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AUTH.NAME AUTHOR AFFILIATION
MANGAN,C.V. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION

VASSALLO,D.B. Operating Reactors Branch 2

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May 31, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Dear Mr. Vassallo:

Attached is a status of the Environmental Qualification Program for Nine Mile Point Unit 1. This information was presented to members of your staff at a meeting on March 15, 1984.

Very truly yours,

C. V. Mangan
Vice President
Nuclear Engineering & Licensing

CVM/MGM:ja
Attachment

A048
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NINE MILE POINT UNIT 1

EQUIPMENT QUALIFICATION PROGRAM

MAY 1984

A048
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Section I

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A. Compliance With 10CFR50.49(b)

Paragraph (a) of 10CFR50.49 requires that each licensee establish a program to environmentally qualify electrical equipment. 10CFR50.49(b) groups this equipment into the following three categories:

1. Safety-related electrical equipment as defined in IEEE Standard 323-1974 and 10CFR50.49.

2. Nonsafety-related electrical equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions of the safety-related equipment.

3. Certain post-accident monitoring equipment.

The following discussions present the methodology used to identify all electrical equipment falling within the above three categories:

10CFR50.49(b)(1) Safety-Related Electrical Equipment

Generic position B herein (Completeness of Safety-Related Systems List, Equipment List and Display Instrument List) describes the methodology used to identify safety-related equipment for Nine Mile Point Unit 1. This methodology is in full compliance with the requirements of Inspection and Enforcement Bulletin 79-01B and 10CFR50.49. System Component Work Sheets (SCEWS), in accordance with Inspection and Enforcement Bulletin 79-01B format, are computer generated to facilitate handling and distribution of qualification data within the organization for the ongoing qualification effort. All postulated design basis accidents which could potentially result in a harsh environment, such as loss of coolant accident inside containment, high energy line breaks outside containment and flooding inside and outside containment were considered in the identification of electrical safety related equipment. The master list of electrical equipment requiring environmental qualification addresses all electrical equipment within the scope of 10CFR50.49(b)(1).

10CFR50.49(b)(2) Nonsafety-Related Equipment

10CFR50.49 includes in its scope nonsafety-related electrical equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions of the safety-related equipment. The possibility of failure of nonsafety-related equipment in a manner detrimental to safety-related equipment has been evaluated by a combination of methods which are summarized below.

A master list of equipment was developed in accordance with 10CFR50.49(b)(1) and the requirements of Inspection and Enforcement Bulletin 79-01B. This equipment is required to provide safe shutdown and to mitigate the consequences of design basis accidents such as a loss of coolant accident inside containment and high energy line break outside containment. Generic position B herein (Completeness of Safety-Related Systems List, Equipment List and Display Instrument List) describes the methodology used to identify the electrical equipment requiring environmental qualification.

Not all the equipment in a particular safety-related system is required to accomplish accident mitigation and safe shutdown. A system failure analysis was performed on each safety-related system to identify the set of electrical equipment which the system requires in order to perform its design basis safety function. This analysis identified the nonsafety related auxiliary systems and equipment which are necessary for the operation of the safety related system or equipment. This analysis included a detailed review of the system operation, systems interaction, and operation of equipment within each system. This effort included review of the plant safety analyses, emergency operating procedures, piping and instrumentation diagrams, elementary wiring diagrams, electrical one line diagrams and functional logic diagrams. Addition or deletion of equipment from the master equipment list was performed as necessary.

In summary, a master list of equipment was developed for safety related electrical equipment within the scope of 10CFR50.49(b)(1). This master list was based on review of the plant safety analyses, emergency operating procedures, technical specification, piping and instrument diagram and electrical drawings. A system failure analysis was performed to identify non-safety related systems or equipment which could potentially degrade the operation of safety related systems or equipment.

Based on the above analysis, we have not classified any electrical equipment as nonsafety-related whose failure under postulated environmental conditions could prevent accomplishment of required safety functions by the safety related equipment. Therefore, the current master list of electrical equipment requiring environmental qualification and the review methodology adequately addresses electrical equipment within the scope of 10CFR50.49(b)(2).

10CFR50.49(b)(3) Certain Post-Accident Monitoring Equipment

Paragraph (b)(3) of 10CFR50.49 includes in its scope "certain post-accident monitoring equipment." Specific guidance concerning parameters to be monitored is provided in Regulatory Guide 1.97, Revision 2. Our generic position with respect to this issue and the methodology that was used to identify equipment that falls within this category is presented below.

Display instrumentation is included as an integral part of our qualification program in accordance with requirements established by Information and Enforcement Bulletin 79-01B. Generic position B herein (Completeness of Safety Related Systems List, Equipment List and Display Instrumentation List) describes the methodology used to identify display instrumentation. Equipment that currently falls within the category classified as certain post accident monitoring equipment was selected based on the following:

- Display instrumentation which is exposed to a harsh environment following a design basis accident is identified in the plant emergency operating procedures and are used by the operator to diagnose performance of system safety functions. This equipment is incorporated into the qualification program in accordance with the requirements of Inspection and Enforcement Bulletin 79-01B and enclosure 2 (Division of Operating Reactor guidelines).

- Certain installed electrical equipment located in harsh environments required for TMI Lessons Learned Implementation (NUREG-0737) in accordance with I.E. Bulletin 79-01B Supplement 3, Item 2.

At this time, the following activities have not been completed for Nine Mile Point Unit 1:

- The Detailed Control Room Design Review including the revision to the Plant Emergency Operating Procedures.

- Regulatory Guide 1.97, Revision 2 Review "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident."

As these activities are completed, equipment considered to be classified as Regulatory Guide 1.97, Revision 2, Category 1 or Category 2 items will be qualified in accordance with 10CFR50.49 criteria. Qualification of these items will be independently scheduled.

Based on the above considerations, electrical equipment within the scope of 10CFR50.49(b)(3) has been adequately addressed and incorporated into the Nine Mile Point Unit 1 equipment qualification program.

B. Completeness of Safety-Related Systems List, Equipment List and Display Instrument List

The Technical Evaluation Report (TER-C5257-466), Appendix C, addressed the issue of completeness of the lists of safety-related systems, equipment and display instrumentation at Nine Mile Point Unit 1. In Section C.2, the Technical Evaluation Report indicated that the licensee had responded to the NRC regarding the list of safety-related display instrumentation. In Sections C.1 and C.3, however, the Technical Evaluation Report expressed concerns over the lists of safety-related systems and equipment. In summary, the concerns expressed in the Technical Evaluation Report were:

- The list of systems was insufficient to verify that all safety functions will be performed

- The deletion of equipment items or display instrumentation from the lists because they fell within the scope of Regulatory Guide 1.97 is not justified

- The absence of certain specific equipment items from the list was questioned.

The TER concluded with the following recommendation:

> "It is recommended that a thorough review of plant safety analyses and emergency procedures be performed with regard to the safety functions necessary for loss of coolant accident and high energy line break accident mitigation. A complete and comprehensive list of systems to be addressed for environmental qualification should be submitted to the Nuclear Regulatory Commission for review and approval."

In view of these concerns, we undertook a complete review of the lists of safety related systems, equipment and display instrumentation. This review was intended to provide the recommended action of the TER and was performed as follows:

- A review of all design basis events such as loss of coolant accident inside containment and high energy line breaks outside containment (in reactor building, steam tunnel and turbine building) was conducted.

- A list of systems required to mitigate the consequences of a loss of coolant accident and high energy line breaks was established. The list was based upon a review of plant safety analyses, technical specifications and emergency operating procedures, considering the functions that must be performed for accident mitigation without regard to location of equipment relative to a potentially harsh environment. The six functions considered were:

  (1) emergency reactor shutdown,
  (2) containment isolation,
  (3) reactor core cooling,
  (4) containment heat removal,
  (5) core residual heat removal, and
  (6) prevention of a significant release of radioactive material to the surrounding environment.

  A list of display instrumentation (including those necessary for the operator to monitor plant status) was developed with the systems list. The primary objective was to establish a final list of safety-related systems in accordance with Nuclear Regulatory Commission criteria.

- Not all equipment in a particular safety-related system requires qualification and post-accident active or passive functional capability in order to accomplish accident mitigation. Depending on system design, certain motor-operated valves, solenoid-operated pneumatic valves, temperature switches, limit switches and instrumentation may not be required to perform a safety function or mitigate the consequences of an accident in order for the system to accomplish its design basis safety function. Several other systems only require that the containment isolation portion of the system remain functional. A system failure analysis, therefore, was performed to identify the set of electrical equipment which is required in order to perform its design basis safety function. Addition or deletion of equipment from the master list was performed as necessary. Division of Operating Reactors Guidelines Appendix A and plant emergency operating procedures were used as guides to identify devices and display instrumentation used by the operator. The equipment which must function in these systems was identified by review of system descriptions and appropriate drawings (piping and instrumentation drawings, elementary wiring diagrams, electrical one line diagrams and functional logic diagrams). Application of system/component failure analyses was performed to identify the electrical equipment which requires environmental qualification.

- Plant areas with environmental parameters (pressure, temperature, humidity, radiation level, submergence level, etc.) which increase significantly above normal ambient conditions as a result of a design basis event, were considered to be harsh post-accident areas. Containment sprays and radiation dose from recirculating radioactive fluids were included in these considerations.

- A review of the location of the electrical equipment was performed. Equipment items which are required to function but are not located within a harsh environment, were deleted from the list. In addition, certain equipment items not exposed to a harsh environment at the same time that they are required to perform their safety-related function were deleted from the list and justification was provided.

Based on the results of the above tasks, a final safety-related systems list and a final electrical equipment list (including display instrumentation) were developed.

Niagara Mohawk believes that this review satisifes each of the concerns expressed in Appendix C of the Technical Evaluation Report. The resulting systems list is completely documented to demonstrate that all required safety functions will be performed. Display instrumentation identified in the plant emergency operating procedures are included.

C. <u>One Hour Minimum Operating Time Margin</u>

In order to account for various uncertainties innerent in equipment qualification test programs, the NRC criteria for qualification incorporated a one-hour minimum time margin requirement in addition to the required operability time of equipment. This requirement was established by the Division of Operating Reactors Guidelines Section 5.3.1, Inspection and Enforcement Bulletin 79-01B, Supplement 2 Question/Answer Number 12 and NUREG-0588, Section 3(4). Even though some equipment was required by design to perform its safety function within a short time period after the onset of an accident, the Nuclear Regulatory Commission criteria required that this equipment remain functional in the accident environment for a period of at least one hour in excess of the design operating time for the equipment. The Nuclear Regulatory Commission Safety Evaluation Report/Technical Evaluation Report used this criteria in the review of the licensee's equipment qualification documentation.

Subsequently, the Nuclear Regulatory Commission issued Generic Letter 82-09 which stated that equipment may be qualified using the required operating time plus an appropriate margin. This criteria is applicable to equipment subject to the requirements of the Division of Operating Reactors Guidelines or Category II of NUREG-0588. In addition, the one hour time margin is not applicable to equipment whose safety function is performed prior to significant changes in the environment. For all cases, however, subsequent failure must be shown not to be detrimental to plant safety. Regulatory Guide 1.89, Revision 1, position C-6 also states that equipment which is required by design to perform its safety function within the first ten hours of the event should remain functional in the accident environment for a period of at least one hour in excess of the required equipment operating time unless a time margin of less than one hour can be justified. This justification must include:

- Consideration of a spectrum of line breaks
- Potential need for use of the equipment later in the event
- Determination that failure of the equipment after the required operating time interval will not degrade safety functions or mislead the operator
- Determination that margin applied will account for uncertainties in the qualification program.

10CFR50.49(e)(8) states "Margins must be applied to account for unquantified uncertainty, such as the effects of production variations and inaccuracies in test instruments. These margins are in addition to any conservatisms applied during the derivation of local environmental conditions of the equipment unless these conservatisms can be quantified and shown to contain appropriate margins."

Our position with respect to the one hour minimum operating time margin is in accordance with the criteria presented in Generic Letter 82-09, Regulatory Guide 1.89, Revision 1, position C-6 and 10CFR50.49(e)(8). Test data and analysis used to demonstrate qualification of equipment envelope the required design operating time plus one hour margin or an appropriate margin has been justified.

D. Aging and Qualified Life

The Nuclear Regulatory Commission Division of Operating Reactors guidelines, Sections 5.2(4) and 7.0, require that the licensee conduct an assessment of safety-related equipment to identify materials susceptible to significant age related degradation which could affect performance of design safety functions. A qualified (designated) life should be established for equipment susceptible to significant aging based on engineering evaluations and judgment. Maintenance, surveillance and equipment or component replacement intervals should be based on the established qualified life so that equipment qualification is maintained on a continuing basis. Specifically, the Division of Operating Reactors guidelines require; identification of materials susceptible to significant degradation due to thermal and radiation aging, establishment of maintenance and replacement schedules, and establishment of ongoing programs to review surveillance and maintenance activities to identify equipment exhibiting age related degradation. Arrhenius techniques are generally considered acceptable for assessment of thermal aging. These requirements are also implicitly established by 10CFR50.49(e)(5), NUREG-0588, Category I, Section 4 and Regulatory Guide 1.89, Revision 1, Section 7; however, for new equipment (replacement equipment), these standards are more rigorous in that the criteria of IEEE-323 (1974) must be applied and the equipment must be preconditioned prior to testing. Methods for compliance with established criteria are presented below.

For installed equipment, we have identified safety-related equipment whose materials are susceptible to significant age related degradation. A qualified (designated) life has been established for each equipment type with requisite replacement or component refurbishment schedules. Various methods were employed in establishing the qualified life for equipment such as:

- Use of available qualification test data on similar or actual components or equipment to support a conservative equivalent life extrapolation of the enveloping temperature test profile using Arrhenius techniques

- Contact with vendors to obtain bills of material, material information and technical data to identify age sensitive materials

- Review and engineering evaluation of industry references and technical literature to determine material radiation threshold and thermal-withstand capabilities

- Engineering analyses to establish a reasonable qualified life and justified replacement schedule.

Calculations, assumptions, technical data and references were incorporated into the respective equipment qualification documentation. The results of these evaluations and analyses will be incorporated into the existing plant maintenance and surveillance program to ensure that equipment qualification is maintained. Based on these considerations, Niagara Mohawk fully complies with the aging and qualified life criteria presented in the Division of Operating Reactors guidelines.

When currently installed equipment (qualified to the Division of Operating Reactors guidelines) is replaced, the new equipment will be qualified in accordance with the aging and qualified life criteria presented in 10CFR50.49,(e)(5), NUREG-0588, Category I, Section 4 and Regulatory Guide 1.89, Revision 1, Section 7 unless there are sound reasons to the contrary to preclude upgrading. For this equipment, the qualification test plans and test reports are evaluated to ensure that equipment is properly preconditioned (naturally or artificially) prior to testing and a reasonable qualified (designated) life and component replacement interval is established. The results of the equipment qualification program will be incorporated into the existing plant maintenance and surveillance program to ensure that equipment qualification is maintained. Based on these considerations, Niagara Mohawk fully complies with the aging and qualified life criteria for new equipment presented in 10CFR50.49, NUREG-0588 Category I and Regulatory Guide 1.89.

With respect to synergistic effects, Niagara Mohawk recognizes the limitations in the state-of-the-art; therefore, synergisms were not addressed unless known synergisms were identified and were considered to have significant effect on the equipment's safety function. Based on these considerations, Niagara Mohawk fully complies with the synergistic effects criteria presented in 10CFR50.49(e)(7), NUREG-0588, Category 1, Section 4(3) and Regulatory Guide 1.89, Revision 1, Section 7.

Finally, a program will be developed to be used in conjunction with the established maintenance and surveillance program to identify significant age related degradation trends, characteristics and observations for equipment. Appropriate corrective actions will be taken on a case-by-case basis.

E. Maintenance and Surveillance

The Division of Operating Reactors guidelines and 10CFR50.49 require that ongoing programs be implemented to establish and perform maintenance, surveillance and equipment (or component) replacement activities for safety-related electrical equipment to ensure that equipment qualification is maintained on a continuing basis. The program must incorporate the established values of designated life for equipment considered to be susceptible to significant aging. Our methodology with respect to compliance with Nuclear Regulatory Commission criteria is summarized below.

We are establishing a maintenance, surveillance and replacement program at Nine Mile Point Unit 1 for electrical equipment requiring environmental qualification. This program will supplement the existing plant maintenance and surveillance program by incorporating the relevant data of the qualification documentation packages so that qualification will be continuously maintained. Although the program is not completed, many of the maintenance and replacement/refurbishment activities conducted during the 1984 refueling outage at Nine Mile Point Unit 1 is related to equipment environmental qualification.

As part of the equipment qualification program, we have developed environmental qualification documentation which provides an auditable basis to substantiate environmental qualification. This documentation contains vendor information, test reports and analyses which were conducted to establish qualification for equipment types such as motor operated valves, E/P converters, etc. As part of the qualification review, the documentation identifies components and equipment susceptible to significant age related degradation and establishes a reasonable designated life for replacement or refurbishment, maintenance and surveillance requirements. The equipment qualification packages are currently under review to extract and incorporate the salient information to be used at the plant for maintaining equipment qualification. Once this review and compilation of data is complete, an "equipment qualification maintenance, surveillance and replacement" procedure will be incorporated into the existing plant maintenance procedures. As an additional feature of the program, we will conduct periodic equipment qualification training seminars for plant and corporate office personnel to ensure that responsible personnel are acquainted with the principal aspects of equipment qualification.

Based on the above considerations, we conclude that the activities conducted on environmental qualification and the current development of a maintenance and surveillance program for electrical equipment fully complies with the requirements of the Division of Operating Reactors Guidelines and 10CFR50.49.

F. Submergence

Section 4.3.4 of the Technical Evaluation Report stated that Niagara Mohawk has provided a satisfactory response to the Nuclear Regulatory Commission concern regarding submergence. The previous Nuclear Regulatory Commission Safety Evaluation Report concern identified in Section 3.5 of the June 8, 1981 Safety Evaluation Report was:

"The Licensee has stated that submergence in the drywell is not a concern because of the low resistance flowpath to the torus and the large torus-free volume. It is not evident that the licensee considered the effects of all steamline breaks, both inside and outside containment (for example, a feedwater line break outside containment), and their relation to the submergence of Class 1E equipment. The licensee should address this concern."

In our September 8, 1981 response regarding submergence of Class 1E electrical equipment, we stated that submergence of Class 1E equipment inside and outside containment is not a concern.

Further investigation, as determined by engineering calculations of the maximum submergence elevations, shows that equipment located inside and outside containment will not be submerged.

Based on these considerations, we consider that this issue is resolved.

G. Chemical Spray

Section 4.3.5 of the Technical Evaluation Report stated that Niagara Mohawk has provided a satisfactory response to the Nuclear Regulatory Commission concern regarding the effects of demineralized water spray. The previous Nuclear Regulatory Commission Safety Evaluation Report concern, identified in Section 3.6 of the June 8, 1981 Safety Evaluation Report was:

"The Licensee has stated that the plant's primary containment does not have a chemical spray system. If, however, the plant design has a demineralized water spray, its effects should be examined and the Licensee should address this concern."

In our September 8, 1981 response regarding chemical spray, we stated that various electrical components located inside containment were tested using various mixtures of chemical spray which, in fact, were a more severe and conservative simulation than the demineralized water spray. For example, boric acid and boron were used in the chemical spray/loss of coolant accident tests for Limitorque Valve Operators, Namco limit switches, Pyco thermocouples and General Electric cables.

Further investigation based on engineering evaluations has determined that deminerlized water spray will not affect performance of safety related electrical equipment located inside containment.

Based on these considerations, we consider that this issue is resolved.

H. Installed TMI Action Plan Items

NUREG-0737 "Clarification of TMI Action Plan Requirements" established actions to be taken by licensees regarding TMI Lessons Learned Implementation. Nuclear Regulatory Commission Inspection and Enforcement Bulletin 79-01B, Supplement 3, Item 2, requires environmental qualification of installed safety-related electrical equipment located in harsh environments required for TMI Lessons Learned Implementation. Equipment items that fall within this category were identified and incorporated into the Nine Mile Point 1 Equipment

Qualification program. Accordingly, information on TMI lessons learned items was submitted on February 2, 1982 and March 2, 1982. These items were subsequently addressed in the Nuclear Regulatory Commission Safety Evaluation Report/Technical Evaluation Report review (Technical Evaluation Report items 73 thru 99 inclusive). A resolution has been provided for qualification deficiencies identified in the Safety Evaluation Report/Technical Evaluation Report and is included in Section III of this report.

Based on these considerations, we conclude that installed TMI action plan items have been properly incorporated into the qualification program in accordance with Nuclear Regulatory Commission Inspection and Enforcement Bulletin 79-01B, Supplement 3, and Item 2, 10CFR50.49 qualification requirements.

Section II

Equipment Items Considered Resolved by the Tecnnical Evaluation Report

In Technical Evaluation Report-CS257-466, Franklin Research Center (FRC) assigned equipment items into one of eight qualification categories based upon review of documentation submitted by the licensee. Two of these categories provide a final resolution of the status of equipment items. These categories are:

Nuclear Regulatory Commission Catetory	Category Description
I.a	Equipment Qualified
III.a	Equipment Exempt From Qualification

Since the items in these categories have been resolved, they are not addressed in this submittal. The equipment items in these categories are:

Equipment Qualified (NRC Category I.a)

FRC Technical Evaluation Report Item Number	Manufacturer	Model Number	Plant Identification/ Description
61	OZ Gedney	XL	Electric terminal in steam tunnel

Equipment Exempt From Qualification (NRC Category III.a)

FRC Technical Evaluation Report Item Number	Manufacturer	Model Number	Plant Identification/ Description
36	Rosemount	1151DP	LT 58-05, 58-06

Section III

Resolution of Specific Equipment Environmental Qualification Deficiencies Identified in the Tecnnical Evaluation Report

Section 3.1

TRANSDUCER, E/P

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
21	Fisher Controls Model 546	I.b	Aging degradation evaluated adequately Criteria regarding radiation satisfied

RESOLUTION:

Summary:

- Inadequate materials list at time of NRC review.
- Thermal and radiation analysis inadequate at time of NRC review.
- Qualified by Wyle Report 17655-EPT-1 (Reference 115) and Fisher Report NA-23 (Reference 34).
- Equipment is qualified.

Details:

The qualification of these components was not established at the time of the NRC review, and the components were to be replaced if qualification could not be established. The TER identified the following qualification deficiencies: A materials list for non-metallic items was not furnished by the vendor to identify materials susceptible to radiation and thermal aging; the radiation evaluation for Buna "N" as the limiting material did not consider application characteristics such as compression set, elongation etc.; and the estimated life was based solely on Buna "N" without evaluation of the other organic materials. Subsequently, Wyle Report 17655-EPT-1 compiled a materials list and performed a thermal and radiation aging evaluation for all susceptible non-metallic materials. The Wyle Analysis considered compression set of the Buna "N" material as the most conservative case. The analysis established a 4.5 year replacement schedule for the Buna "N" o-rings and the upper and lower diaphragms. Based on this documentation, the equipment is qualified for a 40 year life with identified component maintenance and replacement schedule.

Section 3.2

TEMPERATURE ELEMENT

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
32	Minco Nickel R-T-D	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided.
- This equipment will be replaced by qualified PYCO Model 122-7026 RTDs.
- Testing of PYCO RTD's has been completed by the manufacturer.
- After replacement and plant specific analysis is performed using PYCO test report number 16436-82N (Reference 182), the equipment is qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review, and an assessment was to be conducted to establish qualification. Therefore, documented evidence of qualification was indicated by the TER as inadequate. This equipment will be replaced by qualified PYCO Model 122-7026 RTDs. The manufacturer has completed successful testing of these RTDs and preliminary results indicated that the Nine Mile Point Unit No. 1 environmental conditions are enveloped. After replacement and plant specific analysis is performed using PYCO test report number 16436-82N, this equipment is qualified.

Section 3.3

TEMPERATURE ELEMENT

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
22	Pall Trinity Cu/6	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided.
- This equipment will be replaced by qualified PYCO Model 102-3171-07 thermocouples.
- Testing has been completed by the manufacturer.
- After replacement and plant specific analysis is performed using PYCO test report number 16436-82N (Reference 182), the equipment is qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review, and an assessment was to be conducted to establish qualification. Consequently, the TER indicated that the documented evidence of qualification was inadequate. These components will be replaced by qualified PYCO Model 102-3171-07 thermocouples. The manufacturer has completed successful testing of these thermocouples and preliminary results indicate that the Nine Mile Point Unit No. 1 environmental conditions are enveloped. After replacement and plant unique analysis is performed using PYCO test report number 16436-82N, the equipment is qualified.

Section 3.4

TEMPERATURE ELEMENT

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
89	PYCO 02-3171-08, Thermocouple	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided.
- Qualified by Patel Report PEI-TR-82-12-4 (Reference 52) and Wyle Report 17655-TEL-1 (Reference 55).
- The qualified life of the equipment is 15 years with gasket replacement at 3.7 year intervals.
- Equipment is qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review, and an assessment was to be conducted to establish qualification. Consequently, the TER indicated that the documented evidence of qualification was inadequate. Subsequently, Patel Report PEI-TR-82-12-4 established qualification of this equipment for temperature, pressure, humidity and radiation; and Wyle Report 17655-TEL-1 supplemented the Patel report by providing analysis which demonstrates that the thermocouple has a qualified life of 15 years with replacement of the gasket at 3.7 year intervals. Based on the documentation, the equipment is qualified.

Section 3.5

TEMPERATURE ELEMENT

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
90	PYCO 102-3171-08, Thermocouple	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided.
- Qualified by Patel Report PEI-TR-82-12-4 (Reference 52) and Wyle Report 17655-TEL-1 (Reference 55).
- The qualified life is greater than 40 years.
- Equipment is qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review, and an assessment was to be conducted to establish qualification. Consequently, the TER indicated that the documented evidence of qualification was inadequate. Subsequently, Patel Report PEI-TR-82-12-4 established qualification of the equipment for temperature, pressure, humidity and radiation; and Wyle Report 17655-TEL-1 supplemented the Patel report by providing analysis which demonstrates that the thermocouple has a qualified life of greater than 40 years. Based on the documentation, the equipment is qualified.

Section 3.6

TEMPERATURE SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
28	Fenwal/17002-40	II.a	Adequate similarity between equipment and test specimen established Aging degradation evaluated adequately Qualified life or replacement schedule established (if required) Peak pressure adequate Criteria regarding radiation satisfied

RESOLUTION:

Summary:

- Documentation inadequate at time of NRC review.
- Qualification established by Wyle Report 17509-1
- A Wyle Analysis will be conducted to justify minor pressure
- deviation.
- When Wyle Report 17509-1 and Wyle pressure analysis is received,
- the equipment will be qualified.

Details:

The TER evaluation concluded that the qualification documentation for this equipment was inadequate with respect to similarity, aging, qualified life, peak pressure and radiation. Subsequently, it has been determined that Fenwal Model 17002-40 temperature switches have been successfully tested by Wyle Report 17509-1. The Wyle test indicates that all environmental parameters applicable to Nine Mile Point Unit No. 1 have been enveloped except for pressure. A supplemental analysis will be provided by Wyle to justify the small deviation between the required 17.3 psig pressure and the 15.5 psig test condition for pressure. Wyle Report 17509-1 establishes a qualified life of 40 years for this equipment. We are currently in the process of obtaining Wyle Report 17509-1 and the supplemental Wyle analysis. When this documentation is received, this equipment will be qualified.

Section 3.7

TEMPERATURE SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	United Electric/ Model 829C	N/A	N/A

RESOLUTION:

Summary:

- Qualified for radiation by Wyle Report 17655-TSW-1 (Reference 106).
- The qualified life is 40 years.
- Equipment is qualified.

Details:

These temperature switches have been incorporated into the master list of equipment based on a detailed systems review conducted subsequent to the NRC review. The temperature switches are exposed to a high radiation environment under accident conditions. Wyle Report 17655-TSW-1 establishes qualification for radiation for these devices. A 40 year qualified life has been established for these devices. This equipment is qualified.

Section 3.8

ELECTRICAL CONTROL CABLE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
95 & 96	Rockbestos/3C #12 AWG; #18 AWG, 6 T/P; 7C #12 AWG; TSP #16 (XLPE Conductor Insulation, Neoprene Jacket)	II.a	Adequate similarity between equipment and test specimen established

Summary:

- Adequate similarity not established at time of NRC review.
- Qualification established by Patel Report PEI-TR-82-12-2 (Reference 153) which includes Rockbestos test report.
- The qualified life is 40 years.
- Equipment is qualified.

RESOLUTION:

Details:

The TER evaluation concluded that adequate similarity was not estabalished between the test specimen and the installed cable based on Rockbestos test report "Qualification of Firewall III Class 1E Electric Cables" dated July 7, 1977. Subsequent to the NRC review, Patel Report PEI-TR-82-12-2 established qualification for the cable by providing supplemental aging and similarity analysis in conjunction with Rockbestos test report "Qualification of Firewall III Class 1E Electric Cables" dated June 22, 1978. The qualification documentation established a qualified life for the cable greater than 40 years. Based on the documentation, the cable is qualified.

Section 3.9

ELECTRICAL TERMINAL

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
57, 58	Burndy/QA8 and QA8CB	II.c	Adequate degradation evaluated adequately Qualified life or replacement schedule established (if required)

RESOLUTION:

Summary:

- Aging and qualified life inadequate at time of NRC review.
- Qualified by Burndy Test Report TD79-601A (Reference 13) and Wyle Report 17655-TER-2 (Reference 50).
- Terminals are all metal construction.
- Equipment is qualified for 40 years.

Details:

The TER concluded that aging and qualified life were not adequately addressed in Burndy Test Report TD79-601A. Subsequently, Wyle Report 17655-TER-2 established that the QA-B series of electrical terminals contains no insulation material and is constructed of high copper alloy metal. Because of the all metal construction, these terminals have no time related age degrading material. Based on this documentation, the electrical terminals are qualified for 40 years.

Section 3.10

ELECTRICAL TERMINAL

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
56	Burndy Type GZ Ground Connector	II.a	Adequate similarity between equipment and test specimen established

RESOLUTION:

Summary:

- Adequate similarity between test specimen and equipment not established.
- Qualified by Burndy Test Report TD79-601A (Reference 13) and Wyle Report 17655-TER-1 (Reference 97).
- Terminals are all metal construction.
- Equipment is qualified for 40 years.

Details:

The TER evaluation concluded that adequate similarity between the test specimens of Burndy Test Report TD79-601A and the installed electrical terminals was not estabalished. Subsequently, Wyle Report 17655-TER-1 established that the type GZ ground connector installed at Nine Mile Point Unit 1 and the tested type QA-B series terminals differ only in mechanical configuration of materials. Both types are constructed of high copper alloy metal and contain no insulation material. Because of the all metal construction, these terminals have no time related age degrading material. Based on this documentation, the Burndy type GZ ground connectors are qualified for 40 years.

Section 3.11

CABLE TERMINAL

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
60	AMP Pre-insulated, PIDG and Plastigrip (Ring Tongue)	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- The previous analysis report inadequate at the time of NRC review.
- Ring tongue terminals tested by AMP Test Report, 110.11516 (Reference 76).
- AMP Test Report, 110.11516 and Wyle Report, 17655-TER-4 identified that the test was successful except for one configuration.
- Engineering evaluation is being conducted to resolve the anomaly with respect to our application.
- If the anomaly is resolved, the equipment is therefore qualified. If the anomaly is not resolved, the equipment will be qualified by an additional engineering analysis or equipment modification/ replacement.
- When the analysis is completed, this equipment is qualified.

Details:

The previous report did not provide adequate evaluation for materials. Therefore, the TER concluded that documented evidence of qualification was inadequate. Subsequently, AMP Test Report, 110.11516 (for type PIDG and PLASTI-GRIP ring tongue terminals) was obtained, which describes the test results for 40-year normal life and loss of coolant accident/high energy line break. AMP Test Report, 110.11516, and Wyle Assessment Report, 17655-TER-4 determined that the ring tongue terminals did satisfactorily perform throughout the testing except for a configuration in which the insulation sleeves slipped off the wire barrels on some unenergized "PLASTI-GRIP" specimens mounted vertically with the ring tongue end up during loss of coolant accident/high energy line break simulation. An engineering evaluation is being conducted to resolve the anomaly with respect to our application to determine if "PLASTI-GRIP" type terminals are used and to determine the installation configuration. If the anomaly is not resolved by identification of type and installation configuration, an additional detailed engineering analysis will be conducted to assess the significance of the sliding of the sleeves with respect to qualification or the equipment will be modified/replaced. Upon completion of this analyses, this equipment is qualified.

Section 3.12

CABLE SPLICE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
59	AMP Pre-insulated, Butt Splices	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- The previous analysis report was inadequate at the time of NRC review.
- Ring tongue terminals tested by AMP Test Report 110.11516 (Reference 76).
- Wyle Report, 17655-TER-3, does not identify acceptable similarity between the tested terminals and splices.
- An engineering evaluation will be conducted to establish acceptable similarity.
- When the analysis is completed, this equipment will be qualified.

Details:

The previous report did not provide adequate evaluation for materials. Therefore, the TER concluded that documented evidence of qualification was inadequate. Subsequently, AMP Test Report 110.11516 (for type PIDG and PLASTI-GRIP terminals) was obtained, which describes the test results for 40-year normal life and loss of coolant accident/high energy line break. Wyle Report 17655-TER-3 does not identify acceptable similarity between the tested terminals and splices. Therefore, an engineering evaluation will be conducted to establish acceptable similarity. When the analysis is completed, the equipment will be qualified.

Section 3.13

MOTORS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
42	GE/ Type 5K8288 37C7	II.a	Adequate similarity between equipment and test specimen established Qualified life or replacement schedule established (if required) Peak pressure adequate

RESOLUTION:

Summary:

- GE Analysis Report (G-EN-0-164) inadequate with respect to similarity, replacement schedules and pressure effects.
- Qualification addressed by Wyle Report 17655-MOT-1.1 (Reference 112), G.E. Analysis Report G-EN-0-164 (Reference 47) and GE BWR Summary Reprt QSR-111-A-04 (Reference 111).
- Accident environment is not severe.
- The existing qualification documentation does not adequately address the effects of pressure, aging and identify required lubricants.
- An additional analysis will be conducted to provide full qualification.
- When the additional analysis is completed, the equipment is qualified.

Details:

The NRC concluded that adequate similarity, bearing and lubricant replacement schedules and effects of peak accident pressure were not adequately addressed by G.E. Analysis Report G-EN-0-164. Subsequently, Wyle Report 17655-MOT-1.1 and GE BWR summary report QSR-111-A-04 were provided. This documentation, in conjunction with GE Analysis Report G-EN-0-164, resolves the deficiencies with respect to similarity of the type 5K motors. The environment that these motors are exposed to is relatively nonsevere (126F/1 psig/100 percent RH $1x10^6$ Rads). An engineering evaluation will be conducted to adequately assess the qualified life, effects of peak pressure on the installed motors, identify the required bearings and bearing lubricants and requisite replacement schedule, and provide qualification for the motor pigtail lead cable and splices. Upon completion of this analysis, this equipment is qualified.

Section 3.14

MOTORS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
43, 44	GE Type 5K6328 XC136A, 5K6336 XC166A	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Qualification addressed by Wyle Report 17655-MOT-1.1 (Reference 112), GE Analysis Report G-EN-0-164 (Reference 47) and GE BWR summary report QSR-111-A-04 (Reference 111).
- Accident environment is not severe.
- The existing qualification documentation does not adequately address the effects of pressure, aging and identify required lubricants.
- An additional analysis will be conducted to provide full qualification.
- When the additional analysis is completed, the equipment is qualified.

Details:

The NRC concluded that the documented evidence of qualification was not provided because GE Analysis Report G-EN-0-164 was not referenced as the evidence of qualification. Subsequently, Wyle Report 17655-MOT-1.1 and GE BWR summary report QSR-111-A-04 were provided. This documentation, in conjunction with GE Analysis Report G-EN-0-164, resolves the deficiencies with respect to similarity of the type 5K motors. The environment that these motors are exposed to is not severe (110F/1 psig/100 percent RH $1x10^6$ Rads). An engineering evaluation will be conducted to adequately assess the qualified life, effects of peak pressure on the installed motors, identify the required bearings and bearing lubricants and requisite replacement schedule and provide qualification for the motor pigtail lead cable and splices. Upon completion of this analysis, this equipment is qualified.

Section 3.15

MOTORS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	GE Types 5K184AL 218, 5K8143 16A73	N/A	N/A

RESOLUTION:

Summary:

- Items added to master list after NRC review.
- Qualification addressed by Wyle Report 17655-MOT-1.1 (Reference 112), GE Analysis Report G-EN-0-164 (Reference 47) and GE BWR Summary Report QSR-111-A-04 (Reference 111).
- Accident environment is not severe.
- Existing documentation does not adequately address effects of peak pressure, aging, bearings, lubricants, splices and similarity between random wound motor and form wound motor.
- An additional analysis will be conducted to provide full qualification.
- When the additional analysis is completed, the equipment is qualified.

Details:

These motors have been incorporated into the master list of equipment based on a detailed systems review conducted subsequent to the NRC review. These motors drive the reactor building emergency exhaust fans and the control rod drive pumps. Wyle Report 17655-MOT-1.1, GE Analysis Report G-EN-0-164 and GE BWR summary report QSR-111-A-04 have been provided. The environment that these motors are exposed to is relatively nonsevere (133F/1 psig/100 percent RH/2.8 x 10^6 Rads). An engineering analysis will be conducted to adequately assess aging, effects of peak pressure, identification of bearings and lubricants and requisite replacement intervals, pigtail lead cable and splices and the correlation between the form wound motor insulation system and the installed random wound motor insulation system. Upon completion of this analysis, this equipment is qualified.

Section 3.16

MOTORS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
41	GE Type 5K445AK-249A	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided at the time of NRC review.
- Qualification addressed by Wyle Report 17655-MOT-1.1 (Reference 112), GE Analysis Report, G-EN-0-164 (Reference 47),
- and GE BWR Summary Report QSR-111-A-04 (Reference 111).
- Existing documentation does not adequately address effects of peak pressure, aging, bearings, bearing lubricants, splices and similarity between random wound motor and form wound motor.
- An additional engineering analysis will be conducted to provide full qualification.
- When the additional analysis resolves the above deficiencies, the equipment is qualified.

Details:

- Documented evidence of qualification was not provided at the time of the NRC review, and an assessment was to be conducted to establish qualification. Consequently, the TER indicated that the documented evidence of qualification was inadequate. These motors drive reactor building closed loop cooling pumps. Wyle Report 17655-MOT-1.1, GE Analysis Report G-EN-0-164 and GE BWR summary report QSR-111-A-04 have been provided. Additional engineering analysis will be conducted to adequately assess aging, effects of peak pressure, identification of bearings and lubricants and requisite replacement intervals, pigtail lead cable and splices and the correlation between the form wound motor insulation system and the installed random wound motor insulation system. Upon completion of this analysis, the equipment is qualified.

Section 3.17

MOTORS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
91	*Howard 48-59214-005	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided at the time of NRC review.
- Qualification by Wyle Report 17655-MOT-2.1 (Reference 114).
- The equipment is qualified for 40-year normal life plus the 100-day accident requirement.

Details:

Documented evidence of qualification was not provided at the time of the NRC review and an assessment was to be conducted to establish qualification. Consequently, the TER indicated that the documented evidence of qualification was inadequate. Subsequently, Wyle Report, 17655-MOT-2.1, demonstrates that the equipment has a qualified life of 40 years plus the 100-day post-accident sampling requirement for the radiation only environment. Based on the documentation, the equipment is qualified.

* The NRC TER/SER identified this motor as being manufactured by Franklin; however, field verification has indicated that this motor was manufactured by Howard.

Section 3.18

SOLENOID ACTUATOR FOR RELIEF VALVE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
14	GE Solenoid CR9503-213C and UNIMAX Switch WHB-5	I.b	Documented evidence of qualification adequate

Summary:

- Qualification documentation was inadequate during the NRC evaluation.
- GE Test Report PEP 42963 (Reference 118) shows that similar equipment was tested to loss of coolant accident conditions.
- Wyle Report 17655-SVRV-1.1 (Reference 119) describes thermal, qualified life and radiation analyses of component materials. Some additional analysis will be conducted to show full qualification.
- Documentation will be obtained to establish similarity between tested and installed equipment.

RESOLUTION:

Details:

No qualification documentation was provided at the time of the NRC review; we stated that the equipment would be replaced if qualification could not be established. Subsequent to the TER , we obtained GE Test Report PEP 42963 which described simulated loss of coolant accident steam tests performed on Dresser Electromatic actuators. These tests were considered satisfactory in NRC/SER for other BWR plants except for thermal aging, qualified life and radiation testing. Wyle Report 17655-SVRV-1.1 addressed these deficiencies and determined on the basis of a materials evaluation and testing reported in PEP 42963 that the actuator is qualified for 40 years plus the required operating time under accident conditions. An engineering evaluation will be conducted to access equipment materials and establish the similarity of installed to tested equipment, for which additional documentation is being obtained. This equipment will be qualified when the additional materials evaluation and similarity documentation is obtained.

Section 3.19

INSULATING TAPE (ELECTRICAL)

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
63	Scotch Brand 3M 88	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided at the time of NRC review.
- Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports.
- When the analysis is completed, this equipment is qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review. Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports for the equipment. Upon completion of this analysis, this equipment is qualified.

Section 3.20

TERMINAL BLOCK

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
53	General Electric EB-5, EB-25	II.a	Documented evidence of qualification adequate Adequate similarity between equipment and test specimen established

RESOLUTION:

Summary:

- The TER concluded that NUS Report 1961-6080-001-R1 (Reference 18) did not provide documented evidence of qualification.
- Wyle Report 17655-TB-1.1 (Reference 57) addresses qualification. However, similarity has not been adequately substantiated.
- A detailed engineering analysis will be conducted to establish qualification.
- When the analysis is completed, this equipment is qualified.

Details:

The NRC concluded in the TER that the previous NUS Report 1961-6080-001-R1 (Reference 18) did not establish adequate similarity and documented evidence of qualification. Subsequently, Wyle Report 17655-TB-1.1 was obtained which addressed qualification. An additional detailed engineering analysis will be conducted to assess equipment materials and establish the similarity of installed to tested equipment for which additional documentation is being obtained to qualify the equipment. Upon completion of this analysis, this equipment is qualified.

Section 3.21

CABLE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
65	General Electric/ Vulkene	II.a	Adequate similarity between equipment and test specimen established

RESOLUTION:

Summary:

- Similarity between tested and installed cable was not established.
- Wyle Report 17655-CBL-1 (Reference 157), NUS Analysis NUS-1961-G080-002 (Reference 10), and FIRL Test Report F-C4497-2 (Reference 11) address qualification.
- We have identified installed cable and is attempting to establish similarity to cable tested in FIRL Report F-C4497-2.
- A qualified life evaluation will be determined based on thermal aging in FIRL Report F-C4497-2.
- The equipment will be qualified if similarity is established.
- Testing will be conducted if adequate similarity cannot be established.

Details:

Sufficient information to identify the similarity of cable installed with respect to that tested in FIRL Test Report No. F-C4497-2 was not provided at the time of the NRC review. Subsequently, Wyle performed preliminary cable qualification assessments described in Wyle Report 17655-CBL-1. We have identified six safety related Vulkene-insulated cables installed in our plant by GE cable specification SI index number (58073, 57275, 58745, 58743, 53032, 58146). A qualified life evaluation will be determined based on thermal aging conducted in FIRL Report F-C4497-2. We are also developing documentation which establishes the SI indices of cable tests reported in FIRL Test Report No. F-C4497-2 in order to establish similarity. If similarity is established, the cable will be qualified. If similarity cannot be established, then qualification testing will be conducted.

Section 3.22

CABLE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
94	Rockbestos/RSS 6104	IV	Documentation not made available

RESOLUTION:

Summary:

- No qualification documentation was provided for the TER/SER review.
- This equipment is being replaced with qualified Rockbestos RSS 6104-1081.

Details:

Rockbestos test report provides evidence of qualification, however, this test report was not provided to NRC for review. The Rockbestos coax cable is used with General Atomics radiation detectors. The TER/SER discussed certain anomalies involving Rockbestos coax which were observed during qualification tests of the radiation detectors reported in a General Atomics Test Report (Reference 54). Based on vendor contact, we have determined that the Rockbestos coax installed in our plant is similar to the cable which experienced testing anomalies. These anomalies were applicable to the loss of coolant accident/high energy line break test, not radiation which is the only harsh environment for these detectors/cable. We will replace with Rockbestos RSS 6104-1081. Following the installation of the replacement cable, this Rockbestos cable item will be deleted from the master list.

Section 3.23

INSULATING TAPE FOR 5KV TERMINAL INSULATION

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
70	Kerite Splicing Compound Tape	II.a	Documented evidence of qualification adequate

Summary:

- Documented evidence of qualification not provided.
- Wyle Report 17655-TPE-4.1 (Reference 100) addresses qualification.
- Isomedix Test Report I-R975-01 will be used to establish aging qualification by analysis.
- When the additional analysis is completed, the equipment is qualified.

RESOLUTION:

Details:

Documented evidence of qualification was not provided at the time of the NRC review. Subsequently, Wyle Report 17655-TPE-4.1 addressed qualification of the Kerite insulating tape. However, the Wyle Report addresses qualification; however, aging qualification has not been established at this time. Isomedix Test Report, I-R975-01 has been obtained and is being used for establishing aging evaluation. Upon completion of this analysis, this equipment is qualified.

Section 3.24

CABLE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
71	Kerite/Quadraplex 5kV Power Cable	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documentation was not provided at the time of NRC review.
- Qualification could not be established by ongoing assessments.
- Wyle Test Report 47176-1 (Reference 181) has been received.
- Upon review of this test report, this cable will be qualified.

Details:

No qualification reports were available at the time of the NRC review. However, we committed to performing an ongoing qualification assessment of this cable. This assessment included a search for possible test reports and an attempt by Kerite to determine if our cables were similar to other qualified Kerite power cables. We were unable to obtain adequate documentation, and consequently contracted Wyle Labs to perform qualification testing of the cable. The testing program has been completed. Wyle Test Report 47176-1 demonstrated that the cable has successfully withstood exposure to our steam tunnel conditions. Upon completion of review of the report and other pertinent vendor data, this cable will be qualified.

Section 3.25

INSTRUMENT CABLE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
54	Raychem/RG59B/U	II.a	Adequate similarity between equipment and test specimen established

RESOLUTION:

Summary:

- This coaxial cable is not used in a safety related application requiring environmental qualification.
- This cable has been deleted from the list because it is outside of the scope of 10CFR50.49.

Details:

Similarity between the installed cable and test documentation could not be established for the NRC review. Subsequent to the TER, we have determined that the subject cable is not used for any safety related applications requiring environmental qualification and can therefore be deleted from the list of equipment requiring qualification because it is outside of the scope of 10CFR50.49.

Section 3.26

PENETRATION-CONNECTOR ASSEMBLIES

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
52	D. G. O'Brien 5, 19 and 28 Pin #16 and 4 Pin #8	II.a	Aging degradation evaluated adequately Qualified life or replacement schedule established (if required) Criteria regarding spray satisfied Criteria regarding radiation satisifed

RESOLUTION:

Summary:

- TER deficiencies included aging, replacement interval, radiation and spray effects.
- FIRL Test Report F-C4879-1 (Reference 8), Wyle Report 17655-PC-1.1 (Reference 160) and Patel Report PEI-TR-82-12-101 (Reference 70) support qualification of this equipment.
- Additional analyses and documentation are required to demonstrate full qualification.

Details:

FIRL Test Report F-C4879-1 and NUS Analysis 1961-005-001 were reviewed by the NRC in the TER. TER-identified deficiencies included: inadequate evaluation of thermal aging degradation and replacement interval; no testing or evaluation of spray effects; and test irradiation exposure (26 Mrad) less than the plant drywell TID envelope conditions (50 Mrad). Subsequent evaluations reported in Wyle Report 17655-PC-1.1 and Patel Report PEI-TR-82-12-101 concluded that connector thermal and radiation materials degradation due to plant service conditions were insufficient to adversely affect qualification. The evaluations are currently being revised to include additional materials data and incorporate vendor test information on spray effects, thereby resolving all TER concerns. The Wyle and Patel technical evaluations, in conjunction with loss of coolant accident tests described in FIRL Test Report F-C4879-1, will demonstrate full qualification of the equipment. When the additional analyses is completed, this equipment is qualified.

Section 3.27

CONNECTOR

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
92, 93	D. G. O'Brien C10C0001G14, C10C1001G21	II.a	Documented evidence of qualification adequate

Summary:

- Qualification references were not provided for the NRC review.
- Wyle Report 17655-PC-1.1 (Reference 160), FIRL Test Report F-C4879-1 (Reference 8) and Patel Technical Report PEI-TR-82-12-101 (Reference 70) establish qualification.
- This equipment is qualified.

RESOLUTION:

Details:

No qualification references were provided for the NRC review. Subsequent to the TER, Wyle Report 17655-PC-1.1 demonstrated, through a combination of testing and analysis, that these connectors were qualified. This report documents similarity of these connectors to the D. G. O'Brien connector assemblies tested in FIRL Test Report F-C4879-1 (see Section 3.26). Material evaluations for thermal and radiation degradation were performed in Wyle Report 17655-PC-1.1 and Patel Report PEI-TR-82-12-101. Although these reports are currently being revised to incorporate additional materials data, the revisions are not applicable to this equipment. This equipment is qualified.

Section 3.28

FILLER FOR 5KV TERMINAL

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
64	GE/227	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided at the time of NRC review.
- Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports.

Details:

Documented evidence of qualification was not provided at the time of the NRC review. Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports for the equipment.

Section 3.29

FILLER FOR 5KV TERMINAL

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
55	J-M Duxseal	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided at the time of NRC review.
- Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports.

Details:

Documented evidence of qualification was not provided at the time of the NRC review. Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports for the equipment.

Section 3.30

INSULATING TAPE (ELECTRICAL)

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
67	GE/8380	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided at the time of NRC review.
- Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports.

Details:

Documented evidence of qualification was not provided at the time of the NRC review. Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports for the equipment.

Section 3.31

SPLICE KIT VARNISH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
66	*Westinghouse 3109 Black Insulating Varnish	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided at the time of NRC review.
- Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports.

Details:

Documented evidence of qualification was not provided at the time of the NRC review. Qualification will be conducted by a detailed engineering analysis and by obtaining applicable test reports for the equipment.

* The NRC TER/SER identified this varnish as being GE 1309. Review of original plant specifications indicated that Westinghouse 3109 was used.

Section 3.32

CABLE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	ITT RG-59/U Coaxial Cable	N/A	N/A

Summary:

- This is a replacement item for the Rockbestos RSS 6104 cable which will be deleted. (See Section 3.22.)
- FIRL Test Report F-A5550-8 establishes qualification (Reference 154).
- A 40-year qualified life will be established for our specific service conditions.
- The equipment is qualified.

RESOLUTION:

Details:

The ITT coax cable is a replacement item for the Rockbestos RSS 6104 cable which will be deleted (see Section 3.22). This equipment is qualified by FIRL Test Report F-A5550-8. The 40-year qualified life for our normal temperature and maximum conductor operating temperature will be established by an additional analysis. This cable is qualified.

Section 3.33

SEALANT FOR 5KV TERMINAL INSULATION

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
68	Kerite Cement	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided.
- Wyle Report 17655-TPE-4.1 (Reference 100) addresses qualification.
- A plant specific analysis will be performed using Isomedix Test Report, I-R975-01 (Reference 73) to establish qualification. Supplemental analysis will be provided as necessary.
- Upon completion of this analysis, this equipment will be qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review. Subsequently, Wyle Report 17655-TPE-4.1 was obtained which addresses qualification of the Kerite sealant type cement. The Wyle Report addresses qualification; however, aging qualification has not been established at this time. Therefore, a plant specific analysis will be performed using the Isomedix Test Report, I-R975-01. Supplemental analysis will be provided as necessary. Upon completion of this analysis, this equipment will be qualified.

Section 3.34

UNDERCOAT FOR 5KV TERMINAL FILLER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
69	Kerite Friction Tape	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided.
- Wyle Report 17655-TPE-4.1 (Reference 100) addresses qualification.
- A plant specific analysis will be performed using Isomedix Test Report I-R975-01 (Reference 73) to establish qualification. Supplemental analysis will be provided as necessary.
- When the additional analysis is completed, the equipment is qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review. Subsequently, Wyle Report 17655-TPE-4.1 was obtained which addresses qualification of the Kerite friction tape. The Wyle Report addresses qualification; however, aging qualification has not been established at this time. Therefore, a plant specific analysis will be performed using the Isomedix Test Report, I-R975-01. Supplemental analysis will be provided as necessary. Upon completion of this analysis, this equipment will be qualified.

Section 3.35

VACUUM SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
37	Mercoid CP4122	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided.
- Qualification documentation could not be found.
- This equipment will be replaced with qualified SOR model 52TA-B116-NX-C1A vacuum switches.
- The SOR vacuum switches are qualified by Acton Test Report 17344-82N-C, Revision 1 (Reference 156).
- The replacement equipment is qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review; therefore, a qualification assessment was to be conducted. Subsequently, an engineering evaluation and literature search revealed that the existing equipment contained materials susceptible to radiation. This equipment also has mercury switches which are susceptible to transient phenomena caused by temperature variation and radiation exposure. In addition, qualification documentation could not be found. Therefore, the existing mercoid vacuum switches will be replaced with environmentally qualified vacuum switches manufactured by SOR, Inc., Model 52TA-B116-NX-C1A. The SOR vacuum switches are qualified by Acton Test Report 17344-82N-C, Revision 1. To obtain similarity between the test specimen and the model 52 TA-B116-NX-C1A vacuum switch, we are procuring the SOR, Inc. 52TA-B116-NX-C1A switches to be fabricated with the same materials (o-rings, gaskets, insulators, etc.) which were installed in the model 12TA-B4-NX-C1A-JJTTX6 switches tested by Acton and described in Report 17344-82-NC. These replacement vacuum switches are qualified.

Section 3.36

PRESSURE SWITCHES

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Mercoid DA23-156 and XDAW-43	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list based on systems review.
- Qualification documentation could not be found.
- This equipment will be replaced with qualified SOR model 12TA-BB4-NX-C1A-TTJJX6 pressure switches.
- The SOR pressure switches are qualified by Acton Test Report 18878-84N-2 (Reference 155).
- A plant specific aging evaluation will be conducted to extend the qualified life.
- The replacement equipment is qualified.

Details:

This equipment was added to the master list subsequent to the NRC review based on detailed systems review. An engineering evaluation and literature search revealed that the existing equipment contained materials susceptible to radiation. This equipment also has mercury switches which are susceptible to transient phenomena caused by temperature variation and radiation exposure. In addition, qualification documentation could not be found. The existing mercoid pressure switches will be replaced with qualified pressure switches manufactured by SOR Inc., model 12TA-BB4-NX-C1A-TTJJX6. The SOR pressure switches are qualified by Acton Test Report 18878-84N-2. A plant specific aging evaluation will be conducted to extend the present 20 year qualified life. The replacement pressure switches are qualified.

Section 3.37

PRESSURE SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
85	Static-O-Ring 5NNKK351C1A	II.a	Documented evidence of qualification adequate.

RESOLUTION:

Summary:

- Documented evidence of qualification not provided.
- Qualification is established by Wyle Report 17655-PSW-2 (Reference 121) and Patel Report PEI-TR-82-12-18 (Reference 133).
- The only harsh environment is radiation.
- This equipment is qualified for a 40 year life.

Details:

Documented evidence of qualification was not provided at the time of the NRC review; therefore, a qualification assessment was to be conducted. Subsequently, Wyle Report 17655-PSW-2 and Patel Report PEI-TR-82-12-18 were obtained which establishes qualification for this equipment. This pressure switch is used in the reactor vessel post-accident sampling system and is required to remain functional after a loss of coolant accident. The pressure switch is located in the reactor building at the 237 foot elevation and is required to be qualified for a radiation environment. This equipment is qualified for a 40 year life.

Section 3.38

PRESSURE SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Barksdale B2S-H12SS	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- Wyle Report 17655-PSW-6 (Reference 139) addresses qualification; however, qualification is not established.
- The equipment is in an enclosure and consists of a terminal block, wiring, a relay and a pressure.switch.
- A detailed engineering analysis will be conducted to establish qualification after which this equipment will be qualified.

Details:

This equipment was added to the master list subsequent to the NRC review based on our detailed systems review. The equipment was furnished by Dresser Industries and is located in the reactor building east or west instrument rooms. This equipment actuates the automatic depressurization system electromatic pressure relief valves for reactor vessel depressurization. Based on actual field verification, we have determined that this equipment consists of an enclosure which contains the following control circuitry: terminal block, wiring, Barksdale model B2S-H12SS pressure switch and a relay. Wyle Report 17655-PSW-6 addresses qualification; however qualification has not been fully established for the entire control circuitry at this time. A detailed engineering analysis will be conducted to establish qualification for all components within the enclosure based on the accident environmental conditions and system functional requirements. Upon completion of the engineering analysis, this equipment will be qualified.

Section 3.39

CABLE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
97	*Kerite FR2/FR Thermocouple Cable	IV	Documentation not made available

Summary:

- Documentation was unavailable for the NRC review.
- The cable manufacturer has prepared a plant-specific report (Reference 79) which documents qualification.
- This cable is qualified for a 40 year life.

RESOLUTION:

Details:

At the time of the TER review, we presented information which showed there were no qualification deficiencies for this cable; however, test reports were not available for NRC's review. Kerite Company has prepared a qualification report (Reference 79) for the subject cable entitled "Nine Mile Point Unit 1 - NMPC - Qualification Documentation for FRII/FR Signal and Instrumentation Cables," dated October 17, 1980. This report documents loss of coolant accident testing which exceeds our accident conditions and includes analyses showing cable qualified life exceeds 40 years. We have evaluated this qualification report and concludes that the subject cable is qualified. This cable is qualified for a 40 year life.

* The NRC TER/SER identified this as 16 AWG. Review of plant specific information indicates FR2/FR was used.

Section 3.40

RADIATION DETECTION

TER NO.	MANUFACTURER/MODEL	NRG CATEGORY	DEFICIENCY
86	General Atomics RD-23	II.a	Adequate similarity between equipment and test specimen established Program established to identify aging degradation Criteria regarding radiation satisifed

RESOLUTION:

Summary:

- NRC deficiencies included radiation and electrical interface qualification.
- General Atomic Test Report E-254-960 (Reference 54) and Wyle Report 17655-RAD-2 (Reference 93) support qualification.
- This equipment is qualified.

Details:

The NRC qualification deficiencies included radiation qualification and identification and qualification of the radiation detector electrical interfaces. Wyle Report 17655-RAD-2 has analyzed radiation effects on the detector materials and concluded that irradiation of the detector prior to loss of coolant accident/high energy line break testing described in General Atomic Test Report E-254-960 would not have affected detector performance. The detectors and their associated equipment (i.e., cable and electrical interface connectors) are subject to a radiation environment only. Electrical interface anomalies which occurred during General Atomic's test program were reviewed, and it was determined that these anomalies were applicable to the loss of coolant accident/high energy line break test only, not radiation. This equipment is qualified.

Section 3.41

RADIATION DETECTOR

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	GE 194X927	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added into the master list based on a detailed system review conducted subsequent to the NRC review.
- Radiation is the only harsh environment.
- Qualified by Wyle Report, 17655-RAD-1 (Reference 85) and GE BWR EQ Summary Report, QSR-015-A-01 (Reference 77).
- Equipment is qualified.

Details:

This equipment has been incorporated into the master list of equipment based on a detailed systems review conducted subsequent to the NRC review. These detectors (RE-RN04A-5, 04B-5, 05C-10) are located in the Reactor Building. The only harsh environmental parameter for which these actuators should be qualified is radiation. The equipment is qualified by Wyle Report 17655-RAD-1 and GE BWR EQ Summary Report QSR-015-A-01. The equipment is qualified.

Section 3.42

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
45, 46	Namco D2400X D2400XR	I.b	Adequate similarity between equipment and test specimen established

RESOLUTION:

Summary:

- NUS qualification assessment report 1961-N007-001 was deficient with respect to similarity.
- This equipment will be replaced with environmentally qualified Namco model EA180 position switches.
- Wyle Report 17655-LSW-1.1 Revision A (Reference 56), Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 (Reference 51) establish qualification.
- Namco qualified EC210 series receptacle/plug connectors or Conax electrical seal assemblies will be used.
- A plant specific qualified life evaluation will be conducted.
- The vendor test report for the EC210 series connectors will be obtained, if required. Conax Report IPS-1079 establishes qualification for the Conax seal assemblies.

Details:

The NRC review concluded that NUS qualification assessment report 1961-N007-001 was deficient with respect to establishment of adequate similarity between the loss of coolant accident test specimen, Namco model SL3 and the installed equipment, Namco model D2400X. The Namco model D2400X position switch will be replaced with environmentally qualified Namco model EA180 position switches. Wyle report 17655-LSW-1.1 revision A, Patel report PEI-TR-82-12-9 and Namco Test Report QTR-105 establish environmental qualification. In order to assure proper sealing of the switch, environmentally qualified Namco series EC210 receptacle/plug connectors or Conax electrical seal assemblies will be used. The vendor has established a qualified life of 20 years for the Namco switches and 40 years for the receptacle/plug connectors. A qualified life for the Conax seal assemblies must be established. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. The vendors test report substantiating qualification for the EC210 receptacle/plug connectors will be obtained if this seal is used. If the Conax seal assembly is used, Conax report IPS-1079 establishes qualification for the seal assemblies. Upon completion of the plant specific qualified life evaluation and receipt of the series EC210 connector test report (if required), this replacement equipment will be fully qualified.

Section 3.43

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Namco D2400X	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- This equipment will be replaced with environmentally qualified Namco Model EA180 position switches.
- Wyle Report 17655-LSW-1.1 Revision A (Reference 56), Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 (Reference 51) establish qualification.
- Namco qualified EC210 series receptacle/plug connectors or Conax electrical seal assemblies will be used.
- A plant specific qualified life evaluation will be conducted.
- The vendor test report for the EC210 series connectors will be obtained, if required. Conax Report IPS-1079 establishes qualification for the Conax seal assemblies.

Details:

This equipment was added to the master list of equipment subsequent to the NRC review based on our detailed systems review. The Namco Model D2400X position switch will be replaced with environmentally qualified Namco Model EA180 position switches. Wyle Report 17655-LSW-1.1, revision A, Patel qualification assessment report PEI-TR-82-12-9, and Namco Test Report QTR-105 establish environmental qualification. In order to assure proper sealing of the switch, environmentally qualified series EC210 receptacle/plug connectors or Conax electrical seal assemblies will be used. The vendor has established a qualified life of 20 years for the Namco switches and 40 years for the receptacle/plug connectors. A qualified life for the Conax seal assemblies must be established. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. The vendors test report substantiating qualification for the EC210 receptacle/plug connectors will be obtained if the seal is used. If the Conax seal assemblies are used, Conax Report IPS-1079 establishes qualification for the seal assemblies. Upon completion of the plant specific qualified life evaluation and receipt of the series EC210 connector test report, this replacement equipment will be fully qualified.

Section 3.44

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Fisher Control 304	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- This equipment will be replaced with environmentally qualified Namco model EA180 position switches.
- Wyle Report 17655-LSW-1.1 Revision A (Reference 56), Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 (Reference 51) establish qualification.
- Namco qualified EC210 series receptacle/plug connectors or Conax electrical seal assemblies will be used.
- A plant specific qualified life evaluation will be conducted.
- The vendor test report for the EC210 series connectors will be obtained, if required. Conax Report IPS-1079 establishes qualification for the Conax seal assemblies.

Details:

This equipment was added to the master list of equipment subsequent to the NRC review based on a detailed systems review. The Fisher control model 304 position switch will be replaced with environmentally qualified Namco model EA180 position switches. Wyle Report 17655-LSW-1.1, Revision A, Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 establish environmental qualification. In order to assure proper sealing of the switch, environmentally qualified Namco series EC210 receptacle/plug connectors or Conax electrical seal assemblies will be used. The vendor has established a qualified life of 20 years for the Namco switches and ten years for the receptacle/plug connectors. A qualified life for the Conax seal assemblies must be established. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. The vendors test report substantiating qualification for the EC210 receptacle/plug connectors will be obtained if this seal is used. If the Conax seal assembly is used, Conax Report IPS-1079 establishes qualification for the seal assemblies. Upon completion of the plant specific qualified life evaluation and receipt of the series EC210 connector test report (if required), this lacement equipment will be fully qualified.

Section 3.45

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Namco EA-180	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- Wyle Report 17655-LSW-1.1 Revision A (Reference 56), Patel report PEI-TR-82-12-9 and Namco Test Report QTR-105 (Reference 51) establish qualification.
- Namco qualified EC210 series receptacle/plug connectors or Conax electrical seal assemblies will be used.
- A plant specific qualified life evaluation will be conducted.
- The vendor test report for the EC210 series connectors will be obtained, if required. Conax Report IPS-1079 establishes qualification for the Conax seal assemblies.

Details:

This equipment was added to the master list of equipment subsequent to the NRC review based on our detailed systems review. Wyle Report 17655-LSW-1.1 revision A, Patel Report PEI-TR-82-12-9, and Namco Test Report QTR-105 establish environmental qualification. In order to assure proper sealing of the switch, environmentally qualified series Namco EC210 receptacle/plug connectors or Conax electrical seal assemblies will be used. The vendor has established a qualified life of 20 years for the Namco switches and 40 years for the receptacle/plug connectors. A qualified life for the Conax seal assemblies must be established. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. The vendors test report substantiating qualification for the EC210 receptacle/plug connectors will be obtained, if this seal is used. If the Conax seal assemblies are used, Conax Report IPS-1079 establishes qualification for the seal assemblies. Upon completion of the plant specific qualified life evaluation and receipt of the series EC210 connector test report, this replacement equipment will be fully qualified.

Section 3.46

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
50	Namco SL3L and SL3C58TW	II.a	Criteria regarding radiation satisfied

RESOLUTION:

Summary:

- The NRC incorrectly classified TER item 50 as qualified.
- We believe that TER item 50 is deficient with respect to similarity and radiation.
- This equipment will be replaced with environmentally qualified Namco Model EA180 position switches.
- Wyle Report 17655-LSW-1.1 Revision A (Reference 56), Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 (Reference 51) establish qualification.
- Namco qualified EC210 series receptacle/plug connectors or Conax electrical seal assemblies will be used.
- A plant specific qualified life evaluation will be conducted.
- The vendor test report for the EC210 series conductors will be obtained, if required. Conax Report IPS-1079 establishes qualification for the Conax seal assemblies.

Details:

The NRC considered TER item 50 to be qualified and were placed in NRC Category I.a.; TER item 49 was found to be deficient with respect to radiation and was placed in NRC Category I.b because we stated that the equipment would be replaced if qualification could not be established. Subsequent evaluation of GE report QSR-014-A-01 for this equipment has revealed that adequate radiation qualification and similarity between the loss of coolant accident Namco switch model SL3MDP-DT and the installed Namco switch models SL3L and SL3C58TW was not established. Therefore, the TER evaluation was in error. Namco switch models SL3L and SL3C58TW will be replaced with environmentally qualified Namco model EA180 position switches. Wyle Report 17655-LSW-1.1 revision A, Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 establish environmental qualification. In order to assure proper sealing of the switch, environmentally qualified, Namco series EC210 receptacle/plug connectors or Conax electrical seal assemblies will be used. The vendor has established a qualified life of 20 years for the Namco switches and 40 years for the receptacle/plug connectors. A qualified life for the Conax seal assemblies must be established. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. The vendors test report substantiating qualification for the EC210 receptacle/plug connectors will be obtained, if this seal is used. If the Conax seal assembly is used, Conax Report IPS-1079 establishes qualification for the seal assemblies. Upon completion of the plant specific qualified life evaluation and receipt of the series EC210 connector test report, this replacement equipment will be fully qualified.

Section 3.47

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Namco EA170	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- This equipment will be replaced with environmentally qualified Namco Model EA180 position switches.
- Wyle Report 17655-LSW-1.1 Revision A (Reference 56), Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 (Reference 51) establish qualification.
- Namco qualified EC210 series receptacle/plug connectors or Conax electrical seal assemblies will be used.
- A plant specific qualified life evaluation will be conducted.
- The vendor test report for the EC210 series connectors will be obtained, if required. Conax Report IPS-1079 establishes qualification for the Conax seal assemblies.

Details:

This equipment was added to the master list of equipment subsequent to the NRC review based on a detailed systems review. The Namco Model EA170 position switches will be replaced with environmentally qualified Namco Model EA180 position switches. Wyle Report 17655-LSW-1.1, Revision A, Patel Report PEI-TR-82-12-9, and Namco Test Report QTR-105 establish environmental qualification. In order to assure proper sealing of the switch, environmentally qualified Namco series EC210 receptacle/plug connectors or Conax electrical seal assemblies will be used. The vendor has established a qualified life of 20 years for the Namco switches and 40 years for the receptacle/plug connectors. A qualified life for the Conax seal assemblies must be established. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. The vendors test report substantiating qualification for the EC210 receptacle/plug connectors will be obtained, if this seal is used. If the Conax seal assembly is used, Conax Report IPS-1079 establishes qualification for the seal assemblies. Upon completion of the plant specific qualified life evaluation and receipt of the series EC210 connector test report, this replacement equipment will be fully qualified.

Section 3.48

POSITION LIMIT SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
87	*Microswitch DTF2-2RN	II.a	Documented evidence of qualification adequate

Summary:

- Documented evidence of qualification not provided.
- Qualification is established by Wyle Report 17655-LSW-13 (Reference 135).
- The only harsh environment is radiation.
- This equipment is qualified.

RESOLUTION:

Details:

Documented evidence of qualification was not provided at the time of the NRC review; therefore, a qualification assessment was to be conducted. Subsequently, Wyle Report 17655-LSW-13 was obtained, which establishes qualification for these position switches. These switches are located in the reactor building and are required to be qualified for a radiation environment only. These position switches are qualified.

* The NRC TER/SER indicated Microswitch Model F. Plant specific information indicates Microswich DTF2-2RN.

Section 3.49

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Laurence 506WA-26DC-SW-PS	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list after the NRC review.
- Qualification is established by Wyle Report 17655-LSW-8 (Reference 116).
- The only harsh environment is radiation.
- This equipment is qualified.

Details:

This equipment was added to the master equipment list subsequent to the NRC review based on a detailed systems review. Subsequently, Wyle Report 17655-LSW-8 was obtained which establishes qualification. These switches are located in the reactor building and are required to be qualified for a radiation environment only. These switches are qualified.

Section 3.50

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
48	Microswitch 11LS1 and 1LS1	I.b	Adequate similarity between equipment and test specimen established

RESOLUTION:

Summary:

- NUS Assessment Report 1961-M302-001 was deficient with respect to similarity.
- The only harsh environment is radiation when the equipment is required to function.
- Qualification is established for the 11LS1 switch by Wyle Report 17655-LSW-12 (Reference 125).
- Qualification is established for the 1LS1 switch by Wyle Report 17655-LSW-11 (Reference 124).
- This equipment is qualified.

Details:

The NRC review concluded that NUS Assessment Report 1961-M302-001 did not establish similarity between the test specimen model LSA28-1 and the installed switches model 11LS1 and 1LS1; we stated these switches will be replaced if qualification could not be substantiated. Subsequently, we have determined that a model 1LS1 switch is also mounted adjacent to the model 11LS1 switch identified in the TER. Wyle Report 17655-LSW-12 establishes qualification for the model 11LS1 switch; Wyle Report 17655-LSW-11 establishes qualification for the model 1LS1 switch. The switches are located in the reactor building and require qualification for a radiation environment only. This equipment is qualified.

Section 3.51

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Microswitch DTE6-2RN and DTE-2RN	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list after the NRC review.
- Qualification is established by Wyle Report 17655-LSW-10 (Reference 123).
- The only harsh environment is radiation.
- This equipment is qualified.

Details:

This equipment was added to the master equipment list subsequent to the NRC review based on a detailed systems review. Subsequently, Wyle Report 17655-LSW-10 was obtained which establishes qualification. These switches are required to be functional after a loss of coolant accident; the switches are located in the reactor building and are required to be qualified for a radiation environment only. These switches are qualified.

Section 3.52

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Microswitch LSD4L	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list after the NRC review.
- Qualification is established by Wyle Report 17655-LSW-09 (Reference 117).
- The only harsh environment is radiation.
- This equipment is qualified.

Details:

This equipment was added to the master equipment list subsequent to the NRC review based on a detailed systems review. Subsequently, Wyle Report 17655-LSW-09 was obtained which establishes qualification. The switches are located in the reactor building and are required to be qualified for a radiation environment only. These switches are qualified.

Section 3.53

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Microswitch BZE6-2RN	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list after the NRC review.
- Qualification is established by Wyle Report 17655-LSW-14 (Reference 127).
- The only harsh environment is radiation.
- This equipment is qualified.

Details:

This equipment was added to the master equipment list subsequent to the NRC review based on a detailed systems review. Subsequently, Wyle Report 17655-LSW-14 was obtained which establishes qualification. The switches are located in the reactor building and are required to be qualified for a radiation environment only. These switches are qualified.

Section 3.54

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
47	Namco D2400X	I.b	Adequate similarity between equipment and test specimen established

RESOLUTION:

Summary:

- NUS qualification assessment report 1961-N007-001 was deficient with respect to similarity.
- This equipment will be replaced with environmentally qualified Namco model EA180 position switches.
- Wyle Report 17655-LSW-1.1 Revision A (Reference 56), Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 (Reference 51) establish qualification.
- A plant specific qualified life evaluation will be conducted.
- The replacement equipment will be qualified upon completion of qualified life evaluation.

Details:

The NRC review concluded that NUS qualification assessment report 1961-N007-001 was deficient with respect to establishment of adequate similarity between the loss of coolant accident test specimen, Namco model SL3 and the installed equipment, Namco model D2400X. The Namco model D2400X position switch will be replaced with environmentally qualified Namco model EA180 position switch and Wyle Report 17655-LSW-1.1 revision A, Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 establish environmental qualification. The vendor has established a qualified life of 20 years for the Namco switches. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. These switches are located in the reactor building and do not need to be environmentally sealed for high energy line breaks because they are used for loss of coolant accident mitigation only. Upon completion of the plant specific qualified life, this replacement equipment will be fully qualified.

Section 3.55

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Namco D2400X	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- This equipment will be replaced with environmentally qualified Namco model EA180 position switches.
- Wyle Report 17655-LSW-1.1 Revision A (Reference 56), Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 (Reference 51) establish qualification.
- A plant specific qualified life evaluation will be conducted.
- The replacement equipment will be qualified upon completion of qualified life evaluation.

Details:

This equipment was added to the master list of equipment subsequent to the NRC review based on a detailed systems review. The Namco model D2400X position switches will be replaced with environmentally qualified Namco model EA180 position switches. Wyle Report 17655-LSW-1.1, Revision A, Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 establish environmental qualification. The vendor has established a qualified life of 20 years for the Namco switches. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. These switches are located in the reactor building and do not need to be environmentally sealed for high energy line breaks because they are used for loss of coolant accident mitigation only. Upon completion of the plant specific qualified life, this replacement equipment will be fully qualified.

Section 3.56

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Namco EA170	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- This equipment will be replaced with environmentally qualified Namco model EA180 position switches.
- Wyle Report 17655-LSW-1.1 Revision A (Reference 56), Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 (Reference 51) establish qualification.
- A plant specific qualified life evaluation will be conducted.
- The replacement equipment will be qualified upon completion of qualified life evalution.

Details:

This equipment was added to the master list of equipment subsequent to the NRC review based on a detailed systems review. The Namco model EA170 position switches will be replaced with environmentally qualified Namco model EA180 position switches. Wyle Report 17655-LSW-1.1, Revision A, Patel Report PEI-TR-82-12-9 and Namco Test Report QTR-105 establish environmental qualification. The vendor has established a qualified life of 20 years for the Namco switches. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. These switches are located in the reactor building and do not need to be environmentally sealed for high energy line breaks because they are used for loss of coolant accident mitigation only. Upon completion of the plant specific qualified life, this replacement equipment will be fully qualified.

Section 3.57

POSITION SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
49, 100	Namco SL3C58TW	II.a	Adequate similarity between equipment and test specimen established Criteria regarding radiation satisfied

Summary:

- The NRC incorrectly classified TER item 100 as qualifed.
- We believe that TER items 49 and 100 are deficient with respect to similarity and radiation.
- This equipment will be replaced with environmentally qualified Namco model EA740 position switches.
- Wyle Report 17655-LSW-4.1 (Reference 90), Patel report PEI-TR-82-12-6 and Namco Test Report QTR-111 (Reference 89) establish qualification.
- Namco qualified EC21Q series receptacle/plug connectors or Conax electrical seal assemblies will be used.
- A plant specific qualified life evaluation will be conducted.
- The vendor test report for the EC210 series connectors will be obtained if required. Conax Report IPS-1079 establishes qualification for the Conax seal assemblies.

RESOLUTION:

Details:

The NRC considered TER item 100 to be qualified and was placed in NRC Category I.a., TER item 49 was found to be deficient with respect to radiation and was placed in NRC Category I.b because we stated that the equipment would be replaced if qualification could not be established. Subsequent evaluation of GE Report QSR-014-A-01 for this equipment has revealed that adequate radiation qualification and similarity between the loss of coolant accident test Namco switch model SL3MDP-DT and the installed Namco switch model SL3C58LW was not established. Therefore, the TER evaluation was in error. Namco switch model SL3C58TW will be replaced with environmentally qualified Namco model EA740 position switches. Wyle Report 17655-LSW-4.1, Patel Report PEI-TR-82-12-6 and Namco Test Report QTR-111 establish environmental qualification. In order to assure proper sealing of the switch, environmentally qualified Namco series EC210 receptacle/plug connectors or Conax electrical seal assemblies will be used. The vendor has established a qualified life of 20 years for the Namco switches and 40 years for the receptacle/plug connectors. A qualified life for the Conax seal assemblies must be established. A plant specific engineering evaluation will be conducted to establish a qualified life for this equipment. The vendor's test report substantiating qualification for the EC210 receptacle/plug connectors will be obtained if this seal is used. If the Conax seal assembly is used, Conax Report IPS-1079 establishes qualification for the seal assemblies. Upon completion of the plant specific qualified life evaluation and receipt of the series EC210 connector test report (if required), this replacement equipment will be fully qualified.

Section 3.58

MOTOR CONTROL CENTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
72	GE IC7700	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided at the time of the NRC review.
- GE is presently conducting an analysis to establish qualification.
- When the analysis is completed, the equipment will be qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review, and an assessment was to be conducted to establish qualification. Consequently, the TER indicated that the documented evidence of qualification was inadequate. Presently, GE is conducting an engineering analysis to establish qualification. When the engineering analysis is completed, the equipment will be qualified.

Section 3.59

MOTOR GENERATOR-SET

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	GE 5LS4404 A22Y25	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added into the master list based on a detailed system review conducted subsequent to the NRC review.
- GE is presently conducting an analysis to establish qualification. When the analysis is completed, the equipment will be qualified.

Details:

This equipment (MG-162 and MG-172) was added to the master list based on a detailed systems review subsequent to the NRC review. This equipment is located in the general area of the turbine building on elevation 277 feet. The postulated high energy line break, which exposes this equipment to a harsh environment is a steam or feedwater line break in the steam tunnel. The general areas of the turbine building are less than 133F under the postulated line break event; therefore, this equipment is not exposed to an excessively harsh environment. GE is presently conducting an engineering analysis to establish qualification. When the engineering analysis is completed, the equipment will be qualified.

Section 3.60

1-KW ELECTRIC STRIP HEATERS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Thermon TFK	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- These heaters were originally installed to prevent condensation on charcoal adsorbers of the reactor building emergency ventilation system.
- The heaters are no longer required to function because the 10-KW heater upstream of the charcoal filers will keep relative humidity of the air stream below 70 percent.
- The 1-KW strip heaters are not within the scope of 10CFR50.49.

Details:

This equipment was added to the master list of equipment subsequent to the NRC eview based upon a detailed system review. One 1-KW electric strip heater is located at the inlet of each of the two charcoal filters in the reactor building emergency ventilation system. Heater 202-72 is associated with charcoal filter #11; 202-73 with charcoal filter #12. In addition to these strip heaters, a single 10-KW electric heater (202-76) is located in the common ducting upstream of both charcoal filters. The design purpose of these heaters was as follows: 10-KW - Reduce relative humidity of the inlet air from 100 percent to below 70 percent to maintain charcoal filter efficiency high. 1-KW - Prevent condensation on the charcoal which would impair efficiency, particularly during system startup. Subsequent contact with the equipment vendor (Mine Safety Applicances Co. letter from Mr. R. D. Parco, Assistant Manager Nuclear Filter Systems, dated Feb. 10, 1984) has revealed the following information: 1) Current practice to meet charcoal adsorber requirements (Regulatory Guide 1.52 paragraph 2a, 3b and ANSI N-509, section 5.5) is to use a heater upstream of the adsorber to control relative humidity below 70 percent. Strip heaters to eliminate condensation on charcoal are no longer common. 2) Nuclear grade charcoal currently used has been qualified based on 99.99 percent efficiency on elemental iodine at 95 percent relative humidity, 30C and 99 percent efficiency on methyl iodine at 95 percent relative humidity, 80C. 3) Where an upstream heater capable of maintaining relative humidity below 70 percent exists, strip heaters are not required. In view of the above information, the 1-KW strip heaters to eliminate condensation on the charcoal are no longer required. In addition, since the 1-KW strip heaters are located in the turbine building where the only harsh environmental parameter for an accident in the containment or reactor building is radiation, the strip heaters should function normally, particularly during the system startup. Any subsequent malfunction of the 1-KW heaters due to environmentally induced failure will have no effect on the performance of the charcoal filters. Consequently, the 1-KW strip heaters (202-72 and 202-73) are not within the scope of 10CFR50.49.

Section 3.61

ELECTRICAL-HEATER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Honeywell R7283B 1081	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added into the master list based on a detailed system review conducted subsequent to the NRC review.
- An engineering evaluation is being conducted to qualify the equipment.
- The only harsh environment is radiation.
- When the engineering evaluation is completed, the equipment will be qualified.

Details:

This equipment has been incorporated into the master list of equipment based on a detailed systems review conducted subsequent to the NRC review An analysis of this equipment is currently being performed by Wyle Laboratories. Radiation is the only harsh environmental parameter to which this equipment is exposed, since the heater is in the turbine building and it only has to operate for an accident in the containment or reactor building. Consequently, it is anticipated that the Wyle analysis will show this equipment to be qualified. When the engineering evaluation is completed, the equipment will be qualified.

Section 3.62

H_2O_2 MONITOR

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Beckman H_2O_2	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list based on a detailed system review conducted subsequent to the NRC review.
- The only harsh environment is radiation.
- An engineering evaluation is being conducted to qualify the equipment.
- When the engineering evaluation is completed, the equipment will be qualified.

Details:

This equipment has been incorporated into the master list of equipment based on a detailed systems review conducted subsequent to the NRC review. The equipment is a part of hydrogen and oxygen monitoring system and is required to remain functional after a loss of coolant accident. The equipment is located in the turbine building and is required to be qualified for a radiation environment. An engineering evaluation is being conducted by Wyle to qualify the equipment. When the engineering evaluation is completed, the equipment will be qualified.

Section 3.63

RADIATION DETECTOR

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
51	GE 194X927	II.a	Documented evidence of Qualification adequate

RESOLUTION:

Summary:

- The TER concluded that documented evidence of qualification was not adequate.
- The equipment was deleted from the master list based on a detailed system review subsequent to NRC review.
- The detectors do not fall within the scope of 10CFR50.49.

Details:

The TER concluded that documented evidence of qualification was not adequate. This equipment was deleted from the master equipment list based upon a detailed system review subsequent to the NRC review. Radiation detectors RE RN05A, B, C and D are installed on the main steam lines. These are not within the scope of 10CFR50.49.

Section 3.64

RADIATION DETECTORS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	GE 194X927	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- The detectors subsequently were determined not to be within the scope of 10CFR50.49.

Details:

This equipment was added to the master list of equipment subsequent to the NRC review, based upon a detailed system review. These detectors are the radiation detectors monitoring the shell side vents of the emergency condensers (RE-RN04A-3, 04A-4, 04B-3, 04B-4). These detectors are located in the reactor building. Subsequently, these detectors were determined not to be within the scope of 10CFR50.49.

Section 3.65

CONTROL PANEL

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	GE Protective Panel for MG Set MG-162 and 172	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added into the master list based on a detailed system review conducted subsequent to the NRC review.
- GE is presently conducting an analysis to establish qualification.
- When the analysis is completed, the equipment will be qualified.

Details:

This equipment (MG-162CP and MG-172CP) was added to the master list based on a detailed systems review subsequent to the NRC review. This equipment is located in the general area of the turbine building on elevation 277 feet. The postulated high energy line break which exposes this equipment to a harsh environment is a steam or feedwater line break in the steam tunnel. The general areas of the turbine building are less than 133F under the postulated line break event; therefore, this equipment is not exposed to an excessively harsh environment. GE is presently conducting an engineering analysis to establish qualification. When the engineering analysis is completed, the equipment will be qualified.

Section 3.66

SOLENOID VALVE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
18	Asco WPLB8300B72F and WPLB8300B68F	I.b	Adequate similarity between equipment and test specimen established Aging degradation evaluated adequately Qualified life or replacement schedule established (if required) Criteria regarding aging simulation satisfied (if required)

RESOLUTION:

Summary:

- The NRC concluded that solenoid valves 68-08C, 09C and 10C were deficient with respect to similarity, aging and qualified life.
- Subsequent to the NRC review, solenoid valve 201-10, 08, 16, 32 were added to the master list.
- Qualification is established by Wyle Report 17655-SOV-3 (Reference 126).
- Radiation is the only harsh environment.
- We're replacing gaskets and the coil.
- When the gaskets and coil are replaced, this equipment will be qualified.

Details:

The NRC for equipment item 18, Asco Model WPLB8300B68F, concluded that solenoid valves 68-09C, 08C, 10C were deficient with respect to similarity, aging evaluation and qualified life. Therefore, we intend to replace these solenoids if qualification could not be established. Subsequent to the NRC review, Asco solenoid valves model WPLB8300B72F, 201-10, 201-08, 201-16 and 201-32 have been added to the master list based on a detailed system review. Solenoid valves in this equipment group are used in the containment atmospheric dilution system and containment and reactor vessel isolation system. This equipment is located in the reactor building and does not require high energy line breaks qualification because it is used for loss of coolant accident mitigation only. Therefore, the only harsh environmental requirement for qualification is radiation. Operating requirements for this equipment are 28 hours. Wyle Report 17655-SOV-3 establishes qualification for this equipment based on a materials radiation analysis and thermal aging evaluation. Replacement intervals (presently 3 to 5 years) for valve components including gaskets and coils were established in Wyle Report 17655-SOV-3 based on engineering analysis and Asco recommendations. However, we are reviewing temperature conditions at the actual location to extend replacement intervals. We're replacing age degraded components in installed solenoid valves in order to achieve full qualification; existing class B coils are being replaced with class H insulated coils. When the replacement component installation is completed, these solenoid valves will be qualified.

Section 3.67

600V CIRCUIT BREAKER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
62	GE AKD-5	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence of qualification not provided at the time of the NRC review.
- GE is presently conducting an analysis to establish qualification.
- If this analysis cannot substantiate qualification, this equipment will be enclosed in a cabinet assembly.
- Upon completion of the analysis and fabrication of a cabinet (if required), this equipment will be qualified.

Details:

Documented evidence of qualification was not provided at the time of the NRC review, and an assessment was to be conducted to establish qualification. Consequently, the TER indicated that the documented evidence of qualification was inadequate. Presently, GE is conducting an engineering analysis to establish qualification. If the engineering analysis substantiates full qualification, the equipment will be qualified. If the analysis cannot substantiate full qualification, the GE AKD-5 switchgear will be enclosed in a cabinet assembly to preclude intrusion of humidity under design basis accident conditions. Upon completion of the engineering analysis and the fabrication of a cabinet assembly, if required, this equipment will be qualified.

Section 3.68

VALVE ACTUATORS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Limitorque SMB000	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list subsequent to the NRC review.
- This equipment subsequently has been determined not to be within the scope of 10CFR50.49.

Details:

Valves (70-92 and 70-94) were added to the master equipment list subsequent to the NRC review, based upon a detailed systems review. They are the isolation valves on the return lines from the reactor building closed loop cooling heat exchangers for the drywell air coolers and the recirculation pump coolers. This equipment has subsequently been determined not to fall within the scope of 10CFR50.49.

Section 3.69

MOTOR CONTROL CENTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	GE IC7700	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added into the master list based on a detailed system review conducted subsequent to the NRC review.
- GE is presently conducting an analysis to establish qualification.
- When the analysis is completed, the equipment will be qualified.

Details:

These motor control centers (155, 161A/B, 171A/B, BB12) were added into the master list, based on a detailed systems review subsequent to the NRC review. GE is presently conducting an engineering analysis to establish qualification. When the engineering analysis is completed, the equipment will be qualified.

Section 3.70

600V CIRCUIT BREAKER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	GE AKD-5	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added into the master list based on a detailed system review conducted subsequent to the NRC review.
- GE is presently conducting an analysis to establish qualification.
- If the analysis cannot substantiate qualification, the equipment will be enclosed in a cabinet assembly.
- Upon completion of the analysis and fabrication of a cabinet (if required), this equipment will be qualified.

Details:

This equipment (PB-16A and PB-17A) was added into the master list, based on a detailed systems review subsequent to the NRC review. GE is presently conducting an engineering analysis to establish qualification.
If the engineering analysis substantiates full qualification, the equipment will be qualified. If the analysis cannot substantiate full qualification, the GE AKD-5 switchgear will be enclosed in a cabinet assembly to preclude intrusion of humidity under design basis accident conditions. Upon completion of the engineering analysis and the fabrication of a cabinet assembly, if required, this equipment will be qualified.

Section 3.71

SOLENOID VALVE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Asco HTX8320A22U	N/A	N/A

Summary:

- This equipment was added to the master list based on a detailed systems review.
- Qualification is established by Wyle Report 17655-SOV-4 (Reference 134).
- Radiation is the only harsh environment.
- The report will be revised with respect to qualified life and replacement schedule.
- This equipment will be qualified.

RESOLUTION:

Details:

The following Asco Model HTX8320A22U solenoid valves were added to the master equipment list, based on a detailed systems review subsequent to the NRC review: 201.2-431, 432, 429, 430, 421, 422, 420, 419, 201.7-24, 25, 22, 27. Solenoid valves in this equipment group are used in the H_2O_2 monitoring system and are required to remain functional after a loss of coolant accident. This equipment is located in the reactor building and must be qualified for radiation only. Wyle Report 17655-SOV-4 has established qualification for radiation service conditions. This report will be revised to substantiate qualification with respect to qualified life and component replacement schedule consistent with plant specific operating requirements. When the report revision is completed, this equipment will be qualified.

Section 3.72

SOLENOID VALVE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
10	Laurence 506WA26DC-SW-PS	II.a	Documented evidence of qualification adequate

Summary:

- Documented evidence of qualification not provided at the time of the NRC review.
- Qualification is established by Wyle Report, 17655-SOV-1 (Reference 71) and NUS Analysis Report, CD-ENG-853, (Reference 68).
- Radiation is the only harsh environment.
- Equipment is qualified.

RESOLUTION:

Details:

Documented evidence of qualification was not provided at the time of the NRC review, and an assessment was to be conducted to establish qualification. Therefore, documented evidence of qualification was indicated by the TER as inadequate. The solenoid valves are located in the reactor building and are used as drywell hydrogen/oxygen sampling isolation valves which are normally closed and de-energized. These valves are not required to function during a high energy line breaks. They are required to function during and after a loss of coolant accident. Therefore, the equipment is in a mild environment except for radiation. Wyle Analysis Report, 17655-SOV-1 and NUS Report CD-ENG-853 established qualification. Therefore, the equipment is qualified.

Section 3.73

SOLENOID VALVE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
15	Asco WP8300B61RU and 8300B61RU	II.a	Documented evidence of qualification adequate

Summary:

- Documented evidence of qualification was not provided at the time of the NRC review for solenoid valves 201.2-06, 33.
- Subsequently, solenoid valves 83.1-10, 12 and 58.1-01 were added to the master list.
- Qualification is addressed by Wyle Report 17655-SOV-5 (Reference 137).
- Radiation is the only harsh environment.
- We're replacing gaskets, seals and coils on these solenoids.
- An analysis will be conducted to substantiate qualification for the replacement components and to establish a plant specific qualified life.
- When the subcomponents and coil are replaced and the additional analysis is completed, this equipment will be qualified.

RESOLUTION:

Details:

The NRC concluded that the Asco solenoid model 8300B61RU for solenoid valves 201.2-06 and 201.2-33 was deficient with respect to documented evidence of qualification. Therefore, we stated that a qualification assessment would be conducted. Subsequently, Asco Model WP8300B61RU solenoid valves (solenoids 83.1-10, 83.1-12) and Asco Model 8300B61RU (solenoids 58.1-01) we added to the master list based on a detailed systems review. Wyle Report 17655-SOV-5 addresses qualification for these Asco solenoid valves. This equipment is located in the reactor building and is required to function during a loss of coolant accident; high energy line break qualification is not required. Radiation is the only harsh environmental requirement for qualification. Based on a materials evaluation, Wyle Report 17655-SOV-5 addresses qualification for the radiation environment. This same report recommended that valve components be upgraded with metallic seats, class H insulated coils and new gaskets and seals. We will perform these replacements in order to achieve fully qualified equipment. Additional analysis will be performed to substantiate qualification including development of plant specific replacement interval for age-degradable parts (i.e., solenoids and gaskets). When the replacement components are installed and the additional analysis is completed, these solenoid valves will be qualified.

Section 3.74

SOLENOID VALVE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Asco 8300C68/8300C68F	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list of equipment subsequent to the NRC review.
- Wyle Report 17655-SOV-6 (Reference 138) establishes qualification.
- The only harsh environment is radiation.
- We're replacing the existing solenoid coils.
- An analysis will be conducted to extend the current replacement interval of 4 to 5 years for the solenoid coils.
- When the coil replacement is complete, this equipment will be qualified.

Details:

These solenoid valves (SV/BV 202-15, 16, 31, 32, 34, 35) were added to the master list of equipment subsequent to the NRC review, based on a detailed systems review. These solenoid valves are used in the reactor building emergency ventilation system. This equipment is located in the turbine building and is required to function during a loss of coolant accident. Qualification for high energy line break conditions is not required. Radiation is the only harsh environmental condition for which qualification is required. Wyle Report 17655-SOV-6 has established qualification for service conditions, based on radiation and thermal analysisof solenoid valve materials. We are replacing existing solenoids in accordance with the recommendations in Wyle Report 17655-SOV-6 to establish fully qualified equipment. An additional analysis will be performed to determine if the recommended 4-5 year replacement interval for components can be extended. This equipment will be qualified.

Section 3.75

SOLENOID VALVES

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
13	Asco HVA 90 40BA	I.b	Aging degradation evaluated adequately Qualified life or replacement schedule established (if required) Criteria regarding aging simulation satisfied (if required)

RESOLUTION:

Summary:

- The NRC concluded that solenoid valves SV-NC-15 A, B and SV-NC-16 A, B were deficient with respect to aging and qualified life assessment.
- These valves have been determined not to fall within the scope of 10CFR50.49.

Details:

The NRC concluded that the documentation for solenoid valves SV-NC-15 A and B and SV-NC-16 A and B was deficient with respect to aging and qualified life assessment. These valves, through a detailed systems review, have been determined not to fall within the scope of 10CFR50.49.

Section 3.76

SOLENOID VALVES

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Asco 8300D61U	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list after the NRC review.
- Radiation is the only harsh environmental condition.
- This equipment will be replaced with qualified Asco NP-1 solenoid valves.
- Qualification of the NP-1 solenoid valve is established by Asco Report AQS21678/TR Revision A.
- A qualified life/replacement schedule assessment will be performed.
- When the valve replacement and qualified life evaluation are completed, the equipment will be qualified.

Details:

Two solenoid valves on equipment piece number 202-36 were added to the master list after the TER review, based on a detailed systems review. These valves are used in the reactor building ventilation system for control of air operated dampers. The solenoid valves are located in the turbine building and do not require qalification for high energy line breaks, since they function only during a loss of coolant accident. Radiation is the only harsh environmental requirement for qualification. This equipment will be replaced by qualified Asco NP-1 solenoid valves, model 206-832-3U and a plant specific qualified life evaluation performed. Qualification of the NP-1 solenoid valve is established by Asco Report AQS21678/TR Revision A. This equipment will be qualified after installation and qualified life evaluations are completed.

Section 3.77

SOLENOID VALVES

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Asco HP831630	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list after the NRC review.
- Radiation is the only harsh environmental condition.
- A qualification analysis will be performed for this equipment.
- This equipment will be qualified after completion of the analysis and replacement of valve components (if required).

Details:

Solenoid valves (SV/BV 202-37,38,74,75) were added to the master equipment list subsequent to the TER, based on a detailed systems review. These valves are used in the reactor building emergency ventilation system for control of air supply to the air-operated dampers. The solenoids are located in the turbine building and do not require qualification for high energy line breaks, since they function only during a loss of coolant accident. Radiation is the only harsh environmental requirement for qualification. A qualification analysis, including assessment of qualified life, will be performed for these valves, and component parts replaced (if required). It is anticipated that this valve can be qualified by analysis because of its similarity to other Asco models. When this work is completed, these solenoid valves will be qualified.

Section 3.78

SOLENOID VALVES

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
17	Asco 8300 Series	N/A	Adequate similarity between equipment and test specimen established Aging degradation evaluated adequately Qualified life or replacement schedule established (if required) Program established to identify aging degradation Criteria regarding aging simulation satisfied (if required) Criteria regarding radiation satisfied Criteria regarding functional testing satisfied

RESOLUTION:

Summary:

- Asco solenoid valves (SV39-05E, 5F, 06E, 6F) have been replaced by Valcor solenoid valves.
- Valcor valves also were added into the master list, based on a detailed systems review conducted subsequent to the NRC review.
- Qualification addressed by Wyle Report 17655-SOV-2.1 Revision A (Reference 113), Valcor Test Report MR70900-39-1-1 (Reference 82) and Valcor Test Report QR70900-21-1 (Reference 81).
- An additional engineering analysis will be conducted to establish a qualified life based on vendor test data.
- When the additional qualified life engineering evaluation is completed, the equipment will be qualified.

Details:

The TER concluded that Asco Model 8300 solenoid valves (SV39-05E, 05F, 06E, 06F) were deficient with respect to similarity, aging, qualified life, radiation and functional testing. Subsequent to the NRC review, these solenoid valves were replaced with Valcor Model V70900-21. In addition, the following additional solenoids have been added to the master list based on a detailed systems review: SOV39-11C, 11D, 12C, 12D, 13C, 13D, 14C, 14D; SVNC-15C, 15D; 60-17D, 17E; 60-18D, 18E. Valcor Test Report MR70900-39-1-1 and QR70900-21-1 were obtained, which establish qualification. Wyle Report 17655-SOV-2.1 Revision A, will be revised to establish a qualified life based on plant specific conditions and actual aging test data presented in Valcor Report MR-70900-39-1.1. When the additional qualified life analysis is completed, the equipment will be qualified.

Section 3.79

SOLENOID VALVE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
16, 17 and 79	Asco NP8344A71E 8300B61RU HT8320A90 HT8300B58BU 8300B61F HT8300B6RU WPHTX8300B61U HT8317A30 LB8320A-25	I.b for TER 16, 17 II.a for TER 79	Documented evidence of qualification adequate (TER 79) Adequate similarity between equipment and test specimen established (TER 16, 17) Aging degradation evaluated adequately (TER 16, 17) Qualified life or replacement schedule establish (TER 16, 17) Criteria regarding aging simulation satisfied (TER 16, 17) Program established to identify aging degradation (TER 17) Criteria regarding radiation satisfied (TER 17) Criteria regarding functional testing satisfied (TER 17)

RESOLUTION:

Summary:

- For TER No. 16, the NRC review concluded that the documentation was deficient with respect to similarity, aging and qualified life.
- For TER No. 79, the NRC review concluded that qualification documentation was not provided.
- Subsequent to the NRC review, additional solenoid valves were added to the master list based on a detailed systems review.
- This equipment will be replaced by qualified Asco NP series solenoid valves.
- Asco Test Report AQS21678 Revision A (Reference 178) establishes qualification.
- A plant specific qualified life evaluation will be conducted.
- When the equipment is replaced and the qualified life evaluation is completed, this equipment will be qualified.

Details:

For TER Item 16 (Asco Model 8300B61RU), the NRC review concluded that the qualification documentation for solenoid valves 201.2-32 and 201.2-03 was deficient with respect to similarity to the test specimen, aging and qualified life. For TER Item 79, the NRC review concluded that the qualification documentation for solenoid valves 122-04 through 122-11 was not provided to substantiate qualification. We stated that these solenoid valves would be replaced if qualification could not be established. Subsequent to the NRC review, the following solenoid valves were added to the master list based on a detailed systems reviews:

Manufacturer	Model	Plant I.D.
Asco	NP8344A71E	05-01R, 02R, 03R, 04R, 05-11, 05-12
Asco	HT8320A90	40-32B, 32C, 40-33B, 33C
Asco	HT8300B58BU	39-05, 06
Asco	8300B61F	201.2-02, 04
Asco	HT8300B6RU	201.7-20, 21, 23, 26
Asco	WPHTX8300B61U	01-03, 04
Asco	NP8344A71E	201.1-09, 11
Asco	HT8317A30	201.9-91, 92
Asco	LB8320A-25	201.7-01, 02

We have determined that all the solenoid valves mentioned above will be replaced with qualified Asco NP series solenoid valves. Qualification of the Asco NP solenoid valves is established by Asco Report AQS21678/TR Revision A. A qualified life evaluation will be performed for these replacement solenoid valves based on plant specific conditions. When this equipment is replaced and the additional qualified life analysis is completed, this equipment will be qualified.

Section 3.80

FLOW TRANSMITTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Endevco 2273AM20	N/A	N/A

RESOLUTION:

Summary:

- Equipment was added to the master list subsequent to the NRC review.
- This equipment was installed as a TMI Action Plan item to provide the operator with indication of relief valve opening.
- Preliminary testing for the BWR Owner's Group indicates the equipment to be qualified.
- The test report is being evaluated for qualification assessment.
- When this is completed, the equipment will be qualified.

Details:

This equipment (FT-19, 20, 21, 22, 23, 24) was added to the master equipment list subsequent to the NRC review, based upon a detailed systems review. These items are accelerometers and have been added to the automatic depressurization system relief valves as TMI action plan items. Their purpose is to provide the operator with positive indication of the opening of a relief valve. The BWR Owners Group has undertaken to qualify this equipment. Preliminary testing has shown the equipment to be qualified. The testing performed envelopes the environmental conditions at our plant. The test report is expected to be available for review shortly. We will add heat shrink tubing over the connectors. The test report is being evaluated for qualification assessment. When this is completed, the equipment will be qualified.

Section 3.81

SOLENOID VALVE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
N/A	Asco HT8320A90MB	N/A	N/A

RESOLUTION:

Summary:

- This equipment was added to the master list after the NRC review.
- Radiation is the only harsh environmental condition.
- Wyle Report 17655-SOV-8.1 (Reference 162) addresses qualification.
- Additional analysis will be performed with respect to similarity, qualified life and long-term post-accident functional capability.
- This equipment will be qualified.

Details:

These solenoid valves (122-03B, 03C) were added to the master equipment list subsequent to the NRC review, based on a detailed systems review. This equipment is used in the containment and reactor vessel isolation system for post-accident sample line isolation. The solenoid valves are located in the reactor building and are required to function after a loss of coolant accident. Radiation is the only harsh environmental requirement for qualification. Wyle Report 17655-SOV-8.1 summarizes an analysis which addressed qualification for short-term post-accident monitoring. Additional analysis will be performed to establish similarity between HT8320 and NP-1 Asco solenoid models, extend qualification to long-term post-accident operational requirements and revise qualified life/replacement intervals, based on plant specific conditions. This equipment will be qualified.

Section 3.82

SOLENOID VALVE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
11 and 12	Decco 24166	I.b	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- We have determined that these solenoid valves are manufactured by Numatics.
- Documented evidence of qualification was not provided at the time of the NRC review.
- This equipment will be replaced by qualified ASCO NP service solenoid valves.
- Asco Test Report AQS21678/TR Revision A (Reference 178) establishes qualification.
- A plant specific qualified life will be conducted.
- When the equipment is replaced and the qualified life evaluation is completed, this equipment will be qualified.

Details:

The TER listed these solenoid valves as Decco Model 24166; subsequent to the NRC review, we have determined that these solenoids are Numatics Model 1JSP3 and 46JLSAD3. The TER concluded that documented evidence of qualification had not been provided for these solenoid valves (SV/IV 80-15, 16, 35, 36, 01-05, 06) and we stated that these solenoid vaves would be replaced if qualification could not be established. The Numatics solenoid valves will be replaced by qualified Asco NP series solenoid valves. Qualification of the ASCO NP solenoid valves is established by Asco Report AQS21678/TR Revision A. A qualified life evaluation will be performed for these replacement solenoid valves, based on plant specific conditions. When this equipment is replaced and the additional qualified life analysis is completed, this equipment will be qualified.

Section 3.83

DIFFERENTIAL PRESSURE TRANSMITTERS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
25, 38	GE/MAC 551, 553, 554	I.b	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- The TER evaluated GE/MAC models 551 and 553 as lacking documented evidence of qualification.
- Subsequently, additional GE/MAC model 553 and 554 transmitters were added to the master list.
- Model 553 has been tested by Wyle Laboratories, with similarity established to models 551 and 554. Preliminary results indicate all models are qualified.
- As soon as the test report is obtained and reviewed, the transmitters will be qualified.

Details:

Three of these transmitters were evaluated by the TER as deficient in documented evidence of qualification as follows:

TER Item No.	Model No.	Plant ID No.
25	551	PT ID-46A, 46B
38	553	LT IA-12

The remaining transmitters were added to the master equipment list subsequent to the NRC review, based on a detailed systems review, as follows:

Plant ID No.	Model No.	Function
FT 80-49A, 56A, 71A, 76A	553	Containment spray flow
FT RV-26B	553	Core spray flow
FT 202-49A, 92A	554	Emergency ventilation flow
FT 93-30A, 32A, 33A, 34A	553	Containment spray raw water flow
LT IG-06A, 06B	553	Emergency condenser level

GE/MAC transmitter, model 553, has undergone testing by Wyle Laboratories. The test parameters envelope the accident environmental conditions at Nine Mile Point 1. The test report will also show similarity to GE/MAC models 551 and 554. Preliminary results of this testing indicate that the transmitters are qualified. As soon as the test report is obtained and reviewed, these transmitters will be qualified.

Section 3.84

TRANSMITTERS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
80, 81, 82, 83	Rosemount 1153 DA5, 1153 GA9, 1153 GA7	II.a	Documented evidence of qualification adequate (TER 80, 81, 83) Aging degradation evaluated adequately, Qualified life or replacement schedule established (if required) (TER 82)

RESOLUTION:

Summary:

- For TER items 80, 81 and 83, the NRC review concluded that documented evidence of qualification had not been provided.
- For TER item 83, the NRC review concluded that the qualification documentation was deficient with respect to aging and qualified life.
- Subsequent to the NRC review, level transmitters LT-60-22 and 23 were added to the master list.
- Qualification is established by Patel Report PEI-TR-82-12-14 (Reference 60) including Rosemount Test Report 3788 Revision A and Test Report 108026 and Wyle Report 17655-XMR-1.1 Revision A (Reference 66).
- An evaluation will be conducted to resolve the TER concern regarding o-ring failures on recent Rosemount testing programs.
- When the additional evaluation is completed, this equipment will be fully qualified.

Details:

For TER item no. 80, Rosemount Model 1152T0280 (LT-58-05 and -06), the NRC review concluded that documented evidence of qualification had not been provided. Subsequent to the NRC review, we have determined that these transmitters are Rosemount Model 1153DA5. For TER item 81, Rosemount Model 1153GA9 (PT-36-23A and 23B), the NRC review concluded that documented evidence of qualification had not been provided. For TER item 83, Rosemount Model 1153DA5 (LT-36-24A and 24B), the NRC concluded that documented evidence of qualification was not provided. For TER item 82, Rosemount Model 1153 series A (PT-201.2-483 and 484), the NRC review concluded that the qualification documentation was deficient with respect to aging and qualified life evaluation. Subsequent to the NRC review, we have determined that these transmitters are Rosemount Model 1153GA7. Subsequent to the NRC review, Rosemount Model 1153DA5 transmitters for LT-60-22 and LT-60-23 were added to the master list based on a detailed systems review. Subsequent to the NRC review, the following qualification documentation was obtained which establishes qualification of these transmitters: Patel Report PEI-TR-82-12-14 including Rosemount Test Report 3788 Revision A and Test Report 108026 and Wyle Report 17655-XMR-1.1 Revision A. An evaluation will be conducted to resolve the TER concern regarding o-ring failures on recent Rosemount testing programs. Upon completion of these additional analyses and evaluations, these transmitters will be qualified.

Section 3.85

TRANSMITTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
84	Foxboro E13DL	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- For TER item 84, the NRC review concluded that documented evidence of qualification was not provided.
- Subsequent to the NRC review, transmitters (FT201.8-41, FT201.9-31; PT201.8-35, 45; PT201.9-26, 80; FT201.2-533, 534) were added to the master list.
- All of these transmitters are being replaced by qualified Rosemount transmitters 1153 series D.
- When these transmitters are replaced with qualified transmitters, this equipment is qualified.

Details:

For TER item 84, Foxboro Model E13DL transmitter (FET 664), the NRC review concluded that documented evidence of qualification had not been provided. Subsequent to the NRC review, the following have been added to the master list:

Plant I.D. No.	Model No.
FT201.8-41	2340
FT201.9-31	2340
PT201.8-35	2340
PT201.8-45	2340
PT201.9-26	2340
PT201.9-80	2340
FT201.2-533	To be determined
FT201.2-534	To be determined

All of these transmitters are being replaced by environmentally qualified Rosemount Model 1153 series D transmitters. Qualification for these replacement units is established by Rosemount Test Report D8300040. When these transmitters are replaced, this equipment will be qualified.

Section 3.86

ELECTRONIC TRIP UNIT

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
19 and 20	Rosemount 510 DU	II.a	Aging degradation evaluated adequately Qualified life or replacement schedule established (if required) Peak pressure adequate Steam exposure (if required) adequate Criteria regarding radiation satisfied

RESOLUTION:

Summary:

- The NRC concluded that the equipment was deficient with respect to aging, qualified life, pressure, steam and radiation exposure.
- Wyle Report 17655-TU-1.1 (Reference 141),BWR Equipment Qualification Summary Report QSR-011-A-01 (Reference 142) and Rosemount Report 12777D (Reference 143) address qualification.
- Additional engineering analysis and evaluations will be performed to resolve all TER concerns.
- When the additional analysis is completed, this equipment will be qualified.

Details:

The NRC concluded that the qualification documentation for the Model 510DU Rosemount electronic trip units was deficient with respect to aging and qualified life assessment, exposure to peak pressure, exposure to steam (high humidity) and radiation. Subsequent to the NRC review, Wyle Report 17655-TU-1.1, BWR Equipment Qualification Summary Report QSR-011-A-01 and Rosemount Report 12777D were obtained which address qualification of the Model 5.10 DU electronic trip units. Additional engineering evaluations and analysis will be performed to completely resolve all TER concerns. When the additional engineering analysis and evaluations are completed, this equipment will be qualified.

Section 3.87

VALVE ACTUATORS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
2, 3, 7, 75	Limitorque SMB	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- TER Items 2, 3 and 7 were deficient with respect to qualification documentation; TER Item 75 had similarity qualified life, evidence of qualification and aging deficiencies.
- We added valve actuators (38-01, 02) to the master list after the TER review based on a systems review.
- This equipment is located in the drywell and will be replaced with qualified Limitorque valve actuators.
- Qualification testing was performed and reported in Limitorque Reports B0058 and 600376A. Wyle Report 17655-MOV-1.1 and 1.2 (References 179 and 180) and Patel Report PEI-TR-82-12-81 (Reference 92) address qualification.
- Additional analysis will be performed for qualified life and demineralized water spray effects.
- Valve actuators will be inspected to verify components.
- This equipment will be qualified after completion of qualification analysis and replacement installation.

Details:

At the time of the NRC review, the TER concluded that deficiencies existed in the qualification documentation of these valves as follows:

Plant ID No.	Model	TER No.	TER Deficiencies
IV01-01	SMB4	2	Documented evidence of qualification
IV01-02	SMB4	2	Documented evidence of qualification
IV33-01	SMB0	2	Documented evidence of qualification
IV33-02	SMB0	2	Documented evidence of qualification
IV40-01	SMB3	7	Documented evidence of qualification
IV40-09	SMB3	7	Documented evidence of qualification
IV40-10	SMB3	3	Documented evidence of qualification
IV40-11	SMB3	3	Documented evidence of qualification
IV83.1-09	SMB000	7	Documented evidence of qualification
IV83.1-11	SMB000	7	Documented evidence of qualification
IV110-127	SMB000	75	Adequate similarity Documented evidence of qualification Aging degradation, qualified life

Subsequent to the NRC review, valves IV38-01 and IV38-13 were added to the master equipment list, based on a detailed systems review. Since the TER review, the following valves have been replaced or are scheduled for replacement:

Replaced	Scheduled for Replacement
IV33-01	IV-01-01
IV40-01	IV-01-02
IV40-09	IV-33-02
IV40-10	IV-40-11
	IV-83.1-09
	IV-83.1-11
	IV-110-127
	IV-38-01
	IV-38-13

VALVE ACTUATORS

Details: (Continued)

Wyle Report 17655-MOV-1.1 and 17655-MOV-1.2 assessed the environmental qualification for these valves. These assessments were based on engineering evaluations performed by Patel. Report PEI-TR-82-12-8, and testing described in Limitorque Test Reports B0058 and 600376A. Additional analyses will be performed to determine qualified life and evaluate the effects of demineralized water spray. We will perform inspections of these Limitorque actuators to ensure installed components (i.e., torque switches, limit switches, terminal blocks, wires, etc.) conform to vendor component lists and materials subjected to qualification testing. This equipment will be qualified when installation of qualified replacement actuators, engineering analyses and inspections is completed.

Section 3.88

TRANSMITTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
27, 29, 30, 35, 39	Rosemount 1151 DP, 1151 GP	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Documented evidence not provided at the time of the NRC review.
- Qualification is established by Patel Report PEI-TR-82-12-10 (Reference 59) and Wyle Report 17655-XMR-2.1, Revision B (Reference 67).
- An additional evaluation will be conducted to resolve the TER concern regarding o-ring failure on recent Rosemount testing programs.
- Upon completion of the additional evaluation, these transmitters will be qualified.

Details:

The NRC concluded that documented evidence of qualification for the following Rosemount transmitters was not provided: FT36-06A, B, C, D; FTRV-26A; LT36-03A, B, C, D; LT36-04A, B, C, D; LT36-05A, B, C, D; PT36-07A, B, C, D; PT36-08A, B, C, D; PT201.2-476A, B, C, D. Therefore, we stated that qualification assessment would be conducted to establish qualification. Subsequent to NRC review, Patel Report PEI-TR-82-12-10 and Wyle Report 17655-XMR-2.1 Revision B were obtained which establish the qualification for the 1151 Rosemount transmitters. An evaluation will be conducted to resolve the TER concern regarding o-ring failure on recent Rosemount testing programs. Upon completion of the additional evaluations, the transmitters will be qualifed.

Section 3.89

VALVE-ACTUATORS

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
1, 6, 8	Limitorque SMB	II.a	Documented evidence of qualification adequate Adequate similarity between equipment and test specimen established Aging degradation evaluated adequately Qualified life or replacement schedule established (if required)

RESOLUTION:

Summary:

- TER Items 6 and 8 were deficient with respect to similarity, aging and qualified life; TER Item 1 had documentation deficiencies.
- We added valve actuator 34-01 to the master list after the TER review.
- At the time of the NRC review, Limitorque Report B003 was provided as evidence of qualification. Subsequent investigations determined similarity was not adequately established.
- Wyle Report 17655-MOV-2 (Reference 105) addresses qualification.
- Field inspections and additional evaluations will be performed to determine qualification status based on similarity to components tested in qualification reports.
- This equipment will be qualified after completion of inspections, evaluations and replacement of components, as necessary.

Details:

At the time of the NRC review, the TER concluded that the following qualification deficiencies existed:

Plant ID No.	Model	TER No.	TER Deficiency
33-04	SMB1	1	Documented evidence of qualification
34-01	SMB000	N/A	(Added to list)
39-07	SMB2	6	Similarity, aging, qualified life
39-08	SMB2	6	Similarity, aging, qualified life
39-09	SMB2	6	Similarity, aging, qualified life
39-10	SMB2	8	Similarity, aging, qualified life
201-31	SMB000	8	Similarity, aging, qualified life

Valve actuator 34-01 was added to the master list based on a detailed systems review. Subsequent to the TER, Wyle Labs determined that no specific qualification reports exist for these valve actuators. Wyle Report 17655-MOV-2 identified typical components and materials used in the construction of qualified Limitorque actuators. The report recommended that field inspections be performed to determine the components used in equipment installed in Nine Mile Point 1. An assessment will then be made of the qualification status based on similarity of installed components to Limitorque components tested in existing Limitorque qualification reports. These actuators are scheduled for inspection to determine specific actuator components (torque switches, limit switches, wiring and motors). A qualification assessment/analysis will be performed and components replaced with previously qualified items, as necessary. This equipment will be qualified when the analysis and component replacements are completed.

Section 3.90

VALVE ACTUATOR

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
77	Limitorque SMB-0	II.a	Documented evidence of qualification adequate Adequate similarity between equipment and test specimen established Aging degradation evaluated adequately Qualified life or replacement schedule established (if required)

RESOLUTION:

Summary:

- This equipment item was deficient with respect to qualification documentation, similarity, aging and qualified life.
- A field inspection was performed to identify components.
- Wyle Report 17655-MOV-3.1 (Reference 164) reviewed the qualification status of this equipment and determined that the actuators were not tested to envelope plant specific conditions.
- Additional analysis or replacement will be performed.
- This valve actuator will be qualified after qualification analysis or replacement is completed.

Details:

The TER concluded that valve actuator 80-118 was deficient in documented evidence of qualification. Additional deficiencies included similarity between installed and tested equipment, aging and qualified life. We stated an ongoing qualification assessment would be performed. Subsequent to the TER, a field inspection of the valve actuator was performed. Based on motor information obtained from this inspection, Wyle Report 17655-MOV-3.1 concluded that Limitorque actuators of the type used on valve 80-118 were not tested to the maximum steam temperature/pressure conditions. Additional analyses will be performed to determine if existing qualification test results can be extrapolated to our service conditions. If the qualification cannot be achieved through analysis, the valve actuator will be replaced with qualified equipment. Upon completion of the analysis or replacement of this equipment (if necessary), this equipment will be qualified.

Section 3.91

VALVE ACTUATOR

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
78	Limitorque SMB-000 (TER Item 78); SMB-00	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- Inadequate qualification documentation was provided for TER Item 78.
- Additional equipment was added to the master list after the TER review.
- This equipment is located in the reactor building and is essentially exposed only to radiation during an accident.
- Wyle Report 17655-MOV-4.1 (Reference 167) and Limitorque Report No. B0058 (Reference 165) establish qualification.
- An analysis will be performed to determine qualified life.
- Upon completion of the analysis, this equipment will be qualified.

Details:

The NRC review concluded that documented evidence of qualification was inadequate for TER Item 78 valve actuators (IV05-05 and 05-07). At that time, We stated that an ongoing qualification assessment would be performed. Subsequent to the TER, we added the following Limitorque valve actuators to the equipment master list based on a detailed systems review:

Plant ID No.	Model	TER No.	TER Deficiencies
IV80-01	SMB00	N/A	N/A
IV80-02	SMB00	N/A	N/A
IV80-21	SMB00	N/A	N/A
IV80-22	SMB00	N/A	N/A

These valve actuators are located in open areas of the Reactor Building where limiting temperature/pressure conditions are less than 110/1 psig due to line breaks; radiation is essentially the only harsh environment. Subsequent to the TER, field inspections of actuator nameplates were performed to identify motor manufacturer and insulation class. Wyle Report 17655-MOV-4.1 established qualification for this equipment based on similarity of Nine Mile Point 1 actuator models and motors to equipment tested by the manufacturer and reported in Limitorque Report B0058, Appendix D. An aging analysis will be performed to determine a qualified life for this equipment. Upon completion of the qualified life analysis, this equipment will be qualified.

Section 3.92

VALVE ACTUATOR

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
73, 74, 76	Limitorque SMB-000 (TER Items 73, 76); SMB-0 (TER Item 74)	II.a	Documented evidence of qualification adequate Adequate similarity between equipment test specimen established Aging degradation evaluated adequately Qualified life or replacement schedule established (if required)

RESOLUTION:

Summary:

- This equipment was deficient with respect to qualification documentation, similarity, aging and qualified life.
- A field inspection was performed to identify components. Wyle Report 17655-MOV-5.1 and 17655-MOV-6.1 (Reference 167 and 172) and Limitorque Report B0058 (Reference 165) establish qualification.
- An analysis will be performed to determine qualified life.
- Upon completion of the analysis, this equipment will be qualified.

Details:

The NRC concluded that valve actuators were deficient with respect to documented evidence of qualification, similarity, aging degradation evaluation and qualified life. We stated at the time of the TER review that an ongoing qualification assessment would be performed. This equipment is located in the reactor building where (peak) temperature/pressure is 212F/1 psig and radiation TID is 1 Mrad under accident conditions. Subsequently, field inspections were performed to identify actuator motor insulation system class and manufacturer (i.e., Peerless or Reliance). Wyle Report 17655-MOV-5.1 established qualification for TER Items 73, 76; Wyle Report 17655-MOV-6.1 established qualification for TER 74. Qualification was based on similarity of installed actuator models and motors to equipment tested by Limitorque. These test results are documented in Limitorque Report B0058. An aging analysis will be performed to determine a qualified life for this equipment. On completion of the qualified life analysis, this equipment will be qualified.

Section 3.93

VALVE-ACTUATOR

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
4, 5, 9	Limitorque SMB	II.a for TER Item 5 II.c for TER Items 4 and 9	Documented evidence of qualification adequate Adequate similarity between equipment test specimen established Aging degradation evaluated adequately Qualified life or replacement schedule established (if required)

RESOLUTION:

Summary:

- TER Items 4 and 9 were deficient with respect to aging and qualified life.
- TER Item 5 was deficient with respect to documented evidence of qualification, similarity, aging and qualified life.
- Additional valve actuators were added to the master list based on a detailed systems review.
- Specific qualification documentation has not been identified for this equipment at this time.
- Field inspections and evaluations will be performed to determine qualification status based on similarity to components tested in Limitorque qualification reports.
- After completion of field inspections, evaluations and replacement of components, as necessary, this equipment will be qualified.

Details:

Limitorque valve actuators addressed in this section are listed below, including TER deficiencies at the time of the NRC review for TER Items 4, 5 and 9. The additional Limitorque valve actuators listed in the table were added to the master list based on a detailed systems review.

Model No.	Plant ID No.	TER No.	TER Deficiency
SMB00	IV40-05	4	Deleted - not in scope of 10CFR50.49
SMB00	IV40-06	4	Aging, qualified life
SMB00	IV81-01	N/A	N/A
SMB00	IV81-02	N/A	N/A
SMB00	IV81-21	N/A	N/A
SMB00	IV81-22	N/A	N/A
SMB3	IV40-30	N/A	N/A
SMB3	IV40-31	N/A	N/A
SMB0	BV93-27	5	Evidence, similarity, aging, qualified life
SMB0	BV93-28	5	Evidence, similarity, aging, qualified life
SMB0	BV93-26	5	Evidence, similarity, aging, qualified life
SMB0	BV93-25	5	Evidence, similarity, aging, qualified life
SMB0	IV93-49	5	Deleted, not in scope of 10CFR50.49
SMB0	IV93-50	5	Deleted, not in scope of 10CFR50.49
SMB000	IV201-07	9	Aging, qualified life
SMB000	IV201-09	9	Aging, qualified life
SMB000	IV201-17	9	Aging, qualified life
SMB2	IV31-08	N/A	N/A
SMB2	IV31-07	N/A	N/A
SMB2	IV38-02	N/A	N/A

Section 3.93
(Continued)

VALVE ACTUATOR

Details: (Continued)

Specific qualification documentation for this equipment has not been identified at this time. Field inspections will be performed to determine the components used in equipment installation in Nine Mile Point 1. An assessment will then be made of the qualification status based on similarity of installed components to Limitorque components tested in existing Limitorque qualification reports. These actuators are scheduled for inspection to determine specific actuator components (torque switches, limit switches, wiring and motors). A qualification assessment/analysis will be performed and components replaced with previously qualified items, as necessary. This equipment will be qualified when the field inspections, analysis and component replacements are completed.

Section 3.94

TRANSMITTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
23	GE/MAC 551	I.b	Documented evidence of qualification adequate

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

RESOLUTION:

Details:

This TER item was deleted from the master equipment list based on a detailed systems review. This information was previously transmitted in our May 20, 1983 response to 10CFR50.49.

Section 3.95

TRANSMITTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
24	GE/MAC 551	I.b	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

Details:

This TER item was deleted from the master equipment list based on a detailed systems review. This information was previously transmitted in our May 20, 1983 response to 10CFR50.49.

Section 3.96

TRANSMITTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
26	GE/MAC 551	I.b	Documented evidence of qualification adequate

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

RESOLUTION:

Details:

This TER item was deleted from the master equipment list based on a detailed systems review. This information was previously transmitted in our May 20, 1983 response to 10CFR50.49.

Section 3.97

TRANSMITTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
31	Rosemount 1151DP	II.a	Documented evidence of qualification adequate

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

RESOLUTION:

Details:

This TER item was deleted from the master equipment list based on a detailed systems review. This information was previously transmitted in our May 20, 1983 response to 10CFR50.49.

Section 3.98

PRESSURE SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
33	Mercoid SD8136	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

Details:

This TER item was deleted from the master equipment list based on a detailed systems review. This information was previously transmitted in our May 20, 1983 response to 10CFR50.49.

Section 3.99

PRESSURE SWITCH

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
34	Mercoid DA5432	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

Details:

This TER item was deleted from the master equipment list based on a detailed systems review. This information was previously transmitted in our May 20, 1983 response to 10CFR50.49.

Section 3.100

TRANSMITTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
40	Rosemount 1151DP	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

Details:

This TER item was deleted from the master equipment list based on a detailed systems review. This information was previously transmitted in our May 20, 1983 response to 10CFR50.49.

Section 3.101

THERMOCOUPLE

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
88	Omega HWANSA22312DH114T834	II.a	Documented evidence of qualification adequate

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

RESOLUTION:

Details:

This TER item was deleted from the master equipment list based on a detailed systems review. This information was previously transmitted in our May 20, 1983 response to 10CFR50.49.

Section 3.102

MOTOR STARTER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
98	GE CR207B223AAA	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

Details:

This TER item was deleted from the master equipment list based on a detailed systems review.

Section 3.103

CIRCUIT BREAKER

TER NO.	MANUFACTURER/MODEL	NRC CATEGORY	DEFICIENCY
98	GE NTE20	II.a	Documented evidence of qualification adequate

RESOLUTION:

Summary:

- This TER item was deleted from the master equipment list, since it does not fall within the scope of 10CFR50.49.

Details:

This TER item was deleted from the master equipment list based on a detailed systems review.

Section IV

Justification for Continued Operation

APPENDIX A & B
JUSTIFICATION FOR CONTINUED OPERATION

Each equipment item lacking documented qualification was evaluated and a justification for continued operation (JCO) was prepared. Even where an item was fully qualified except that an elastomeric seal or other degradable component had exceeded its rated lifetime (and therefore was scheduled for maintenance), a justification for continued operation was prepared. These justifications for continued operation verify that no significant degradation of any safety function results from failure of the item or items. In the case of display instruments, it was determined on an individual instrument basis, that there were sufficient alternate indicators available to the operator to prevent misleading in the event that a display instrument should fail.

Appendix A:

Justification for continued operation narratives (JCO's) prepared since our May 20, 1983 submittal for equipment environmental qualification are provided in Appendix A.

Appendix B:

Justification for continued operation narratives (JCO's) submitted as a part of the May 20, 1983 submittal are summarized in Appendix B. These have been resubmitted at this time in order to provide complete documentation covering all equipment items.

APPENDIX A

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Temperature elements located in the emergency condenser isolation valve cubicle, elevation 281 feet (TE IB08-26-11, 12, 13, 14, 15, 21, 22, 23 & 24)
FRC Equipment Item No.:	32
Manufacturer:	Minco Nickel
Model:	R-T-D
Safety Function:	Alerts operator to leak in emergency cooling system loop
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These temperature elements are installed to aid the plant operator in identifying steam leakage from one or the other of the emergency cooling system loops to permit manual isolation of the faulted loop (See Operating Procedure N1-OP-13). Failure of these temperature elements could either (1) prevent timely isolation of a leaking emergency cooling loop (failure to operate) or (2) cause unnecessary isolation of one or both emergency cooling loops by the operator (actuation not caused by emergency cooling loop leaking). In either event, the emergency cooling system is backed up by the high pressure coolant injection system, which is located in a mild environment under conditions when the harsh environment is in the reactor building. Furthermore, the core spray/automatic depressurization systems are also available to provide core cooling functions should the emergency cooling system be either unavailable or a source of leakage.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Temperature elements located adjacent to the emergency condensers (TEIG01 A, B, C & D)
FRC Equipment Item No.:	N/A
Manufacturer:	Pall Trinity
Model:	CU/6
Safety Function:	Identifies possible emergency condenser tube leak or condenser low level condition
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These temperature elements monitor emergency condenser shell-side temperature. High shell side temperature indicates either insufficient shell side water inventory or possible condenser tube leak. Consequently, malfunction of these detectors can lead to (1) reduced performance of the emergency cooling system (due to low condenser water level) or (2) premature condenser isolation by the operator (due to faulty indicators). In either event, the emergency cooling system is backed up by the high pressure coolant injection system (which would be in a mild environment because the harsh environment is in the reactor building) and also by the core spray/automatic depressurization system.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Thermocouple located in the reactor building (TE 70-23)
FRC Equipment Item No.:	22
Manufacturer:	Pall Trinity
Model:	CU/6
Safety Function:	Provides temperature signal for automatic control of reactor building closed loop cooling water and service water flow.
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

This temperature element monitors reactor building closed loop cooling heat-exchanger outlet temperature and provides an alarm in the control room. The temperature signal is also sent to an E/P converter (E/P 70-137) which controls heat-exchanger flow both on the reactor building closed loop cooling side and the service water side. Failure of either the temperature element or E/P converter can result in increased heat-exchanger flow (both reactor building closed loop cooling and service water), no change in flow, or decreased flow.

If flow is increased, excess cooling will be applied to the system loads. This is not desirable from a moisture and equipment life standpoint but is not an imminent threat to continued system operation. If flow remains as-is, the system will continue to operate essentially normally, particularly since reactor building closed loop cooling heat loads will remain fairly constant even with a high energy line break in the reactor building.

If cooling flow is greatly decreased or lost, however, the reactor building closed loop cooling loads may eventually be lost. During a high energy line break, the systems of concern which rely on reactor building closed loop cooling are high pressure coolant injection, instrument air, and H_2-O_2 monitoring. Even if all three of these systems are lost, the plant can still be placed in a safe condition, as follows.

In the case of loss of high pressure coolant injection, both the emergency cooling system and the core spray/automatic depressurization system are available for core cooling. The emergency cooling system will start automatically, either on high reactor pressure or low-low reactor water level, or due to valves isolation valves 39-05/06 failing-open on loss of instrument air. With instrument air unavailable, the cool down rate can be controlled by the emergency cooling system by cycling motor-operated valves in the steam supply lines to the condenser.

With core cooling assured by the emergency cooling system and the high energy line break located in the reactor building (causing the harsh environment to reactor building closed loop cooling equipment), the remaining instrument air loads and the H_2-O_2 monitoring system are not required for mitigation of this accident.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the emergency condenser return valve area (SV/IV39-05, 06; SV39-05E, 05F, 06E, 06F)
FRC Equipment Item No.:	17
Manufacturer:	Asco/Valcor
Model:	8300 Series/V70900-21-1
Safety Function:	De-energize to open emergency condenser return valves
Qualification Deficiency:	Similarity, aging, qualified life, radiation, functional testing

Justification for Continued Operation:

These solenoid valves are normally energized to maintain air pressure to the normally closed emergency condenser air-operated isolation valves (39-05, -06). On reactor protection system signal (high reactor pressure or low-low reactor pressure level, either for 10 seconds) or on loss of electrical power, these solenoids de-energize and vent the air to isolation valves 39-05 and 06, allowing the isolation valves to open and natural circulation to begin through the condensers.

The emergency condensers are used to assist in core cooling and depressurization only if the high pressure coolant injection system is unavailable. In this case, emergency cooling will be initiated at the start of an accident, after which, failure of the solenoids is of no concern. Furthermore, it is hard to conceive of a credible failure mechanism which will keep the solenoids energized when they are signaled to de-energize. Also, if necessary, power to the solenoids can be manually secured.

Finally, if the emergency cooling system cannot be initiated (either loop), core cooling is assured by the high pressure coolant injection system and/or core spray/containment spray/automatic depressurization system.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Pressure transmitter located in the reactor building (PT36-07A, B, C, D; 36-08A, B, C, D)
FRC Equipment Item No.:	27
Manufacturer:	Rosemount
Model:	1151
Safety Function:	Initiates protective action on high reactor vessel pressure
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These transmitters monitor reactor pressure and initiate protective action on high reactor vessel pressure. During a loss-of-coolant accident or high energy line break, protective action occurs nearly immediately. Consequently, instrumentation devices which initiate protective actions will have performed their intended safety function before being exposed to the adverse environment for more than just a few seconds.

The transmitters are located in the reactor building where any credible high energy line break can be isolated from the reactor vessel in a short period of time. Consequently, the extent and duration of the adverse environment will be limited and it is likely that these transmitters will be available for long-term post-accident monitoring, as well as performing their short-term safety function. Furthermore, should all reactor pressure indication fail, the reactor vessel remains protected from an over-pressure condition by relief-valves. Consequently, eventual loss of these transmitters does not seriously affect accident mitigation.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	D/P transmitter located in the reactor building (FT 36-06A, B, C, D)
FRC Equipment Item No.:	29
Manufacturer:	Rosemount
Model:	1151 DP
Safety Function:	Monitors steam line break in emergency condenser cooling loops
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These transmitters monitor the emergency condenser cooling loops. They will detect a break in the cooling loop as indicated by high differential pressure (i.e. high flow) and signal the reactor protection system to isolate the appropriate loop.

In the case of a high energy line break in an emergency condenser cooling loop, the high differential pressure condition will occur nearly immediately. Consequently, these transmitters will perform their safety function prior to the on-set of sustained adverse environmental conditions. Furthermore, should the transmitters fail to perform their function, other indicators, such as high area temperature alarms and high radiation detectors, are available to identify the break. In any event, core cooling is assured by the operable emergency cooling loop, the high pressure coolant injection system, and/or core spray/containment spray/automatic depressurization system.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Flow transmitter located in reactor building (FT RV-26A, 26B)
FRC Equipment Item No.:	39
Manufacturer:	Rosemount - GE/MAC
Model:	1151DP - 553
Safety Function:	Core spray flow measurement
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

This flow detector monitors core spray flow. Core spray flow detectors provide no control or automatic safety functions. They provide low flow rate indication to the operator. There are numerous other indicators of this system, such as filter differential pressure indicators, to aid the operator should the flow transmitters fail. Failure of these transmitters does not impair system performance.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Level transmitters located in the reactor building (LT 58-05, 58-06)
FRC Equipment Item No.:	80
Manufacturer:	Rosemount
Model:	1153DA
Safety Function:	Monitors torus water level
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Torus water level transmitters provide no automatic control or safety function. They provide level alarms indications to the operator. Water level in the torus at the start of an accident would be sufficient for accident mitigation. Should the level transmitters fail post-accident, there is no reason to suspect subsequent loss of water inventory in the torus. Loss of these transmitters will not adversely affect accident mitigation.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Flow transmitters located in the reactor building (FT 80-49A, 56A, 71A, 76A and 93-30A, 32A, 33A, 34A)
FRC Equipment Item No.:	N/A
Manufacturer:	GE/MAC
Model:	553
Safety Function:	Monitor containment spray flow
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These flow transmitters monitor containment spray flow to each of four containment spray heat exchangers (torus water and raw water sides). They perform no automatic control or safety functions but provide indication of flow to the operator. In view of the numerous other indications of flow available to the operator (e.g. pumps running, filter differential pressure, temperature at heat exchanges, etc.); loss of these instruments will not adversely affect accident mitigation.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Level transmitters located in the reactor building (LT IG06A, B and LT60-22, 23)
FRC Equipment Item No.:	N/A
Manufacturer:	GE/MAC - Rosemount
Model:	553 - 1153DA5
Safety Function:	Provides for automatic control of emergency condenser level.
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These transmitters monitor emergency condenser water level and provide for automatic control of the make-up supply valves. Should these transmitters fail, emergency condensers can be filled by opening the make-up supply valves (EC 111-112 LCV or EC 121-122 LCV) and filling the emergency condensers manually.

(Note: The make-up supply valves fail open on loss of air, therefore the condensers can always be filled, either to overflowing or based on pre-determined amounts of make-up).

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Flow transmitters located in the turbine building (FT 202-92A and 49A)
FRC Equipment Item No.:	N/A
Manufacturer:	GE/MAC
Model:	554
Safety Function:	Control of exhaust flow from reactor building emergency ventilation system
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These transmitters monitor exhaust air flow from the reactor building emergency ventilation system and control the inlet damper to the exhaust fans to automatically regulate flow. Failure of the transmitters could result in loss of reactor building emergency exhaust.

Should reactor building emergency exhaust flow be lost due to transmitter failure, the inlet dampers can either be manually controlled or failed open (by isolating instrument air) in order to regain emergency ventilation flow. Consequently, transmitter failure does not adversely impact accident mitigation.

In addition, indication of exhaust air flow is available from other sources (e.g. filter differential pressure, fan operation/valve line-up, etc.)

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Flow transmitters located in the reactor building (FTRD-15)
FRC Equipment Item No.:	N/A
Manufacturer:	GE/MAC
Model:	553
Safety Function:	Provides signal to regulate control rod drive hydraulic system flow to a constant 65 gpm.
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

The control rod drive hydraulic system provides water for charging scram accumulators, for normal rod movement, for control rod drive cooling, and also provides a small amount of high pressure coolant injection, which provides core cooling for certain primary system leakage or line breaks up to 0.003 square feet.

This flow transmitter monitors control rod drive hydraulic system flow and provides the input signal to two E/P converters which in turn operate control rod drive flow control valves. These valves maintain control rod drive hydraulic system flow at 65 gallons per minute.

Should the transmitter fail, flow control could be lost. However, with the scram accumulators charged at the start of an accident, the requirement to constantly charge them terminates. Once the scram occurs, normal rod motion and control rod drive cooling are also unneeded. Finally, any high pressure injection function can be provided by the high pressure coolant injection system, which is also backed-up by core spray/automatic depressurization system.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Pressure transmitter located in reactor building (PTID-46A and 46B)
FRC Equipment Item No.:	25
Manufacturer:	GE/MAC
Model:	551
Safety Function:	Provides indication of reactor vessel pressure.
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These pressure transmitters provide control signals to the feedwater control system and also provide indication of reactor vessel pressure for the operator. It is expected that these transmitters will operate in a post-accident condition because they are located in the reactor building, where radiation is the only adverse parameter for an accident within containment or because a high energy line break in the reactor building can be quickly terminated. Nevertheless, post-accident failure of these transmitters is acceptable for the following reasons:

1. Short-term protective functions will be performed by separate and independent pressure transmitters.

2. Automatic feedwater control is not required to mitigate the accident.

3. Once core spray has been initiated, vessel pressure will essentially be core spray system head and vessel pressure is not a critical parameter at this time.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Level transmitter located in reactor building (LTIA-12)
FRC Equipment Item No.:	38
Manufacturer:	GE/MAC
Model:	553
Safety Function:	Provides indication of reactor vessel level.
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

This level transmitter provides control signals to the feedwater control system and also provide indication of reactor vessel level for the operator. It is expected that transmitter will operate in a post-accident condition because it is located in the reactor building, where radiation is the only adverse parameter for an accident within containment or because a high energy line break in the reactor building can be quickly terminated. Nevertheless, post-accident failure of the transmitter is acceptable for the following reasons:

1. Short-term protective functions will be performed by separate and independent level transmitters.

2. Automatic feedwater control is not required to mitigate the accident.

3. Once core spray has been initiated, the core will be cooled as long as core spray flow is maintained. Reactor vessel level is not a significant parameter in this operating configuration.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Electric motors located in the reactor building elevation 198 feet (M-81-23, 24, 03, 04)
FRC Equipment Item No.:	44
Manufacturer:	GE
Model:	5K6336XC-166A
Safety Function:	Drives core spray pumps
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Core spray pump motor drives are located on the 198 foot level of the reactor building where the limiting post-accident environment, except for radiation, is not highly stressful on equipment (100F, 1 psig, 1×10^6 Rads). In addition the two core spray loops are physically separated, therefore at least one of the 100 percent capacity loops will be in an even less stressful environment during a specific accident. Consequently, it is expected that one, if not both, core spray loops will remain operational throughout any post-accident environment.

In the unlikely event of loss of all core spray pumping capacity, core spray flow can be maintained by cross-connecting the core spray discharge headers with the containment spray raw water system. This cross-connect permits pumping of raw lake water directly from the intake tunnel to the core using raw water pumps which are located in a mild environment.

Even in the worst possible scenario, where the pipe break exists in the reactor recirculation piping, core flooding/cooling using raw water would continue until containment water volume reaches a level where the core remains covered without continuous raw water addition. Long-term cooling can then be performed by the emergency condensers, or even by the shutdown cooling system.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Electric motors located in the reactor building elevation 237 feet (M-81-49, 50, 51, 52)
FRC Equipment Item No.:	42
Manufacturer:	GE
Model:	5K828837C7
Safety Function:	Drives core spray topping pumps
Qualification Deficiency:	Similarity, qualified life, pressure

Justification for Continued Operation:

Core spray topping pump motors are located on the 237 foot level of the reactor building where the limiting post-accident environment, except for radiation, is not highly stressful on equipment (126F, 1 psig, 1 x 10^6 Rads). In addition the two core spray loops are physically separated, therefore at least one of the 100 percent capacity loops will be in an even less stressful environment during a specific accident. Consequently, it is expected that one, if not both, core spray loops will remain operational throughout any post-accident environment.

In the unlikely event of loss of all core spray pumping capacity, core spray flow can be maintained by cross-connecting the core spray discharge headers with the containment spray raw water system. This cross-connect permits pumping of raw lake water directly from the intake tunnel to the core using raw water pumps which are locted in a mild environment.

Even in the worst possible scenario, where the pipe break exists in the reactor recirculation piping, core flooding/cooling using raw water would continue until containment water volume reaches a level where the core remains covered without continuous raw water addition. Long-term cooling can then be performed by the emergency condensers, or even by the shutdown cooling system.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Electric Motors Located in the reactor building Elevation 198 feet (M-80-03, 04, 23, 24)
FRC Equipment Item No.:	43
Manufacturer:	GE
Model:	5K6328XC-136A
Safety Function:	Drives containment spray pumps
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Containment spray pump motor drives are located on tne 198 foot level of the reactor building where the limiting post-accident environment, except for radiation, is not highly stressful on equipment (100F, 1 psig, 1×10^6 Rads). In addition the two containment spray loops are physically separated, therefore at least one of the 100 percent capacity loops will be in an even less stressful environment during a specific accident. Consequently, it is expected that one, if not both, containment spray loops will remain operational throughout any post-accident environment.

In the unlikely event of loss of all containment spray pumping capacity, containment spray flow can be maintained by cross-connecting the containment spray discharge headers with the containment spray raw water system. This cross-connect permits pumping of raw lake water directly from the intake tunnel to the spray header using raw water pumps which are located in a mild environment.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Electric Motors Located in the reactor building Elevation 237 feet (NC 08A and NC 08B)
FRC Equipment Item No.:	N/A
Manufacturer:	GE
Model:	5K814316A73
Safety Function:	Drives control rod drive hydraulic pumps
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

The control rod drive hydraulic system motor drives are located on the 237 foot level of the reactor building where the limiting post-accident environment, with exception of radiation, is not highly stressful on equipment (126F, 1 psig, 1 x 10^6 Rads). Consequently, it is expected that these motors will function in a post-accident environment.

The control rod drive hydraulic system provides water for charging scram accumulators, for normal rod movement, for control rod drive cooling, and also provides a small amount of high pressure coolant injection which provides core cooling for certain primary system leakage or line breaks up to 0.003 square feet.

Control rod drive hydraulic functions are not required once an accident has occurred. The scram accumulators are charged at the start of the accident and therefore they will function. Once the scram occurs, normal rod motion is irrelevant. Finally, any high pressure injection needs will be accommodated by the high pressure coolant injection system.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Electric motors located in the reactor building (M202-33, 202-53)
FRC Equipment Item No.:	N/A
Manufacturer:	GE
Model:	5K184AL 218
Safety Function:	Drives for reactor building emergency ventilation exhaust fans
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Reactor building emergency exhaust fans function following an accident inside Containment or the reactor building in order to filter exhaust air wnile maintaining a negative pressure in the reactor building relative to the outside atmosphere. Since they are physically located in the turbine building, the only harsh environmental parameter to which these motors are exposed in an accident condition for which they must operate is radiation. Furthermore in an accident, the radiation level is mostly caused by the air which the fans are exhausting. Therefore under non-accident conditions, the fans are not subjected to any significant radiation levels.

Consequently, it is expected that these fans will function normally under accident conditions. This is particularly true since the radioactive air being exhausted will be greatly reduced once post-accident containment pressure is reduced or the leakage into the reactor building has been terminated.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Electric motors located in the reactor building elevation 298 feet (M 70-01, 02, 03)
FRC Equipment Item No.:	41
Manufacturer:	GE
Model:	5K445AK249A
Safety Function:	Drives reactor building closed loop cooling water pumps
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These motors drive the three 50 percent capacity reactor building closed loop cooling pumps. Normally, one or two of the three pumps is in operation and under accident conditions, one pump can supply the cooling loads with accident mitigation functions. The motors are located in the reactor building where the only harsh environmental parameter during an accident inside containment is radiation. During a high energy line break in the reactor building, the motors may be exposed to a temperature of 300F but this temperature can be quickly lowered by isolating the high energy line break at the containment boundary. Consequently, it is considered highly unlikely that all three motors would fail under these conditions.

Should all reactor building closed loop cooling flow be lost following an accident, the following cooling loads with accident mitigation functions may be jeopardized: high pressure coolant injection, instrument air, H_2-O_2 monitoring. In case of loss of these systems, the following backups are available:

Load	Backup
High Pressure Coolant Injection System	Core spray/automatic depressurization system or emergency cooling
Instrument Air	Essential components operated by instrument air fail to their safety position. Motor-operated valves can be used to control the cooldown in the absence of air-operated valves.
H_2-O_2 Monitoring	Oxygen content can be maintained below 4 percent by excess inerting of the containment with nitrogen.

Therefore, justification for continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Valve Actuator located inside the drywell (IV38-01 and 38-13)
FRC Equipment Item No.:	N/A
Manufacturer:	Limitorque
Model:	SMB2
Safety Function:	Isolation of shutdown cooling system
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Under normal plant operating conditions, the shutdown cooling system is not in operation and its drywell isolation valves are closed. Should these valves be open when an accident occurs, isolation valves 38-01 and IV38-13 close to isolate the drywell. Since isolation occurs at the start of an accident, it is expected that the valves will function. If they should be open and if they should fail to close, isolation is still performed by the valves located outside the drywell (38-02, a motor operated valve and 38-12, a check valve).

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building (SV68-08C, 68-09C, 68-10C)
FRC Equipment Item No.:	18
Manufacturer:	Asco
Model:	WPLB 8300 B68F
Safety Function:	Operates torus vacuum relief valve
Qualification Deficiency:	Similarity, aging degradation, qualified life, aging simulation

Justification for Continued Operation:

The torus vacuum relief valves are normally closed valves which open to prevent a vacuum in the torus with respect to outside atmosphere. The solenoid valves are energized to keep the relief valves normally shut. On loss of electric power or air, the relief valves fail open. Containment integrity is not breached with a relief valve open because of check valves in each relief line.

The solenoid valves are located in the reactor building where the only harsh environmental parameter during an in containment accident is radiation. Since they will operate early in an accident, they are expected to function. Should one or more of the solenoids fail, it is most likely that the solenoid will deenergize, causing the relief valve to go to its safety position, open.

Therefore, justification for the continued safe operation of the plant is justified.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building (SOV 40-32B, 40-32C, 40-33B, 40-33C)
FRC Equipment Item No.:	N/A
Manufacturer:	Asco
Model:	HT 8320A90
Safety Function:	Closes the core spray high point vents, on high drywell pressure or reactor low-low level
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Isolation valves 40-32 and 40-33 are air-operated isolation valves in the 1 inch vent lines from the high points of the core spray headers. These valves are normally shut and are opened only to vent the core spray line to the equipment drain system. Each air-operator is controlled by two solenoid valves in series (40-32B and C or 40-33B and C). Both solenoids must be energized simultaneously for the air to open the isolation valve.

Should an isolation valve be open when an accident occurs, the valve will automatically close on either a high drywell pressure or reactor low-low level signal. Since these signals will be received at the start of an accident, the solenoids are expected to operate. Furthermore, the only way that 40-32 or 40-33 will remain pressurized (i.e. open) is for a solenoid to fail in such a way that it either remains energized or sticks. Finally, should 40-32 or 40-33 remain open, motor-operated valves inside the drywell (40-30 and 40-31) can still isolate the vent line.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the turbine building (SV/BV-202-15, 16, 31, 32, 34, 35, 36, 37, 38, 74, 75)
FRC Equipment Item No.:	N/A
Manufacturer:	Asco
Model:	8300C68/8300C68F
Safety Function:	Operation of dampers in reactor building ventilation supply, normal exhaust, and emergency exhaust
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These solenoid valves control the air supply to air-operated dampers in the reactor building ventilation system as follows:

SV/BV202-15, 16	Ventilation supply discharge duct
SV/BV202-31, 32	Normal exhaust inlet duct
SV/BV202-34, 35	Emergency exhaust discharge ducts
SV/BV202-36	Emergency exhaust common inlet duct
SV/BV202-37, 38	Emergency exhaust inlet ducts
SV/BV202-74, 75	Turbine building supply to emergency exhaust inlet duct

Under accident conditions, these dampers are shifted to isolate normal exhaust and establish emergency exhaust, and also to isolate the normal supply and exhaust systems under high radiation conditions.

The solenoid valves are located in the turbine building, where the only harsh environment parameter with an accident in containment or the reactor building is radiation. Consequently, these solenoids are expected to operate, particularly at the start of an accident. In addition, the normal supply and exhaust isolation dampers are each controlled by two solenoid valves which have to fail to de-energize in order to prevent the dampers from shifting.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building (SV/IV05-1A/B,-2R,-3R,-4A/B,-11B,-12A)
FRC Equipment Item No.:	N/A
Manufacturer:	Asco
Model:	NP8344A71 E
Safety Function:	Isolates emergency condenser vent line to main steam line
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

The emergency condenser steam lines are vented to the main steam lines in order to remove air and non-condensable gases which could interfere with natural circulation. Under normal conditions, these air-operated vent valves are open. The solenoid valves control the air to the vent valves. Under accident conditions, the vent valves are shut and the emergency condensers are manually vented to the torus.

The solenoid valves are exposed to a harsh environment by a break outside the drywell in the emergency condenser piping. In this case, the emergency condenser cooling loop will be isolated and therefore the isolation of the 1 inch vent line is not of concern. For other high energy line breaks, the solenoids are in a much less severe environment and are expected to operate normally.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment: Position limit switches

FRC Equipment Item No.: See Below

Manufacturer: Namco/Fisher Controls

Model: Various (see below)

Safety Function: Indication (and alarm) of valve position for the operator

Qualification Deficiency: Documented evidence of qualification

Justification for Continued Operation:

The limit switches listed below provide indication (and alarm) of isolation valve position. The switches provide no automatic control or safety related function, other than indication and alarm. By emergency procedure, the operator checks these indicators after isolation occurs. Since isolation occurs at the beginning of an accident, it is expected that the indicators will work properly. Should a switch indicate that a valve did not achieve its safety position, the operator would attempt to put it in its safety position or would verify that it actually was in its safety position. These position switches are:

Plant I.D. No.	Mfgr.	Model No.	FRC No.	Valve Indication
POS39-11 to 14	Fisher	304	N/A	Emergency cooling drain line
POS39-05, 06	Namco	SL3L	50	Emergency cooling condensate return
POS01-05, 06	Namco	D2400X	46	Main steam by-pass
POS40-32,33	Namco	EA170	N/A	Core spray vent line
POS68-02 to 07	Namco	D2400X-2	N/A	Torus vacuum relief
POS80-15,16,35,36	Namco	D2400X	N/A	Containment spray discharge
POS83.1-10	Namco	D2400X	45	Equipment drain line from drywell
POS83.1-12	Namco	D2400X	45	Floor drain line from drywell
POS201-08	Namco	D2400XR	45	Torus air vent
POS201-10	Namco	D2400XR	45	Drywell air vent
POS201-16	Namco	D2400XR	45	N_2 supply to condenser
POS201-32	Namco	D2400XR	47	N_2 vent and fill
POS201.2-32,03	Namco	D2400X	47	N_2 makeup and bleed
POS201.2-33,06	Namco	D2400X-2	45	N_2 makeup and vent

Plant I.D. No.	Mfgr.	Model No.	FRC No.	Valve Indication
POS201.1-09,11	Namco	EA180	N/A	N_2 to emergency vent system
POS201.2-109,110, 111, 112	Namco	EA170	N/A	Containment atmospheric dilution sample lines
POS201.7-08,09, 10,11	Namco	D2400X-2	N/A	Turbine building sample sink
POS58.1-01	Namco	D2400X	N/A	Condenser makeup to torus
POS122-03	Namco	EA170	N/A	Post-accident sample line

In addition to the above, each line from the drywell or torus is isolated by at least two isolation valves, either check valves or other air-operated or motor-operated valves. Consequently, should an isolation valve fail to close and should its position indicator fail to correctly indicate valve position, the operator has other valves and indicators to check to ensure isolation has occurred.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Pressure indicating switches located in the reactor building (NR-108A to F)
FRC Equipment Item No.:	N/A
Manufacturer:	Barksdale
Model:	1539VX
Safety Function:	Operates electro-matic relief valves of the automatic depressurization system
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

The automatic depressurization system relief valves are installed to reduce reactor vessel pressure to allow core spray system operation for piping breaks smaller than 0.3 square feet. Three of the six installed valves are sufficient to provide the design blowdown. Relief valves are operated manually or automatically upon simultaneous low-low-low reactor level and high drywell pressure.

Since a reactor vessel blowdown will occur at the start of a small-break loss of coolant accident (i.e. brief exposure to harsh evironment) it is expected that at least three of the six valves will function. Once reactor pressure has been reduced to permit core spray flow, the automatic depressurization system relief valves no longer perform an accident mitigating function. In addition, these switches are located in the reactor building and are in permanent enclosures which makes it even more likely that they will operate.

Should a condition occur where automatic depressurization system was required (i.e. loss-of-coolant-accident with pipe break less than 0.3 square feet) and should the system fail to achieve the necessary blowdown (i.e. at least four of six valves fail to open), adequate core cooling will be provided and reactor vessel pressure will be lowered by the high pressure coolant injection system, the emergency condensers, or a combination of the two. In addition, with the loss-of-coolant accident inside containment, the high pressure coolant injection system is essentially located in a mild environment (turbine building) and the emergency cooling system will be subjected to high radiation only (reactor building).

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Main steam line outboard isolation valve position switches (POS01-01 to 01-04)
FRC Equipment Item No.:	49 & 100
Manufacturer:	Namco
Model:	SL3C-58T-W
Safety Function:	Initiates reactor scram on main steam line isolation valve position
Qualification Deficiency:	Radiation

Justification for Continued Operation:

The switch provides a signal to the reactor protection system for reactor scram on main steam line position. Failure of the switch to generate a reactor scram on valve position would result in increased reactor pressure and power and a decrease in indicated reactor coolant level, all of which generates reactor scram signals for off normal values of these parameters. Mitigation of a high energy line break or loss of coolant accident is not dependent on these switches. These switches provide an anticipatory reactor trip due to loss of normal heat sink, the main condenser.

Although time/temperature aging analysis currently indicates limited qualifications based on conservative ambient temperatures, it is unlikely the switch would fail. Normal technical specification surveillance testing provides a means to monitor switch operability for age related failures. (The switches are scheduled for replacement with qualified EA740 models.)

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building controlling inert gas purge and fill valves
FRC Equipment Item No.:	15/16
Manufacturer:	Asco
Model:	Various (see below)
Safety Function:	Operate to purge the drywell, torus, emergency ventilation system, and condenser
Qualification Deficiency:	Documented evidence of qualification, similarity, aging degradation, qualified life, aging simulation

Justification for Continued Operation:

The following solenoid valves located in the reactor building control air operated valves which perform functions associated with purge and fill of the drywell, torus, and associated ventilation lines:

Valve	Model No.	Function
SOV201.2-02	8300B61F	N_2 supply to drywell
SOV201.2-04	8300B61F	N_2 supply to torus
SOV201.9-91	HT8317A30	N_2 supply to drywell
SOV201.9-92	HT8317A30	N_2 supply to torus
SV/IV201.2-06	WPLB8300B72F	N_2 supply to torus
SV/IV201.2-33	8300B61RU	N_2 supply to torus
SV/IV201-08	WPLB8300B72F	Torus atmospheric vent
SV/IV201-10	WPLB8300B72F	Torus atmospheric vent
SV/IV201-16	WPLB8300B72F	N_2 supply to condenser
SV/IV201.1-09	NP8344A71E	N_2 supply to emergency Ventilation
SV/IV201.1-11	NP8344A71E	N_2 supply to emergency ventilation
SV/IV201.2-03	8300B61	N_2 supply to drywell
SV/IV201.2-32	8300B61RU	N_2 supply to drywell
SV/IV201-32	WPHV202-302-1F	N_2 vent and fill (drywell)

The containment atmospheric dilution system prevents the build-up of a combustible concentration of hydrogen and oxygen within the containment following a loss of coolant accident. The system functions by a combination of purging with nitrogen and venting to either the reactor building emergency ventilation system or the main condenser. During an accident within the containment, radiation is the only harsh environmental parameter to which these valves are exposed. Since the maximum hydrogen and oxygen generation

occurs at the beginning of an accident, it is highly improbable that any of these valves will fail due to radiation before the time when all vent and purge functions have been accomplished. In addition, several solenoid valves would have to fail in order to prevent the introduction of nitrogen to both the drywell and the torus and to prevent purging of the ventilation paths.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building (SV/IV80-15,-16,-35,-36)
FRC Equipment Item No.:	12
Manufacturer:	Numatics
Model:	46JLSAD3, 48JLSAD3
Safety Function:	Open isolation valves to initiate containment spray
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

One air-operated isolation valve (80-15,-16,-35 or-36) are located in each of the four containment spray discharge headers to the drywell. These valves are normally open and fail open on loss of air. Each isolation valve is controlled by a set of two normally de-energized solenoid valves. The isolation valves will remain open (their safety position) unless both of their respective solenoid valves fail to their energized positions.

Following a loss-of-coolant accident within the containment, the solenoid valves only need remain de-energized to keep the isolation valves in their safety position (open). Radiation is the only harsh environmental parameter to which the solenoids are exposed. The signals to energize the solenoids (to shut the isolation valves) come from the control room, which is in a mild environment. Consequently, there is no credible scenario by which radiation could result in the energizing of both solenoids in a set with the subsequent closure of the respective isolation valve. Furthermore, three of the four isolation valves would have to shut (i.e. six of the eight solenoids energized) before 100 percent capacity of the containment spray system would be lost.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building (SV/IV 58.1-01)
FRC Equipment Item No.:	N/A
Manufacturer:	Asco
Model:	WP8300B61RU
Safety Function:	Isolation of condensate make-up line to torus
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Valve 58.1-01 isolates the torus make-up line from the condensate storage tank. Valve 58.1-01 is normally closed and remains closed during an accident. Should valve 58.1-01 happen to be open at the start of an accident, the solenoid valves must de-energize in order to cause the isolation valve (58.1-01) to close. Since the solenoid valve is outside of the containment where the only harsh parameter is radiation, the solenoids are expected to operate normally at the start of the accident. Furthermore, should both solenoids fail, isolation of the make-up line will be accomplished by the self-actuating check-valve 58.1-02.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building (SV/IV01-03 and 01-04)
FRC Equipment Item No.:	N/A
Manufacturer:	Asco
Model:	WPHTX8300B61U
Safety Function:	Close main steam isolation valves 01-03 and 01-04
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Main steam isolation valves 01-03 and 01-04 are normally-open/fail-closed valves. At the start of an accident, they close to isolate the main steam lines. The solenoid valves which operate the main steam isolation valves merely have to de-energize in order to close the main steam isolation valve. Since main steam isolation occurs at the start of an accident, it is expected that the solenoids will operate normally and will perform their safety function. Should both solenoids fail and should the main steam isolation valves remain open (main steam isolation valves also close on loss of air), the main steam line can still be isolated by the motor-operated isolation valve in each line located within the drywell. Since the solenoids are outside the drywell and the motor-operated isolation valves are inside the drywell, they will not be simultaneously exposed to a harsh environment (except for radiation). Even if all these solenoid valves fail to operate simultaneously, valves 01-03 and 01-04 can be manually closed by isolating and venting the instrument air supply.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building (SV/IV83.1-10 and 83.1-12)
FRC Equipment Item No.:	N/A
Manufacturer:	Asco
Model:	WP8300B61RU
Safety Function:	Actuate to isolate drywell to floor drain and equipment drain waste collector tanks (83.01-10 and 83.1-12)
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Floor drain and equipment drain lines from the drywell are each isolated at the start of an accident by motor-operated isolation valves inside the drywell (83.1-09 and 83.1-11) and air-operated valves outside the drywell (83.1-10 and 83.1-12). Except for radiation, either the motor-operated or air-operated valves (including their solenoids) will not be exposed to a harsh environment. Since the isolation occurs at the start of an accident, the solenoids are expected to function normally. Should the solenoids fail to de-energize and the air-operated isolation valves remain open, the drain lines can be isolated by the motor-operated valves or by isolating and venting the air to the air-operated valves.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment: Solenoid valves located in the reactor building

FRC Equipment Item No.: N/A

Manufacturer: Asco

Model: Various (see below)

Safety Function: Isolate H_2-O_2 and turbine building sample sink lines/return lines

Qualification Deficiency: Documented evidence of qualification

Justification for Continued Operation:

These solenoids function to open and close sample lines from the drywell as follows:

Valve	Model No.	Function
SOV IV201.7-01	LB8320A-25	H_2-O_2 sample line
SOV IV201.7-02	LB8320A-25	H_2-O_2 sample line
SOV 201.7-20	HT8300B6RU	Turbine Building sample sink
SOV 201.7-21	HT8300B6RU	Turbine Building sample sink
SOV 201.7-23	HT8300B6RU	H_2-O_2 sample return
SOV 201.7-26	HT8300B6RU	H_2-O_2 sample return
SOV 201.7-22	HTX832A22V	H_2-O_2 sample return
SOV 201.7-24	HTX8320A22V	Turbine building sample sink
SOV 201.7-25	HTX8320A22V	Turbine building sample sink
SOV 201.7-27	HTX832A22V	H_2-O_2 sample return
SOV 201.2-419	HTX8320A22V	H_2-O_2 sample return
SOV 201.2-420	HTX8320A22V	H_2-O_2 sample return
SOV 201.2-421	HTX8320A22V	H_2-O_2 sample return
SOV 201.2-422	HTX8320A22V	H_2-O_2 sample return
SOV 201.2-429	HTX8320A22V	H_2-O_2 sample line
SOV 201.2-430	HTX8320A22V	H_2-O_2 sample line
SOV 201.2-431	HTX8320A22V	H_2-O_2 sample line
SOV 201.2-432	HTX8320A22V	H_2-O_2 sample line
SOV 201.7-03	LB8320A-25	H_2-O_2 sample line
SOV 201.7-04	LB8320A-25	H_2-O_2 sample line

These valves are in the reactor building where the only harsh environmental parameter to which they are exposed during an accident in the drywell is radiation. Consequently, they are expected to function normally during the relatively short period of time when drywell atmospheric samples would be needed.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Valve actuator located inside the drywell (40-11)
FRC Equipment Item No.:	3
Manufacturer:	Limitorque
Model:	SMB3
Safety Function:	Opens to initiate core spray
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Valve 40-11 is one of four motor operated isolation valves which open to initiate core spray. The other three actuators (40-01, 09, 10) have recently been replaced with actuators procured from Limitorque as qualified actuators. (40-11 is scheduled to be replaced in the 1984 refueling outage). The valves are arranged in two sets of two valves, one set in each core spray loop discharge header. Opening of either valve in a set allows full core spray flow to pass to the spray nozzles. Since each loop provides 100 percent of required core spray flow, only one valve of the four needs to open to provide 100 percent spray flow. One valve open in each loop provides 200 percent spray flow.

Since core spray is initiated at the start of an accident, it is expected that 40-11 will function before the onset of any environmentally induced failure. However, should 40-11 fail to open, the opening of any one of three isolation valves with recently replaced actuators provides 100 percent spray flow.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Valve actuators located inside the drywell (IV40-30 and IV40-31)
FRC Equipment Item No.:	N/A
Manufacturer:	Limitorque
Model:	SBM000
Safety Function:	Closes the high point vent on high drywell pressure or reactor low-low level.
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Valves 40-30 and 40-31 are drywell isolation valves. They are opened to vent the high points of the core spray discharge headers to the equipment system (via one inch lines). They are automatically closed by either hign drywell pressure or reactor low-low level signals.

Should these valves fail to close, the one inch vent lines will be isolated by air operated valves (40-32 and 40-33) located outside the drywell. Valves 40-32 and 40-33 are energized open and will fail closed on loss of air or electric power.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Valve actuators located inside the drywell (IV01-01, 01-02, 33-01, 33-02)
FRC Equipment Item No.:	2
Manufacturer:	Limitorque
Model:	SMB4, SMB0
Safety Function:	Main steam line isolation valves (01-01, 01-02); reactor water cleanup isolation valves (33-02)
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Valves 01-01 and 01-02 are the main steamline isolation valves inside the drywell. Since these valves close at the start of an accident, it is expected that they will operate before they can be affected by a harsh environment. Should one or both valves fail to close the respective main steam line will be isolated by the air operated isolation valve located outside the drywell (01-03 and 01-04). Valves 01-03 and 01-04 are energized to open and will fail closed on either loss of air or electric power.

Valves 33-01 and 33-02 are reactor water cleanup isolation valves inside the drywell. They are expected to operate in an accident since the isolation will occur at the onset of the accident. Should it fail to close, the system will be isolated by other motor operated valves (33-04 and 33-05) which are located outside the drywell.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Valve actuators located inside the drywell (IV 83.1-09, 83.1-11)
FRC Equipment Item No.:	7
Manufacturer:	Limitorque
Model:	SMB000, SMB4
Safety Function:	Isolates equipment drain and floor drain discharge lines from the drywell
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Valves 83.1-09 and 83.1-11 are the drywell isolation valves on the equipment drain and floor drain discharge lines, respectively. They close on a drywell isolation signal. Since isolation will occur at the start of an accident, the valves are expected to operate before they can be affected by the harsh environment. Should the valves fail to close, the lines will be isolated by air operated isolation valves outside the drywell (83.1-10 and 83.1-12). These valves are energized to open and will fail closed on loss of air or electric power.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Valve actuators located inside the drywell (IV 110-127)
FRC Equipment Item No.:	75
Manufacturer:	Limitorque
Model:	SMB000
Safety Function:	Actuates isolation valve 110-127 to isolate reactor coolant sample line
Qualification Deficiency:	Documented evidence of qualification, similarity, aging degradation, qualified life

Justification for Continued Operation:

Valve 110-127 is a normally closed isolation valve in the one inch reactor coolant sample line. If open, it will close on drywell isolation. Since isolation occurs at the start of an accident, it is expected that the isolation function will be performed. If the valve fails to close, the sample line will be isolated by valve 110-128 which is outside the drywell.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Valve actuators located in the main steam tunnel (IV31-07 and IV31-08)
FRC Equipment Item No.:	N/A
Manufacturer:	Limitorque
Model:	SMB2
Safety Function:	Close feedwater line isolation valves
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Valves 31-07 and 31-08 isolate the feedwater lines at the penetration to the drywell. They are normally open valves which remain open on a loss of coolant accident or high energy line break since the feedwater system will shift to the high pressure coolant injection mode. These valves are closed by the operator when it is necessary to isolate a feed line (i.e. feedwater line break). Since this isolation would occur early in an accident and since the valves are outside the drywell, it is expected that they will function. Should they fail to close, however, check valves 31-01 and 31-02 immediately next to their respective isolation valves provide the drywell barrier.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves in the reactor building (SOV 122-03B, 03A)
FRC Equipment Item No.:	N/A
Manufacturer:	Asco
Model:	HT8320A90MB
Safety Function:	Actuates IV122-02 to provide containment isolation of the post-accident sample line
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These solenoids control valve 122-03 which is the containment isolation valve for the post-accident sample line. The isolation valve is normally closed with the solenoids de-energized. These solenoids need to be qualified to ensure that post-accident samples can be drawn through this system. Nevertheless, they fail safe (i.e. to isolate containment) and if they are failed, post-accident samples will have to be drawn by other means.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves in the reactor building (SV IV01-05, 01-06)
FRC Equipment Item No.:	11
Manufacturer:	Numatics
Model:	463-567 1JSP3
Safety Function:	Main steam isolation valve by-pass line isolation
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Valves 01-05 and 01-06 isolate the outboard main steam isolation valve by-pass line. These valves would only be open when warming up the main steam line. During normal operations, the isolation valves are shut and the solenoid valves (SV/IV 01-05 and SV/IV 01-06) which operate the isolation valves, would be de-energized.

These solenoid valves do not have to operate to perform an accident mitigation function unless the by-pass lines happened to be open at the start of an accident. In this case, the solenoids merely have to de-energize to return to their safety position.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	H_2-O_2 monitors located in turbine building (11, 12)
FRC Equipment Item No.:	N/A
Manufacturer:	Beckman
Model:	H_2-O_2
Safety Function:	Monitors post-accident hydrogen and oxygen concentrations in Containment.
Qualification Deficiency:	Documented evidence of qualification.

Justification for Continued Operation:

These monitors measure post-accident hydrogen and oxygen concentration in containment so that the containment atmospheric dilution system can maintain oxygen concentration below 4 percent. Since they will only be exposed to radiation when they are required to operate, they are expected to function normally. Should both detectors fail, the oxygen concentration can be maintained below 4 percent by over-inerting the containment with nitrogen.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Electric heater located in turbine building (202-76)
FRC Equipment Item No.:	N/A
Manufacturer:	Honeywell
Model:	R7283B 1081
Safety Function:	Reduces relative humidity of reactor building emergency ventilation exhaust air to below 70 percent to retain charcoal efficiency.
Qualification Deficiency:	Documented evidence of qualification.

Justification for Continued Operation:

This heater functions to retain high charcoal adsorber efficiency in the reactor building emergency ventilation system by reducing relative humidity of the filtered air to below 70 percent. The heater is located in the turbine building where the only harsh environmental parameter (when functioning is required) is radiation and therefore the heater is not expected to fail prematurely.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Insulating Tape, Sealant, and Undercoat for 5KV Terminal Insulation
FRC Equipment Item No.:	N/A
Manufacturer:	Kerite
Model:	Splicing Compound Tape/Cement/ 3/4 inch Friction Tape
Safety Function:	Insulation for 5KV Terminals
Qualification Deficiency:	Qualification details not fully substantiated.

Justification for Continued Operation:

The insulating tape, sealant, and undercoat provides insulation for 5KV power terminals. A Wyle Laboratories Assessment Report (17655-TPE-4.1) addresses the qualification of these items, however, the Wyle report relies upon actual test details of Isomedix Report I-R975-01. Once the full test details and results can be verified, the materials are qualified.

In view of the nature of the remaining qualification deficiencies of these items, there is substantial confidence that the items will perform as designed under accident conditions. There is no reason to believe these materials will fail due to an accident environment since they were tested and only verification of test details and results remain.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Flow transmitters in containment (FT-19,20, 21, 22, 23, 24)
FRC Equipment Item No.:	N/A
Manufacturer:	Endevco
Model:	2273AM20
Safety Function:	Provides operator with positive position indication of automatic depressurization system relief valves.
Qualification Deficiency:	Qualification testing not fully documented.

Justification for Continued Operation:

These items are accelerometers installed on the automatic depressurization system relief lines as a TMI action plan item. The equipment is to provide the operator with direct indication of a relief valve opening. There are no control functions, automatic safety functions, or accident mitigating functions associated with this equipment, other than providing the operator with another indication of relief valve opening.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building (SOV39-11C,-11D,-12C,-12D,-13C,-13D,-14C,-14D)
FRC Equipment Item No.:	N/A
Manufacturer:	Valcor
Model:	V70900-21-3
Safety Function:	Isolation of emergency condenser drain lines
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These solenoids close their respective isolation valves which isolate the emergency cooling drain lines from the main steam drain lines. The isolation valves are normally open valves which allow draining of condensation from the emergency cooling steam lines when the emergency condenser system is in the standby mode. They are automatically closed on an emergency cooling system isolation signal which results from either high radiation in the emergency cooling system or an emergency cooling line break (excess flow).

In a loss-of-coolant accident or high-energy-line-break condition, these valves merely back up the 10 and 12 inch emergency cooling isolation valves which also close on an emergency cooling system isolation signal. Since the emergency cooling system will be isolated from the reactor vessel by the 10 and 12 inch valves, the drain line isolation valves perform no accident mitigating functions.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves in the reactor building (SOV 60-17D,-17E,-18D,-18E)
FRC Equipment Item No.:	N/A
Manufacturer:	Valcor
Model:	V70900-21-1
Safety Function:	Control of emergency condenser make-up supply valves
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

Each set of two emergency condensers has a single make-up supply valve (LCV 60-17 or LCV 60-18) which controls flow from its respective 40,000 gallon make-up tank. The make-up valves are controlled by one of two E/P converters, each with an individual level-transmitter providing the level signal. The purpose of solenoids 60-17D, 17E, 18D, and 18E is merely to allow the operator to manually select which of the E/P converters controls the make-up valve. During an accident, there is no need for the solenoids to operate unless the selected E/P converter or level transmitter malfunctions. Further, should a solenoid fail (i.e. shift position), it merely places the back-up E/P converter into operation. Level control should be unaffected.

Finally, should the operator need to change E/P converters and the solenoids are inoperable, the make-up valve can be failed to the full-open position by isolating the instrument air supply.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment: Electrical Insulation and Sealant Materials Located in the Steam Tunnel (Elevation 240 feet)

FRC Equipment Item No.: See Below

Manufacturer: See Below

Model: See Below

Safety Function: Insulation of high-voltage terminals necessary for powering safety-related equipment.

Qualification Deficiency: Documented evidence of qualification.

Justification for Continued Operation:

These materials provide insulation and sealing of high-voltage terminations and cables which power safety-related equipment. The following materials are used:

COMPONENT	FRC NO.	MFGR.	MODEL	FUNCTION
Electrical Sealant	55	J-M	Duxseal	Filler for 5KV Terminals
Electrical Tape	63	3M	83	Cable connection insulation tape
Electrical Sealant	64	GE	227	Filler for 5KV Terminals
Insulating Varnish	66	Westinghouse	1309	5KV Terminal Insulation Varnish
Electrical Tape	67	GE	8380	Cable connection insulation tape

Experience has shown that these types of materials will survive harsh environmental conditions. Tests have been performed of commercially comparable materials, used on heat shrinkable high-voltage terminations, with successful results.

In addition, a main-steam line break in the steam tunnel will be automatically terminated by closure of main-steam isolation valves on a high steam-flow signal. The differential pressure transmitters which signal the closure are located outside the steam tunnel, as is the inboard isolation valve. The outboard isolation valve, which is located in the tunnel, is air-operated and fails closed on loss of air or power. Therefore, the harsh environment in the steam tunnel will be of short duration and there is no reason to suspect failure of insulation or sealant materials.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Motor Generator Sets and Control Panels in the Turbine Building (MG-162, MG-172, MG-162CP, MG-172CP)
FRC Equipment Item No.:	N/A
Manufacturer:	General Electric
Model:	5LS4404 A22425/6PA4404 A22424
Safety Function:	Provides Uninterruptible 120V AC Power to Reactor Protection Buses
Qualification Deficiency:	Documented evidence of qualification.

Justification for Continued Operation:

These motor-generator sets provide uninterruptible power to the reactor protection buses. They are normally in continuous operation as an AC motor/AC generator and automatically shift to the DC motor/AC generator mode on failure of the normal AC source.

The motor-generators and their control panels are located in the turbine building where the maximum post-accident temperature is 133F and there is negligible post-accident radiation. Consequently, there is no reason to suspect that any failure of these generators will occur as a result of environmental conditions.

Finally, should a motor-generator fail (i.e. loss of the AC generator end), its reactor protection bus can be powered from Panel #167A by either off-site power or emergency diesels.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Circuit breakers located in the reactor building (PB-16A, 16B, 17A and 17B)
FRC Equipment Item No.:	62
Manufacturer:	General Electric
Model:	AKD-5
Safety Function:	Provides 600 volt electric power to safety-related equipment.
Qualification Deficiency:	Documented evidence of qualification.

Justification for Continued Operation:

These circuit breakers provide power to various electrical equipment which are needed for loss of coolant accident/high energy line break mitigation. The circuit breakers are passive in the safeguard mode; that is they are normally closed and are not required to operate during the course of the loss of coolant accident/high-energy line break. In addition, the harsh environmental conditions in the reactor building (with exception of radiation) are of a short duration and it is not reasonable to expect these conditions to result in the failure of a normally closed circuit breaker.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Motor control centers located in the reactor building (MCC-155, 167, 161A/B, 171A/B) and battery board located in the turbine building (BB-12)
FRC Equipment Item No.:	72
Manufacturer:	General Electric
Model:	IC7700
Safety Function:	Electric power distribution to various safety-related equipment
Qualification Deficiency:	Documented evidence of qualification.

Justification for Continued Operation:

These motor control centers and battery board provide electric power to various safety-related equipment such as containment isolation valves, reactor building emergency ventilation fans, diesel-generator auxiliaries, and back-up instrument bus power.

A qualification analysis of this equipment is currently in progress by General Electric. A preliminary qualification report was issued in November 1983 (NEDC-30322-P). This report indicates a qualified life for the components of this equipment as follows:

Circuit Breaker	26 years @	80 percent load and 25 percent duty cycle
Magnetic Starter	13 years @	25 percent duty cycle
Control Power Transformer	18 years @	25 percent duty cycle

In view of the conservatism of the analysis (i.e. 25 percent duty cycle) and the preliminary results, it is concluded that this equipment will continue to function satisfactorily until such time as the analysis is completed and the equipment is included in the maintenance and surveillance program to ensure continuing qualification.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Control cable located in the reactor building
FRC Equipment Item No.:	94
Manufacturer:	Rockbestos
Model:	RSS6104
Safety Function:	Instrument cable to post-accident radiation detectors
Qualification Deficiency:	Evidence of qualification not documented.

Justification for Continued Operation:

This control cable is associated with post-accident radiation detectors installed as a TMI action item. The cable is scheduled to be replaced with qualified Rockbestos RSS6104-1081 cable. The radiation detectors provide no automatic control function and are for indication only.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Cable terminations in the reactor building
FRC Equipment Item No.:	60
Manufacturer:	AMP Inc.
Model:	Ring tongue terminal
Safety Function:	Cable termination for cable to various safety-related equipment
Qualification Deficiency:	Anomaly during testing not resolved.

Justification for Continued Operation:

These cable terminations are associated with various equipment required for accident mitigation. During testing of these terminals, an anomaly occurred during which insulation sleeves slipped off the wire barrels on some unenergized "plasti-grip" specimens mounted vertically with the ring tongue end up during the accident simulation. An engineering evaluation is being conducted to resolve the anomaly and to determine the physical configuration of the terminations at Nine Mile Point Unit 1.

Although the test identified this anomaly, there is no presently identified problem at Nine Mile Point Unit 1 for the following reasons:

1. There are no known vertically mounted insulation sleeves with the ring tongue end up.

2. Even if the insulation sleeves were to slip under accident conditions, there is no evidence that there will be an equipment failure.

3. Should a vertical configuration be discovered, the configuration will be immediately rectified or a justification for continued operation will be prepared based upon the accident mitigating function of the affected equipment.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Containment penetrations/connectors
FRC Equipment Item No.:	52
Manufacturer:	D.G. O'Brien
Model:	Various
Safety Function:	Provides electric power for equipment inside the containment and containment boundary integrity.
Qualification Deficiency:	Additional materials data and spray effects not documented.

Justification for Continued Operation:

Three separate test reports (FIRL F-C4879-1, Wyle 17655, Patel PEI-TR-82-12-101) all support the environmental qualification of the penetrations/connectors. While additional evaluation is required to fully establish qualification, testing and analyses performed to date provides sufficient confidence in the capabilities of these assemblies to perform under accident conditions. In addition, the integrity of the penetrations is demonstrated every 3 years under peak containment accident pressure during 10CFR50, Appendix J, Type A testing.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Electrical terminal blocks inside containment (EB-5 and EB-25)
FRC Equipment Item No.:	53
Manufacturer:	General Electric
Model:	N/A
Safety Function:	Provide electric power to various safety-related equipment inside containment
Qualification Deficiency:	Similarity with tested component not fully documented.

Justification for Continued Operation:

Wyle analysis report 17655-TB-1.1 addresses the qualification of the terminal blocks. However, there is a question as to the similarity between terminal blocks EB-5, 25 and the tested CR-151 terminal block. Another Wyle report, 17436-15, appears to fully qualify terminal blocks EB-5 and EB-25. However, these reports have not yet been obtained and reviewed. Nevertheless, there has been sufficient testing and analysis to conclude that the terminal blocks will perform satisfactorily in a post-accident environment and that the remaining qualification deficiencies can be adequately resolved.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Pressure switch located in the reactor building (PS-RD-68A, B)
FRC Equipment Item No.:	N/A
Manufacturer:	Mercoid
Model:	DA23-156 R.63/X-DAW-43-103 R26E
Safety Function:	Trips control rod drive hydraulic pump on low suction pressure (5 psig decreasing)
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These pressure switches trip their respective control rod drive hydraulic pump on low suction pressure. Their malfunction can cause an inadvertent loss of the pump.

The control rod drive hydraulic system provides water for charging scram accumulators, for normal rod movement, for control rod drive cooling, and also provides a small amount of high pressure coolant injection which provides core cooling for certain primary system line breaks up to 0.003 square feet.

Control rod drive hydraulic functions are not required once an accident has occurred. The scram accumulators are charged at the start of the accident and therefore they will funcion. Once the scram occurs, normal rod motion is irrelevant. Finally, any high pressure injection needs will be accommodated by the high pressure coolant injection system.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Pressure switches located in the reactor building (PS70-108, 109, 110)
FRC Equipment Item No.:	N/A
Manufacturer:	Mercoid
Model:	DA23-156-R5S
Safety Function:	Trips reactor building closed loop cooling pumps on low suction pressure.
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These pressure switches trip their respective reactor building closed loop cooling pump on low suction pressure. Malfunction of these switches can cause inadvertent loss of one or more closed loop cooling pumps.

There are three 50 percent capacity reactor building closed loop cooling pumps. Normally, one or two of the three pumps are in operation and under accident conditions, one pump can supply the cooling loads having accident mitigation functions. The motors are located in the reactor building where the only harsh environmental parameter during an accident inside containment is radiation. During a high energy line break in the reactor building, the motors may be exposed to a temperature of 300F but this temperature will be quickly lowered by isolating the high energy line break at the containment boundary. Consequently, it is considered highly unlikely that all three motors would fail under these conditions.

Should all reactor building closed loop cooling flow be lost following an accident, the following cooling loads with accident mitigation functions may be jeopardized: high pressure coolant injection, instrument air, H_2-O_2 monitoring. In case of loss of these systems, the following backups are available:

LOAD	BACKUP
High Pressure Coolant Injection System	Core spray/automatic depressurization system and/or emergency cooling
Instrument Air	Essential components operated by instrument air fail to their safety position. Motor-operated valves can be used to control the cooldown in the absence of air-operated valves.
H_2-O_2	Oxygen content can be maintained below 4 percent by excess inerting of the containment with N_2.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment: Valve actuators outside containment

FRC Equipment Item No.: 1, 4, 5, 6, 8, 9, 73, 74, 76, 77, 78

Manufacturer: Limitorque

Model: SMBO, 000, 3/SB1, 2

Safety Function: Actuate valves for isolation and emergency core cooling system operation

Qualification Deficiency: Documentation deficiencies exist.

Justification for Continued Operation:

The motor operated valves listed below are either containment isolation valves or are safety system valves with accident mitigating functions:

PLANT ID NO.	MODEL NO.	SYSTEM
BV05-05	SMB000	Emergency condenser vent to torus
BV05-07	SMB000	Emergency condenser vent to torus
BV93-25	SMBO	Containment spray raw water line
BV93-26	SMBO	Containment spray raw water line
BV93-27	SMBO	Containment spray raw water line
BV93-28	SMBO	Containment spray raw water line
IV201-31	SMB000	N_2 fill and vent
IV33-04	SB1	Reactor clean-up
IV39-07	SB2	Emergency cooling steam line
IV39-08	SB2	Emergency cooling steam line
IV39-09	SB2	Emergency cooling steam line
IV39-10	SB2	Emergency cooling steam line
IV110-128	SMB000	Reactor coolant sample line
IV201-07	SMB000	Torus vent and purge
IV201-09	SMB000	Drywell vent and purge
IV201-17	SMB000	Torus vent and purge
IV34-01	SMB000	Head spray line

PLANT ID NO.	MODEL NO.	SYSTEM
IV38-02	SMB3	Shutdown cooling
IV40-05	SMB00	Core spray test line
IV40-06	SMB00	Core spray test line
IV80-01	SMB00	Containment spray suction
IV80-02	SMB00	Containment spray suction
IV80-114	SMB000	Containment spray drain Line
IV80-115	SMB000	Containment spray drain Line
IV80-21	SMB00	Containment spray suction
IV80-22	SMB00	Containment spray suction
IV81-01	SMB00	Core spray suction
IV81-02	SMB00	Core spray suction
IV81-21	SMB00	Core spray suction
IV81-22	SMB000	Core spray suction

In the case of the containment isolation valves, they will close at the start of an accident. In addition, they are also backed up by a redundant isolation valve, often a check-valve or air-operated valve located on the other side of the containment boundary (i.e. not exposed to the same environment).

In the case of the safety system valves, these valves are either normally - open/remain open valves (i.e. core spray suctions, containment spray suctions, emergency cooling steam lines, control road drive hydraulic return lines) or are normally shut/remain shut valves (i.e. core spray test line, drywell vent and purge, head spray) or function at the start of an accident (i.e. emergency condenser vent to torus, sample line).

Limitorque operators have been extensively tested throughout the industry and there is substantial evidence that they will not only perform a short-term accident function but will remain operable long-term. There is even evidence that these operators will survive an accident environment without an absolute seal. Any qualification deficiencies which remain outstanding are believed to be documentation problems.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Level transmitters located in the reactor building (LT36-03 A/B/C/D, 04 A/B/C/D, 05 A/B/C/D)
FRC Equipment Item No.:	35
Manufacturer:	Rosemount
Model:	1151
Safety Function:	Reactor level indication and input to the reactor protection system or feedwater control
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These transmitters monitor reactor vessel level and provide indication to the operator, provide input to the reactor protection system or input to feedwater control:

LT 36-03A, 03B, 03C, 03D	High/Low Level
LT 36-04A, 04B, 04C, 04D	Low-Low Level
LT 36-05A, 05B, 05C, 05D	Low-Low-Low Level

The trip functions performed by these transmitters will be performed at the start of an accident. In addition, since they are located in the reactor building where the only harsh environmental parameter is radiation during a loss of coolant accident, it is unlikely that they will fail at onset of harsh environment. Failure of several transmitters is even less likely. Finally, even if all level transmitters are lost during the long term post-accident period, core cooling is ensured by continuing core spray flow.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Pressure transmitters in the reactor building (PT 201.2-476 A/B/C/D)
FRC Equipment Item No.:	30
Manufacturer:	Rosemount
Model:	1151 DP
Safety Function:	Provides containment pressure signal to the reactor protection system
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These transmitters provide the high containment pressure trip to the reactor protection system. Since they are located in the reactor building where the only harsh environmental parameter, during an accident inside containment, is radiation, and since they will trip at the start of an accident, there is no reason to suspect that the trip function will not be performed. This is particularly true because simultaneous failure of these transmitters at the start of an accident due to radiation is highly unlikely.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Flow transmitters located in the reactor building (FT 201.8-35, 41, 45 and 201.9-26, 31, 80)
FRC Equipment Item No.:	N/A
Manufacturer:	Fisher
Model:	2340
Safety Function:	Provides for controls of containment air dilution N_2 flow and pressure
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These transmitters function to regulate flow control valves in the containment air dilution system to control the pressure and flow rate of make-up N_2. These valves are needed only in the case of a design basis accident within containment where hydrogen and oxygen are being generated as a result of the accident. Failure of all of the transmitters could result in a loss of N_2 make-up.

Since these transmitters are located in the reactor building where the only harsh environmental parameter (during a drywell accident) is radiation and since inerting will occur in the early stages of an accident, there is no reason to suspect that failure will occur before they have performed their safety function.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Valve actuators located inside the drywell (IV40-01, 09, 10)
FRC Equipment Item No.:	3, 7
Manufacturer:	Limitorque
Model:	SMB 3
Safety Function:	Open to initiate core spray
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These actuators were recently purchased as qualified actuators and were installed. There appear to be some documentation problems regarding qualified life. Nevertheless, these actuators are believed to be qualified and will certainly perform their short-term safety function.

Therefore, justification the for continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid actuators and position switches located in containment (PSV NR-108A to F and POS NR-108A to F)
FRC Equipment Item No.:	14
Manufacturer:	GE/Unimax
Model:	CR9503-213C/KBL7HB-5
Safety Function:	Operates and indicates position of electro-matic relief valves of the automatic depressurization system
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

The automatic depressurization system relief valves are installed to reduce reactor vessel pressure to allow core spray system operation for breaks smaller than 0.3 square feet. Three of the six installed valves are sufficient to provide the design blowdown. Relief valves are operated manually or automatically upon simultaneous low-low-low reactor level and high drywell pressure.

Since a reactor vessel blowdown will occur at the start of a small-break loss of coolant accident (i.e. brief exposure to harsh environment), it is expected that at least three of the six valves will function. Once reactor pressure has been reduced to permit core spray flow, the relief valves no longer perform an accident mitigating function.

Should a condition occur where automatic depressurization system was required (i.e., loss of coolant accident with pipe break less than 0.3 square feet) and should the system fail to achieve the necessary blowdown (i.e., at least four of six valves fail to open), adequate core cooling will be provided and reactor vessel pressure will be lowered by the high pressure coolant injection system, the emergency condensers, or a combination of the two. In addition, with the loss of coolant accident inside containment, the high pressure coolant injection system is essentially located in a mild environment (turbine building) and the emergency cooling system will be subjected to high radiation only (reactor building).

Therefore, justification for the continued safe operation of the plant is demonstrated.

APPENDIX B

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Temperature switches located in steam tunnel (TS IB-10A thru 10H, J thru N, P, Q, R)
FRC Equipment Item No.:	28
Manufacturer:	Fenwal
Model:	1700240
Safety Function:	Closes main steam isolation valves on high temperature
Qualification Deficiency:	Similiarity, aging, pressure, radiation

Justification for Continued Operation:

The temperature switches monitor steam tunnel temperature and initiate main steam isolation valve closure on high steam tunnel temperature.

If the break is in the main steam line, increased pressure drop across the main steam line flow limiter will initiate main steam isolation valve closure. The pressure drop is measured by instruments dPT 01-26A thru H located outside the steam tunnel (reactor building elevation 237 feet north instrument room) which are not subject to the harsh environment.

A main steam line break in the tunnel will result in low reactor water level, which will cause a scram and low-low water level, which will initiate both main steam isolation valve closure and containment isolation. This instrumentation is located in the reactor building which is not subjected to a harsh environment from a high energy line break in the steam tunnel.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Containment pressure indication (PT201.2-483, 484)
FRC Equipment Item No.:	82
Manufacturer:	Rosemount
Model:	1153
Safety Function:	Provide containment pressure indication to the control room operator following a loss of coolant accident
Qualification Deficiency:	Aging, qualified life

Justification for Continued Operation:

Pressure transmitters, 201.2-483 and 484, provide the control room operator with indication of pressure inside the primary containment following a loss of coolant accident. These transmitters do not automatically initiate any safety systems, they provide indication only. In the event of failure of one of these devices due to age-related degradation, the same function will be provided by the redundant transmitter. Simultaneous failure of both components due to aging is highly improbable. In addition, both devices are located outside of the primary containment and will not be subjected to a steam environment during a loss of coolant accident.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Pressure transmitters located in the reactor building (PT36-23A, B)
FRC Equipment Item No.:	81
Manufacturer:	Rosemount
Model:	1153GA9
Safety Function:	Monitors reactor pressure to correct for pressure change effects on LT36-24A, B
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These pressure transmitters were recently installed as required by NUREG 0737 Item II.F.2.3, Instrumentation for detection of inadequate core cooling. This level monitoring system does not provide for actuation of any safety systems.

Level monitoring installed to mitigate the consequences of a design basis accident is provided by separate and independent instruments.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Level transmitters located in the reactor building (LT36-24A, B)
FRC Equipment Item No.:	83
Manufacturer:	Rosemount
Model:	1153DA5
Safety Function:	Monitor reactor vessel level in fuel zone
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

These level transmitters were recently installed as required by NUREG 0737 Item II.F.2.3, instrumentation for detection of inadequate core cooling. This level monitoring system does not provide for actuation of any safety systems.

Level monitoring installed to mitigate the consequences of a design basis accident is provided by separate and independent instruments.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Solenoid valves located in the reactor building (SOV 122-04 through 122-11)
FRC Equipment Item No.:	79
Manufacturer:	Asco
Model:	HT 8317A29
Safety Function:	Actuates air operated post accident sampling blocking valves (122-04 through 06, 122-08 through 11)

Qualification Deficiency: Documented evidence of qualification

Justification for Continued Operation:

These valves were recently installed as part of the post accident sampling system.

Failure of these valves would not prevent safety-related equipment from performing its intended function. Failure would not affect the plant's accident mitigation capability or its capability to prevent the release of radioactive material to the environment.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Control cable splice located in the steam tunnel at elevation 240 feet
FRC Equipment Item No.:	59
Manufacturer:	AMP Inc.
Model:	Butt
Safety Function:	Butt connectors for various safety-related control cables
Qualification Deficiency:	Assessment report does not provide sufficient similarity information

Justification for Continued Operation:

The test report does not provide sufficient similarity information. An engineering evaluation will be conducted to establish similarity.

The failure of equipment which is fed by cable routed through the steam tunnel at elevation 240 feet does not prevent safe shutdown or result in unacceptable off-site doses as a result of a main steam line break inside the steam tunnel.

A large break in the main steam line downstream of the main steam flow limiter causes increased pressure drop across the limiter. This initiates main steam isolation valve closure. The pressure drop is measured by instruments PT 01-26A thru H located outside the steam tunnel (reactor building elevation 237 feet, north instrument room) which are not subject to the harsh environment. The inboard main-steam isolation-valve and its related electrical components are not subject to the harsh environment as they are located in the drywell. The outboard main-steam isolation-valves which are located in the steam tunnel are air operated valves which fail closed on loss of air or power.

A main steam line break in the tunnel will result in low reactor water level which will cause a scram, and low-low reactor water level which will initiate main steam isolation valve closure and containment isolation. The motor-operated feedwater isolation valves do not receive any isolation signal. In addition, there is a check valve in series which serves the isolation function.

Failure of the steam tunnel temperature switches, or main steam line radiation detectors does not prevent safe shutdown or result in unacceptable off-site doses.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Vacuum switches (VCS 68-11A, 11B, 12A, 12B, 13A, 13B)
FRC Equipment Item No.:	37
Manufacturer:	Mercoid
Model:	CP 4122
Safety Function:	Controls air operated isolation valves 68-08, 09, 10 to admit building atmosphere to drywell/torus
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

The function of vacuum switches 68-11A, 11B, 12A, 12B, 13A, 13B is to open air operated isolation valves 68-08, 09 and 10 when torus pressure is negative with respect to the reactor building. This will admit reactor building atmosphere to the torus, thus equalizing the pressure. There are two vacuum switches associated with each valve. The switches are installed in parallel so that either switch can operate the valve. Simultaneous failure of both switches due to age-related degradation is highly improbable.

In addition, air operated check valves will provide the isolation function should these valves fail to reclose.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Control rod drive scram dump volume (SV NC-15A, B, C, D, 16A, B)
FRC Equipment Item No.:	13
Manufacturer:	Asco (A&B Valves)/Valcor (C&D Valves)
Model:	HVA904058A/V70400-21-1
Safety Function:	Isolate dump volume drain and vent during reactor scram
Qualification Deficiency:	Aging degradation, qualified life, aging simulation

Justification for Continued Operation:

During a reactor scram, the scram discharge volume isolates by the closure of two air operated vent valves and two air operated drain valves which are in series.

Solenoid operated valves NC 15A and 15B control the operation of only one set of isolation valves (one drain and one vent). The redundant set of isolation valves is controlled by solenoid operated valves NC 15C and 15D. These valves were not included in the original program but are now included. Simultaneous failure of both systems due to aging is highly improbable.

Solenoid operated valves NC 16A and B (backup scram valves) perform a function which is redundant to the two scram valve pilots on each of the 129 control rod drive hydraulic units. Instrument air will be vented from the scram valve pilot air header, during a scram initiation, by either the backup scram valves or the scram valve pilots. Failure of solenoid operated valves NC 16A and B to operate would not adversely affect the scram function. Loss of power causes the valves to go to the correct position. Simultaneous failure of the scram valve pilots and the backup scram valves is highly improbable.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Master trip unit located in the reactor building (dPT01-26A to H, dPT201.2-476A to D, dPT36-06A to D)
FRC Equipment Item No.:	19
Manufacturer:	Rosemount
Model:	510 DU
Safety Function:	Drywell pressure trip unit/emergency condenser high flow trip/main steam line flow trip
Qualification Deficiency:	Aging, qualified life, pressure, spray, radiation

Justification for Continued Operation:

These instruments are located in the reactor building at elevation 281 feet, one in each of the four corners.

Drywell Pressure Trip Unit

For breaks within the drywell, temperature, pressure or humidity does not increase in the reactor building where these trip units are located. Radiation is the only effect that these units would experience after a loss of coolant accident.

Only the drywell pressure trip units are needed to mitigate a loss of coolant accident. These units automatically perform their safety function within seconds. Once they have initiated their safety function, no failure could negate it. They fail safe on trip unit failure or loss of power.

Emergency Condenser High Flow Trip

The effects of the emergency condenser flow trip units for dPT-36-06A, B, C and D are needed to mitigate an emergency condenser steam line break outside of containment. These trip units are not in close proximity to the break locations and automatically perform their safety function within the first few seconds of the event.

Main Steam Line Flow Trip

Main steam line flow trip unit's dPT's 01-26A to H are not exposed to the harsh environment of a steamline break, since they are not located near the breaks. These instruments automatically perform their safety function by isolating the steam line at the start of the event and once performed, instrument failure cannot open these valves. Subsequent instrument/trip unit failure has no effect on the operator's response.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Trip units located in the reactor building (LT 36-03A, B, C, D; LT 36-04A, B, C, D; LT 36-05A, B, C, D; PT 36-07A, B, C, D; PT 36-08A, B, C, D)
FRC Equipment Item No.:	20
Manufacturer:	Rosemount
Model:	510 DU
Safety Function:	Detects high, low, low-low and low-low-low vessel level and high and low reactor pressure
Qualification Deficiency:	Aging, qualified life, pressure, spray, radiation

Justification for Continued Operation:

These trip units are located in the reactor building, one in each of the four analog trip system cabinets. These cabinets are located in the four corners of the building, one per corner.

They are all de-energnized to actuate and provide inputs to the reactor protection system. Their safety functions are automatically performed early in the event sequence as a result of process conditions or as the result of a trip unit failure. Failure of these level and pressure transmitter trip units can only affect long term monitoring and will not affect accident mitigation.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Radiation detector located in reactor building Elevation 261 feet (201.7 - 36A, 37A)
FRC Equipment Item No.:	86
Manufacturer:	General Atomic
Model:	RD23
Safety Function:	High range radiation monitor
Qualification Deficiency:	Similarity, aging, radiation

Justification for Continued Operation:

These radiation detectors were recently installed as required by NUREG 0737 item II.F.1.3. The system does not provide either actuation or indication that a safety system is performing its intended function.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Electrical cable located inside the drywell
FRC Equipment Item No.:	65
Manufacturer:	General Electric
Model:	Vulkene
Safety Function:	Power and Control 600V and 1000V
Qualification Deficiency:	Qualification documentation lacks similarity analysis

Justification for Continued Operation:

Vulkene insulated cable without a jacket and with Neoprene and Irradiated Crosslinked Polymer jackets have operated properly under conditions exceeding the environment at Nine Mile Point Unit 1 and have been tested within the industry. Unjacketed Vulkene cable and Vulkene insulated cable with a PVC jacket are utilized at Nine Mile Point Unit 1. The addition of a PVC jacket would further improve the environmental resistance of the overall system.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Flow switch, FET-664
FRC Equipment Item No.:	84
Manufacturer:	Foxboro
Model:	E1 3DL
Safety Function:	Post accident sampling
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

This flow switch was recently installed as required by NUREG 0737 item II.B.3, post accident sampling system. The system does not provide information to indicate whether any plant safety functions are being accomplished.

Failure of this flow switch would not prevent any safety-related equipment from performing their intended safety function. Failure would not affect the plant's accident mitigation capability or its capability to prevent the release of radioactive material to the environment.

Therefore, justification for the continued safe operation of the plant is demonstrated.

NINE MILE POINT UNIT 1
COMPONENT REVIEW SUMMARY SHEET

Equipment:	Power cable
FRC Equipment Item No.:	71
Manufacturer:	Kerite
Model:	5kV Quadruplex Cable
Safety Function:	Power distribution to engineered safeguard equipment
Qualification Deficiency:	Documented evidence of qualification

Justification for Continued Operation:

The Kerite power cable is used as distribution circuits to motors and transformers. The power conductor insulation is Kerite with a neoprene jacket. The ground conductor insulation is polyvinyl cnloride (PVC). The three individually insulated and jacketed power conductors and the insulated ground conductor are cabled together in quadruplex form with no further covering. The cable is installed primarily in conduit. Safety-related use of the cable is limited to areas outside the primary containment. Power cable with Kerite insulation have been utilized extensively over the years in various Niagara Mohawk Power Corporation steam generating facilities with no known age related failures. Temperatures would be consistent with those existing within the reeactor building. Temperature and pressure conditions resulting from a high energy line break at cable terminations which are enclosed in junction boxes to emergency core cooling motors are only slightly above normal operating values. Wyle Qualification Test Report 47176-1 demonstrates qualification pending review.

Based on the above, continued operation is justified until the cable is qualified or replaced with qualified cable.