The inspector had no further questions.

This item is closed.

4.6 Modifications

During this inspection, the inspector noted that the licensee has not completed several RG 1.97 modifications. The modifications that are scheduled to be completed before restart are listed in Attachment A. Long term modifications that are to be completed by the next refueling outage are listed in attachment B.

The inspector noted that some of the modifications were identified in previous licensee submittals and others were initiated during the process of the licensee's evaluation of RG 1.97 restart items.

The licensee stated that the NRC will be notified of the completion of all short term modifications.

The licensee's May 19, 1989 submittal stated that they plan to provide a redundant channel for the RPV water level wide range instrumentation. Discussions with the licensee's staff revealed that they are not now planning modifications for this variable. The licensee is planning to deviate from their original RG 1.97 commitments. Their analysis and bases for not providing a redundant channel will be submitted to the NRC within 90 days following the restart. No significant safety issues were identified by the inspectors regarding the lack of a redundant channel for the RPV water level wide range instrumentation.

5.0 Exit Interview

At the conclusion of the inspection on September 29, 1989, the inspector met with the licensee representatives denoted in Section 1.0. The inspector summarized the scope and results of the inspection at that time.

At no time during this inspection was written material give to the licensee.



Attachment A

Nine Mile Point, Unit 1 RG 1.97 Restart Modifications

1. Drywell Ambient Temperature Thermocouple - MOD #88-152
replacement for EQ
2. Wide Range Reactor Water Level - MOD # 89-109
power supply changes
3. Feed Water Solenoid Neutral Wire - MOD # 89-132
Connections
4. Feed Water Selector Switch Rewire - MOD # 89-147
5. Additional Sub Circuit Fuses to RPS - No MOD # available
Bus Circuits 7 and 12 .
6. Relocate Drywell pressure computer - MOD # 89-195
point and grounding
7. APRM/IRM power supplies power - No MOD # available
incorrectly



Attachment B

Nine Mile Point, Unit 1 RG 1.97 Modificaitons After Restart

(Completion Scheduled for the Next Refueling Outage)

1. Torus Air Space Pressure (Redundant loop and Range extension) - MOD # 86-076
2. Drywell Water Level (Redundant loop) - No MOD # available
3. Drywell Atmosphere Temperature (Redundant Loop) - No MOD # available

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2
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