



ARKANSAS POWER & LIGHT COMPANY

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June 20, 1983

2CAN068310

Director of Nuclear Reactor Regulation
ATTN: Mr. Robert A. Clark, Chief
Operating Reactors Branch #3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Arkansas Nuclear One - Unit 2
Docket No. 50-368
License No. NPF-6
Environmental Qualification - Response
to ANO-2 Safety Evaluation Report

Gentlemen:

By your letter dated April 15, 1983 (2CNA048302), you submitted the ANO-2 Environmental Qualification Safety Evaluation Report (SER) and associated Technical Evaluation Report (TER) prepared by Franklin Research Center (FRC). AP&L responded to your requests for 10-day responses on "Category II.B" items by our April 29, 1983 letter (2CAN048311), and additional information was submitted by our letter dated May 26, 1983 (2CAN058308). The SER also addressed certain submittal requirements pertaining to the recent rule on environmental qualification, 10CFR50.49. Our response concerning those items was submitted by our letter dated May 20, 1983 (0CAN058311). The following is AP&L's response to the remaining requirements of the SER.

We have addressed all items listed by Franklin as category I.B., II.A, and IV, and have provided a justification for continued operation (JCO) for each item for which a JCO was not previously submitted. In addition, all previously supplied JCO's were reviewed against the Franklin TER, and those which required changes due to Franklin's comments have been revised and are included in this submittal.

You will notice that many of the JCO's are actually reconfirmation of AP&L's position that the particular device is qualified as indicated by prior submittals. In each case we have examined the TER open items, and in

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some cases concluded the FRC concerns are not applicable for the reasons stated in the JCO. In many other cases, we have acknowledged the deficiencies and provided appropriate justifications.

As indicated in our response to the Unit 1 SER, AP&L was recently informed by our subcontractor that a radiation source term was inadvertently omitted from their radiation models, and therefore not considered in the detailed environmental qualification evaluations previously performed. For Unit 2, the buildup of iodines in the penetration room ventilation system filters had been omitted. We have assessed the impact on the devices located in this area and modified the JCO's accordingly. The impact for Unit 2 was very minor; however, we are in the process of re-evaluating the dose models and methodologies. Indications are that the previous overall plant dose assessments were probably overly conservative except for the omission described.

The SER dated April 15, 1983, identified several areas requiring attention. The SER items and our responses are provided below:

1. Item: "Submission of information within thirty days for items in Category I.B, II.A. and IV..."

Response: The JCO's are attached.

2. Item: "Same as above but ten days for Category II.B."

Response: The ten day response was submitted by our letter dated April 29, 1983 (2CAN048311) and supplemented by our letter of May 26, 1983 (2CAN058308).

3. Item: "Resolution of deficiencies associated with equipment items... that have been assigned to Category II.B."

Response: Same as item 2 above.

4. Item: "Resolution of the concerns identified in Sections 4.3.1 and 4.3.2 of the FRC TER regarding completeness of the safety-related equipment list and flooding of equipment."

Response: Section 4.3.1 of the Franklin TER contends that AP&L did not provide a satisfactory response to the NRC concern (from the May 22, 1981 NRC SER), but does not provide any specific detail. In our response, we indicated that qualification of equipment such as display instrumentation would best be addressed through resolution of activities concerning emergency operating procedures, human factors engineering, control room design review, and post accident monitoring. Since these activities are now integrated under generic letter 82-33, the final results of that effort will determine the appropriate action regarding the need for additional equipment qualification.

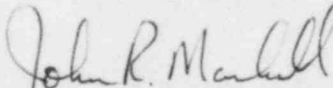
June 20, 1983

Section 4.3.2 of the FRC TER again states that the licensee did not provide a response to the NRC concern in Section 3.2 of the May 22, 1981 SER. No response was provided because no response is required by Section 3.2.

5. Item: "Resolution of the concerns identified in Section 4.3.5 of the FRC TER regarding submergence."

Response: FRC identified no specific concerns other than stating that the Licensee had not provided an adequate response to the NRC concern (from the May 22, 1981 SER). The NRC concern was actually two concerns. The first involved the capabilities of two level sensors to withstand the effects of submergence. These items which are now identified by worksheets C011 and C012, are GEMS devices which are undergoing type testing. Final results are expected soon. The second concern was in reference to flooding outside containment. As indicated in prior correspondence, flooding of the ANO-2 auxiliary building has undergone a thorough analysis as documented in the ANO-2 FSAR (see Sections 3.6.4.3 thru 3.6.4.5 and Section 9.5.1). In absence of any specific concern identified by Franklin, AP&L maintains our previous position that the issue of flooding outside containment has been adequately addressed.

Very truly yours,


John R. Marshall
Manager, Licensing

JRM:CHT:sc

ARKANSAS NUCLEAR ONE

UNIT 2

JUSTIFICATIONS FOR CONTINUED
OPERATION FOR ENVIRONMENTAL
QUALIFICATION DEFICIENCIES

JUNE 20, 1983

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EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-0716-1, 2CV-0789-1

SER RESPONSE PAGE NO(S).: B008, B012

FRC EQUIPMENT ITEM: 5

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000, SMB-00

SYSTEM - P&ID NO.: Emergency Feedwater System M-2204 Sheet 4

LOCATION: Room 2025

• SAFETY FUNCTION:

Valve 2CV-0789-1 is normally open, providing the normal EFW suction path for EFW pump 2P7B from the startup and blowdown demineralizer effluent or condensate storage tank.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider these devices fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1000-1

SER RESPONSE PAGE NO(S).: B025

FRC EQUIPMENT ITEM: 11

MANUFACTURER AND MODEL NO.: Limitorque SMB-00-10

SYSTEM - P&ID NO.: Steam Generator Secondary System M-2206

LOCATION: Room 2155

• SAFETY FUNCTION:

The EFW system provides a means of supplying water to the intact steam generator(s) following a postulated main steam break or loss of main feedwater, for the purpose of decay heat removal and cooldown to conditions where the shutdown cooling system can be placed in operation.

This valve is one of two series valves (the other is a check valve) supplying steam to the turbine driven EFW pump from steam generator 2E24A. The valve is normally open, and remains open following EFW initiation.

• QUALIFICATION DISCREPANCY:

The motor operator was qualified to a temperature environment of 250°F maximum. Conservative T/H HELB analysis indicates a maximum harsh temperature condition of 292°F. The analysis also indicates that this temperature would be sustained for 7 minutes or less, and would return to ambient within one hour.

Also, similarity between the tested and installed device was not demonstrated, and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

1. FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058.

2. This valve is not required to operate during EFW operation; it is aligned in the safe position prior to and during operation of the EFW system.

3. The motor-driven EFW pump is available to serve the decay heat removal and cooldown functions. Its qualification status is discussed in the Sept. 12, 1981 submittal.
4. While the actuator is only shown qualified to 250°F, the qualification test allows the entire actuator to reach thermal equilibrium at 250°F for a prolonged period. It is judged that equilibrium at temperatures significantly higher than 250°F would not be reached during the comparatively brief exposure time during a HELB.

Notwithstanding the above argument, AP&L is modifying this valve by the addition of a thermal protection shield. Upon completion of this modification, the valve will be fully qualified.

Based on the above analysis, justification for continued operation has been demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1023-2, 2CV-1073-2

SER RESPONSE PAGE NO(S).: B032, B041

FRC EQUIPMENT ITEM: 8

MANUFACTURER AND MODEL NO.: Limitorque Model SB-4

SYSTEM - P&ID NO.: Steam Generator Secondary System - M-2206

LOCATION: Room 2081

• SAFETY FUNCTION:

The safety function of valve 2CV-1023-2 is to isolate main feedwater flow to steam generator 2E24A. Similarly, valve 2CV-1073-2 isolates steam generator 2E24B.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider these devices fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S): 2CV-1024-1, 2CV-1074-1

SER RESPONSE PAGE NO(S): B033, B042

FRC EQUIPMENT ITEM: 9

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-5

SYSTEM - P&ID NO.: Steam Generator Secondary System - M-2206

LOCATION: Room 2081

• SAFETY FUNCTION:

These valves are the main feedwater isolation valves to steam generators 2E24A and 2E24B and are normally open. They close upon receipt of a Main Steam Isolation Signal and thus isolate the condensate and feedwater system from the steam generators.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider these devices fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1026-2

SER RESPONSE PAGE NO(S).: B016

FRC EQUIPMENT ITEM: 14

MANUFACTURER AND MODEL NO.: Limitorque SMB-00-

SYSTEM - P&ID NO.: Emergency Feedwater System - M-2204

LOCATION: Room 2084

• SAFETY FUNCTION:

The EFW system provides a means of supplying water to the intact steam generator(s) following a postulated main steam break or loss of main feedwater, for the purpose of decay heat removal and cooldown to conditions where the shutdown cooling system can be placed in operation.

This valve is opened automatically to supply water from the appropriate EFW pump to the intact steam generator(s). The signal logic will not open the valve if the steam generator is not intact (the valve then remains closed).

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated, and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0009).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1050-2

SER RESPONSE PAGE NO(S).: B034

FRC EQUIPMENT ITEM: 10

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Steam Generator Secondary System M-2206

LOCATION: Room 2155

• SAFETY FUNCTION:

This valve is one of two series valves (the other is a check valve) supplying steam to the turbine driven EFW pump from steam generator 2E24B. The valve is normally open and remains open following EFW initiation.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated; aging was not adequately evaluated, and temperature requirements were not met.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

This device is required to function following a line break downstream of the valve to isolate the break. The valve would be immediately closed by operator action. While the activator is shown qualified to 250°F compared to a peak valve of 292°F, the test allowed the actuator to reach thermal equilibrium at 250° for a prolonged period. It is judged that equilibrium at temperatures higher than 250°F would not be reached during the brief time necessary to close the valve or even during the brief duration of the HELB exposure profile. Notwithstanding this argument, AP&L is adding thermal protection to the motor to ensure adequate temperature protection.

Considering the aging analysis documented by Limitorque report B0058, this valve will be considered qualified following completion of the modification.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1076-2

SER RESPONSE PAGE NO(S).: B022

FRC EQUIPMENT ITEM: 7

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-00

SYSTEM - P&ID NO.: Emergency Feedwater System - M-2204, Sheet 4

LOCATION: Room 2048

• SAFETY FUNCTION:

The EFW system provides a means of supplying water to the intact steam generator(s) following a postulated main steam break or loss of main feedwater. Valve 2CV-1076-2 is a discharge isolation valve in the EFW system.

This valve is opened automatically to supply water from EFW pump 2P7A to steam generator 2E24B. The signal logic will not open the valve if the steam generator is not intact (the valve then remains closed).

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0009).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1400-1

SER RESPONSE PAGE NO(S).: B043

FRC EQUIPMENT ITEM: 35

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200/MB10

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2011

• SAFETY FUNCTION:

This valve is normally closed but is opened in the event of a Loss of Coolant Accident. Its opening allows service water to the following components of the emergency core cooling system: auxiliary building HPSI pump room unit coolers, containment spray pump coolers, L.P. safety injection pump coolers, H.P. safety injection pump coolers, and shutdown cooling heat exchanger.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identified the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1401-2, 2CV-1402-1, 2CV-1405-2, 2CV-1409-2

SER RESPONSE PAGE NO(S).: B044, B045, B049, B053

FRC EQUIPMENT ITEM: 24

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M2210, Sheet 2

LOCATION: Room 2009

• SAFETY FUNCTION:

These valves are service water inlet valves to auxiliary building shutdown heat exchanger room unit coolers 2VUC1E, 2VUC1A, 2VUC1D, and 2VUC1F.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider these devices fully qualified.

In any case, this valve has been determined not to perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1403-1

SER RESPONSE PAGE NO(S).: B046

FRC EQUIPMENT ITEM: 25

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2014

• SAFETY FUNCTION:

This valve is the service water inlet valve to auxiliary building shutdown heat exchanger room unit cooler 2VUC1B.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1404-1

SER RESPONSE PAGE NO(S).: B048

FRC EQUIPMENT ITEM: 24

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2013

• SAFETY FUNCTION:

This valve is the service water inlet valve to auxiliary building shutdown heat exchanger room unit cooler 2VUC1C.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1406-2

SER RESPONSE PAGE NO(S).: B050

FRC EQUIPMENT ITEM: 37

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200/MB10

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2040

• SAFETY FUNCTION:

This valve is normally closed but is opened in the event of a loss of coolant accident. Its opening allows service water to the following components of the emergency core cooling system: auxiliary building HPSI pump room unit coolers, containment spray pump coolers, L.P. safety injection pump coolers, H.P. safety injection pump coolers, and shutdown cooling heat exchanger.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1407-1, 2CV-1408-2

SER RESPONSE PAGE NO(S).: B051, B052

FRC EQUIPMENT ITEM: 24

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2010

• SAFETY FUNCTION:

These valves are service water inlet valves to auxiliary building HPSI pump room unit coolers 2VUC11A and 2VUC11B.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider these devices fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1445-1

SER RESPONSE PAGE NO(S).: B056

FRC EQUIPMENT ITEM: 25

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2014

• SAFETY FUNCTION:

This valve is the service water inlet valve to the low pressure safety injection pump cooler 2E52A.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1446-2

SER RESPONSE PAGE NO(S).: B057

FRC EQUIPMENT ITEM: 24

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2007

• SAFETY FUNCTION:

This valve is the service water inlet valve to the low pressure safety injection pump cooler 2E52B.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between test and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1447-1

SER RESPONSE PAGE NO(S).: B058

FRC EQUIPMENT ITEM: 25

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2014

• SAFETY FUNCTION:

This valve is the service water inlet valve to containment spray pump cooler 2E47A.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1448-2

SER RESPONSE PAGE NO(S).: B059

FRC EQUIPMENT ITEM: 24

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2007

• SAFETY FUNCTION:

This valve is the service water inlet valve to containment spray pump cooler 2E47B.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S): 2CV-1450-1

SER RESPONSE PAGE NO(S): B060

FRC EQUIPMENT ITEM: 25

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2014

• SAFETY FUNCTION:

This valve is the service water inlet valve to high pressure injection cooler 2E53A.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1451-5

SER RESPONSE PAGE NO(S).: B061

FRC EQUIPMENT ITEM: 24

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2010

• SAFETY FUNCTION:

This valve is the service water inlet valve to high pressure safety injection pump cooler 2E53C.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1452-2

SER RESPONSE PAGE NO(S).: B062

FRC EQUIPMENT ITEM: 24

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2009

• SAFETY FUNCTION:

This valve is the service water inlet valve to high pressure safety injection pump cooler 2E53B.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

In any case, this valve has been determined to not perform an active safety function. It is normally locked open and required to be open during accident conditions; therefore, it is not required to function and can be removed from the EQ list.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1453-1

SER RESPONSE PAGE NO(S).: B063

FRC EQUIPMENT ITEM: 36

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200 MB10

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2013

• SAFETY FUNCTION:

This valve is the service water inlet valve to shutdown cooling heat exchanger 2E35A. It is normally closed, but the Recirculation Actuation Signal causes it to open automatically and thus allow service water flow through 2E35A.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1456-2

SER RESPONSE PAGE NO(S).: B064

FRC EQUIPMENT ITEM: 36

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200 MB10

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2009

• SAFETY FUNCTION:

This valve is the service water inlet valve to shutdown cooling heat exchanger 2E35B. It is normally closed, but the Recirculation Actuation Signal causes it to open automatically and thus allow service water flow through 2E35B.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1480-2, 2CV-1481-2

SER RESPONSE PAGE NO(S).: B065, B066

FRC EQUIPMENT ITEM: 42

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200/MB10

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 2

LOCATION: Room 2018

• SAFETY FUNCTION:

These valves are the service water system discharge isolation valve to Dardanelle Reservoir. They are normally open but close automatically upon a safety injection actuation signal or a main steam isolation signal. When closed, the service water flows to the cooling tower basin or emergency pond rather than the Dardanelle Reservoir.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1500-1, 2CV-1501-5, 2CV-1502-2

SER RESPONSE PAGE NO(S).: B071, B072, B073

FRC EQUIPMENT ITEM: 21

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 3

LOCATION: Rooms 2053, 2052, 2051 (Respectively)

• SAFETY FUNCTION:

These valves are service water inlet valves to auxiliary building charging pump room coolers 2VUC7A, 2VUC7C, and 2VUC7B. Normally one of these valves is open and its associated cooler is in operation. The other two valves are normally closed.

In the event of a design basis accident, the two closed valves are opened with the associated fan start so that all three charging pump room coolers are in operation.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to these tested devices (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1503-1

SER RESPONSE PAGE NO(S).: B074

FRC EQUIPMENT ITEM: 41

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200/MB10

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 1

LOCATION: Room 2058

• SAFETY FUNCTION:

The service water system provides water for engineered safety features equipment. This valve allows service water to flow from emergency diesel jacket coolant water heat exchanger 2E20A to a cooling reservoir.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1504-2

SER RESPONSE PAGE NO(S).: B075

FRC EQUIPMENT ITEM: 40

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200/MB10

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 1

LOCATION: Room 2062B

• SAFETY FUNCTION:

The service water system provides water for engineered safety features equipment. This valve allows service water to flow from emergency diesel jacket coolant water heat exchanger 2E20B to a cooling reservoir.

• QUALIFICATION DISCREPANCY:

According to FRC, qualification of this device is deficient in the following areas: Similarity to test specimen not established and aging not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S): 2CV-1510-2, 2CV-1513-2

SER RESPONSE PAGE NO(S): B080, B082

FRC EQUIPMENT ITEM: 44

MANUFACTURER AND MODEL NO.: Electordyne Model TN200/MB10

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 3

LOCATION: Room 2081

• SAFETY FUNCTION:

Valve 2CV-1510-2 is the service water inlet isolation valve for containment service cooling coils 2VCC2C and 2VCC2D and valve 2CV-1513-2 is the service water isolation valve from 2VCC2C and 2VCC2D. The inlet valve is normally open and the outlet valve is normally closed. A containment cooling actuation signal or a main steam isolation signal automatically opens these valves to allow service water flow to the cooling coils.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1511-1, 2CV-1519-1

SER RESPONSE PAGE NO(S).: B081, B084

FRC EQUIPMENT ITEM: 39

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200/MB10

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 3

LOCATION: Room 2084

• SAFETY FUNCTION:

Valve 2CV-1511-1 is the service water inlet isolation valve for containment service water cooling coils 2VCC2A and 2VCC2B and valve 2CV-1519-1 is the service water isolation valve from cooling coils 2VCC2A and 2VCC2B. The inlet valve is normally open and the outlet valve is normally closed. A containment cooling actuation signal or a main steam isolation signal automatically opens these valves to allow service water flow to the cooling coils.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION

ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1529-2, 2CV-1532-1

SER RESPONSE PAGE NO(S).: B086, B089

FRC EQUIPMENT ITEM: 19

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 3

LOCATION: Room 2024

• SAFETY FUNCTION:

These valves are service water inlet valves to the auxiliary building emergency feedwater pump room unit coolers 2VUC6A and 2VUC6B. They are normally closed but open automatically with the associated fan start to allow service water flow to the emergency feedwater pump room coolers.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to these tested devices (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1530-1, 2CV-1531-2

SER RESPONSE PAGE NO(S).: B087, B088

FRC EQUIPMENT ITEM: 38

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200 (MB10/MB20)

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 3

LOCATION: Room 2040

• SAFETY FUNCTION:

These valves are the service water isolation valves supplying the component cooling water heat exchangers 2E28A, 2E28B, and 2E28C. 2CV-1530-1 is normally open and 2CV-1531-2 is normally closed. Both are called upon to close upon receiving a safety injection actuation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1541-1, 2CV-1560-2

SER RESPONSE PAGE NO(S).: B090, B093

FRC EQUIPMENT ITEM: 43

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200 (MB10/MB20)

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 3

LOCATION: Room 2048

• SAFETY FUNCTION:

These valves are service water discharge valves to the emergency cooling pond. Valve 2CV-1560-2 is normally open and valve 2CV-1541-1 is normally closed. They are both automatically opened upon a main steam isolation signal or a safety injection actuation signal to allow service water flow to the emergency pond rather than the Dardanelle Reservoir.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-1542-2, 2CV-1543-1

SER RESPONSE PAGE NO(S).: B091, B092

FRC EQUIPMENT ITEM: 43

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200 (MB10/MB20)

SYSTEM - P&ID NO.: Service Water System - M-2210, Sheet 3

LOCATION: Room 2048

• SAFETY FUNCTION:

These valves are discharge isolation valves from the component cooling water heat exchangers. They both are normally open which allows service water flow to the Dardanelle Reservoir. With a safety injection actuation signal or a main steam isolation signal they close to divert service water flow to either the cooling tower basin or the emergency pond.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendors list of operators.

AP&L has performed an Aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-2401-1

SER RESPONSE PAGE NO(S).: A019

FRC EQUIPMENT ITEM: 1

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Gaseous Radioactive Waste System - M-2215

LOCATION: Reactor Building

• SAFETY FUNCTION:

This valve is a containment vent header isolation valve. It is normally open to allow gaseous radioactive waste flow from the Regenerative Heat Exchanger Vent, the Quench Tank Vent, and the Reactor Drain Tank Vent to the Waste Gas Surge Tank 2T17. Upon a Containment Isolation Signal or a Safety Injection System signal it closes and the gaseous radioactive waste flows to the Containment Sump.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-3850-2

SER RESPONSE PAGE NO(S).: A020

FRC EQUIPMENT ITEM: 1

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-00

SYSTEM - P&ID NO.: Chilled Water System - M-2222 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

This valve is a chilled water isolation valve. It is normally open but automatically closes upon a Containment Isolation Signal. When closed it isolates flow from inside containment.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-4690-2

SER RESPONSE PAGE NO(S).: B121

FRC EQUIPMENT ITEM: 16

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Room 2081

• SAFETY FUNCTION:

This valve isolates the demineralized water supply to containment. It is normally closed and remains closed upon a Containment Isolation Signal or a Safety Injection System signal thus isolating flow of reactor makeup water into containment.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-4820-2

SER RESPONSE PAGE NO(S).: A049

FRC EQUIPMENT ITEM: 1

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Chemical and Volume Control System - M-2231 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

This valve is a reactor coolant letdown stop valve. It is normally open to allow flow to the regenerative heat exchanger. Upon initiation of a safety injection actuation signal, it automatically closes thus isolating letdown which feeds into the volume control tank.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-4821-1

SER RESPONSE PAGE NO(S).: A050

FRC EQUIPMENT ITEM: 1

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Chemical and Volume Control System - M-2231 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

This valve is a reactor coolant letdown isolation valve. It is normally open to allow flow to the regenerative heat exchanger. Upon initiation of a safety injection actuation signal it automatically closes thus isolating letdown which feeds into the volume control tank.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-4824-2, 2CV-4827-2, 2CV-4831-2

SER RESPONSE PAGE NO(S).: A051, A052, A053

FRC EQUIPMENT ITEM: 15

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Chemical and Volume Control System - M-2231 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

These valves are charging pump isolation valves. Valves 2CV-4827-2 and 2CV-4831-2 are normally open allowing the charging pumps to return purification flow to the reactor coolant system. Valve 2CV-4824-2 is normally closed but may be opened to allow the operator control over the pressurizer level. These valves are closed when it is necessary to isolate the charging pumps.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider these devices fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-4840-2

SER RESPONSE PAGE NO(S).: B124

FRC EQUIPMENT ITEM: 13

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Chemical and Volume Control System - M-2231 Sheet 1

LOCATION: Room 2084

• SAFETY FUNCTION:

This valve is a charging pump control valve. It is normally open, allowing the charging pumps to return the purification flow to the reactor coolant system.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-4846-1

SER RESPONSE PAGE NO(S).: A054

FRC EQUIPMENT ITEM: 1

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Chemical and Volume Control System - M-2231 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

This valve is a reactor coolant pump seal line isolation valve. It is normally open allowing flow to the volume control tank. Upon initiation of a containment isolation signal or a safety injection signal it automatically closes thus isolating the reactor coolant pump seal line.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5015-1, 2CV-5016-2, 2CV-5035-1, 2CV-5036-2

SER RESPONSE PAGE NO(S).: B126, V127, B130, B131

FRC EQUIPMENT ITEM: 20

MANUFACTURER AND MODEL NO.: Limitorque Model; Sizes 0, 00, 000

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2084

• SAFETY FUNCTION:

These valves are safety injection system high pressure header isolation valves. They are normally closed but open automatically upon a safety injection actuation signal. They are utilized as required to obtain balanced flow between headers.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S): 2CV-5017-1, 2CV-5037-1, 2CV-5057-2, 2CV-5077-2

SER RESPONSE PAGE NO(S): B128, B132, B137, B141

FRC EQUIPMENT ITEM: 2

MANUFACTURER AND MODEL NO.: Limitorque Model SMB; Sizes 00, 1

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2084

• SAFETY FUNCTION:

These valves are safety injection system low pressure header isolation valves. They are normally closed but open automatically upon a safety injection acuation signal. They are utilized as required to obtain balanced flow between headers.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5055-1, 2CV-5056-2, 2CV-5075-1, 2CV-5076-1

SER RESPONSE PAGE NO(S).: B135, B136, B139, B140

FRC EQUIPMENT ITEM: 20

MANUFACTURER AND MODEL NO.: Limitorque Model SMB; Sizes 0, 00, 000

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2084

• SAFETY FUNCTION:

These valves are safety injection system high pressure header isolation valves. They are normally closed but open automatically upon a safety injection actuation signal. They are utilized as required to obtain balanced flow between headers.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5084-1, 2CV-5086-2

SER RESPONSE PAGE NO(S).: A071, A072

FRC EQUIPMENT ITEM: 26

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-3

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Reactor Building

• SAFETY FUNCTION:

These valves are the safety injection system reactor coolant shutoff valves. They are normally locked closed and remain closed during accident conditions.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary document from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5103-1, 2CV-5104-2

SER RESPONSE PAGE NO(S).: B144, B145

FRC EQUIPMENT ITEM: 22

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2055

• SAFETY FUNCTION:

These valves are High Pressure Safety Injection (HPSI) header valves. They are normally open allowing flow from the HPSI pumps to the reactor coolant loops.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5123-1

SER RESPONSE PAGE NO(S).: B146

FRC EQUIPMENT ITEM: 4

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2014

• SAFETY FUNCTION:

This valve is a low pressure safety injection pump recirculation valve. It is locked open to provide the pump with minimum flow protection to prevent damage which could result from operation against a closed discharge.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5124-1

SER RESPONSE PAGE NO(S).: B147

FRC EQUIPMENT ITEM: 3

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2007

• SAFETY FUNCTION:

This valve is a low pressure safety injection pump recirculation valve. It is locked open to provide the pump with minimum flow protection to prevent damage which could result from operation against a closed discharge.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0004).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5126-1

SER RESPONSE PAGE NO(S).: B148

FRC EQUIPMENT ITEM: 25

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2104

• SAFETY FUNCTION:

This valve is a high pressure safety injection pump recirculation valve. It is locked open to provide the pump with minimum flow protection to prevent damage which could result from operation against a closed discharge.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5127-1, 2CV-5128-1

SER RESPONSE PAGE NO(S).: B149, B150

FRC EQUIPMENT ITEM: 24

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2009

• SAFETY FUNCTION:

These valves are high pressure safety injection pump recirculation valves. They are locked open to provide the pumps with minimum flow protection to prevent damage which could result from operation against a closed discharge.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider these devices fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5236-1

SER RESPONSE PAGE NO(S).: B156

FRC EQUIPMENT ITEM: 44

MANUFACTURER AND MODEL NO.: Electrodyne Model TN200/MB10

SYSTEM - P&ID NO.: Component Cooling Water System - M-2234 Sheet 1

LOCATION: Room 2081

• SAFETY FUNCTION:

This valve is normally open to allow component cooling water (CCW) flow from the CCW pumps to the reactor coolant pump coolers and CCW heat exchangers. It is closed upon a containment isolation signal to isolate the reactor coolant pump coolers.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendor list of operators.

AP&L has performed an aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justifications for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Acuator

TAG NO(S).: 2CV-5254-2

SER RESPONSE PAGE NO(S).: A073

FRC EQUIPMENT ITEM: 1

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Component Cooling Water System - M-2234 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

This valve isolates the component cooling water from the reactor coolant pump coolers upon a containment isolation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report 600456).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Electric Motor Valve Operator

TAG NO(S).: 2CV-5255-1

SER RESPONSE PAGE NO(S).: B157

FRC EQUIPMENT ITEM: NA

MANUFACTURER AND MODEL NO.: Electrodyne Model TN20/MB10

SYSTEM - P&ID NO.: Component Cooling Water System - M-2234 Sheet 1

LOCATION: Room 2081

• SAFETY FUNCTION:

This valve is normally open to allow component cooling water (CCW) flow from the reactor coolant pump coolers to the CCW heat exchangers. It isolates the reactor coolant pump coolers upon a containment isolation signal.

• QUALIFICATION DISCREPANCY:

This item was not previously evaluated by Franklin Research Center.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a letter from the vendor which identifies the referenced test report (F-C2883) as specifically applicable to certain valve operators (identified by operator serial number) supplied for ANO-2. We have confirmed that this operator is covered by correlating the tag number to a serial number on the vendor list of operators.

AP&L has performed an aging (materials) analysis which establishes a 40 year qualified life for the valve in conjunction with normal periodic maintenance.

We believe this valve is fully qualified. Based on the above, justifications for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5612-1, 2CV-5613-2

SER RESPONSE PAGE NO(S).: B162, B163

FRC EQUIPMENT ITEM: 20

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-0

SYSTEM - P&ID NO.: Containment Spray System - M-2236

LOCATION: Room 2084

• SAFETY FUNCTION:

These valves are containment spray system isolation valves downstream of the shutdown cooling heat exchangers. They are normally closed but open upon a containment spray actuation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5628-2

SER RESPONSE PAGE NO(S).: B164

FRC EQUIPMENT ITEM: 23

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Containment Spray System - M-2236

LOCATION: Room 2054

• SAFETY FUNCTION:

This valve is a containment spray system injection pumps recirculation isolation valve.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5672-1

SER RESPONSE PAGE NO(S).: B171

FRC EQUIPMENT ITEM: 24

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Containment Spray System - M-2236

LOCATION: Room 2009

• SAFETY FUNCTION:

This valve is a recirculation isolation valve for containment spray pump 2P35B. The containment spray pumps are provided with minimum flow recirculation lines which permit flow from each pump to recirculate back to the refueling water tank through a common line during the injection mode of operation. This valve automatically closes upon a recirculation actuation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however, we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S).: 2CV-5673-1

SER RESPONSE PAGE NO(S).: B172

FRC EQUIPMENT ITEM: 25

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Containment Spray System - M-2236

LOCATION: Room 2014

• SAFETY FUNCTION:

This valve is a recirculation isolation valve for containment spray pump 2P35A. The containment spray pumps are provided with minimum flow recirculation lines which permit flow from each pump to recirculate back to the refueling water tank through a common line during the injection mode of operation.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Motorized Valve Actuator

TAG NO(S):: 2CV-5852-2, 2CV-5859-2

SER RESPONSE PAGE NO(S):: B174, B175

FRC EQUIPMENT ITEM: 20

MANUFACTURER AND MODEL NO.: Limitorque Model SMB-000

SYSTEM - P&ID NO.: Sampling System - M-2237 Sheet 1

LOCATION: Room 2084

- SAFETY FUNCTION:

These valves are steam generator sample cooler containment isolation valves. They are normally open allowing flow to the steam generator sample coolers but close upon a containment isolation signal.

- QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

- JUSTIFICATION FOR CONTINUED OPERATION:

FRC could not have affirmed or denied similarity between installed and tested device without the necessary documentation from Limitorque which ties the installed device (identified by serial number and Limitorque order number) to the appropriate Limitorque qualification test report. This data was not previously provided to FRC; however; we have rechecked the documentation and confirmed the similarity of the installed device to the tested device (Limitorque test report B0003).

Since similarity has been established, all aging requirements are considered satisfied by Limitorque report B0058; therefore, we consider the device fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Flow Transmitter

TAG NO(S).: 2FT-0710-1, 2FT-0718-2

SER RESPONSE PAGE NO(S).: B005, B010

FRC EQUIPMENT ITEM: 92

MANUFACTURER AND MODEL NO.: Foxboro Model E13DM1SAH2

SYSTEM - P&ID NO.: Emergency Feedwater System - M-2204 Sheet 4

LOCATION: Room 2040

• SAFETY FUNCTION:

These transmitters are used to monitor emergency feedwater flowrate. They are for general operator information and perform no trip functions.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity was not demonstrated, aging was not evaluated, accuracy was not properly addressed, and test failures were not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has established similarity between the E13 series transmitter and the E11 series transmitter tested, and determined that the differences do not affect the validity of the environmental testing performed.

Aging will be addressed by appropriate maintenance and surveillance programs in keeping with NRC guidance provided in generic letter 82-09.

The tested device showed a maximum output shift of +.25% and -.94% during the transient and a maximum post-accident inaccuracy of +8.00% and -8.73%. The monitoring function of this device requires general trending type information as output; therefore, accuracies less than $\pm 20\%$ are judged acceptable. Test anomalies were explained in full detail in the test report and shown to have no connection to the environmental considerations.

AP&L maintains this device is fully qualified; therefore, based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Flow Transmitter

TAG NO(S).: 2FT-0713-2, 2FT-0717-1

SER RESPONSE PAGE NO(S).: B007, B009

FRC EQUIPMENT ITEM: 91

MANUFACTURER AND MODEL NO.: Foxboro Model E13DM-1SAH2

SYSTEM - P&ID NO.: Emergency Feedwater System - M-2204 Sheet 4

LOCATION: Room 2048

• SAFETY FUNCTION:

These transmitters are used to monitor emergency feedwater flowrate. They are for general operator information and perform no trip functions.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity was not demonstrated, aging was not evaluated, accuracy was not properly addressed, and test failures were not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has established similarity between the E13 series transmitter and the E11 series transmitter tested, and determined that the differences do not affect the validity of the environmental testing performed.

Aging will be addressed by appropriate maintenance and surveillance programs in keeping with NRC guidance provided in generic letter 82-09.

The tested device showed a maximum output shift of +.25% and -.94% during the transient and a maximum post-accident inaccuracy of +8.00% and -8.73%. The monitoring function of this device requires general trending type information as output; therefore, accuracies less than $\pm 20\%$ are judged acceptable. Test anomalies were explained in full detail in the test report and shown to have no connection to the environmental considerations.

AP&L maintains this device is fully qualified; therefore, based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Flow Transmitter

TAG NO(S).: 2FT-5014-1, 2FT-5034-1, 2FT-5054-2, 2FT-5074-2

SER RESPONSE PAGE NO(S).: B125, B129, B134, B138

FRC EQUIPMENT ITEM: 94

MANUFACTURER AND MODEL NO.: Fisher and Porter Model 10B2496PBBC

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2084

• SAFETY FUNCTION:

These transmitters monitor High Pressure Safety Injection (HPSI) flow in each of the four injection loops. The flow indication is used by operators to balance injection flow between loops and aids in detecting breaks in the injection loops.

• QUALIFICATION DISCREPANCY:

According to FRC, qualification is deficient in the following areas: similariy, radiation, aging, accuracy, test failures, and functional testing.

• JUSTIFICATION FOR CONTINUED OPERATION:

These transmitters perform their primary safety functions in response to LOCA mitigation. HPSI flow indication is also available via transmitters 2FT-5101-1 and 2FT-5102-2. In the case of a LOCA, these devices are not exposed to harsh environmental conditions except for radiation. Exposure to the total radiation dose of 5.8×10^4 rads (which is due to recirculation of LOCA fluids) would not begin until 30 minutes following the accident. The total dose would not exceed the harsh environmental threshold of 5×10^4 rads for several days.

Similar transmitters have been exposed to radiation doses as high as 10^8 rads without failure. Nonetheless, AP&L is replacing these transmitters with qualified substitutes.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Flow Transmitter

TAG NO(S).: 2FT-5101-1, 2FT-5102-2

SER RESPONSE PAGE NO(S).: B142, B143

FRC EQUIPMENT ITEM: 96

MANUFACTURER AND MODEL NO.: Foxboro Model E11DM

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Room 2103

• SAFETY FUNCTION:

These transmitters measure total High Pressure Safety Injection flow rate in the two main headers.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity was not established, aging was not evaluated, accuracy was not addressed, and test failures were not adequately addressed.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has established similarity between the E11DM series transmitter and the E11AH transmitter tested, and determined that the differences do not affect the validity of the environmental testing performed.

Aging will be addressed by appropriate maintenance and surveillance programs in keeping with NRC guidance in generic letter 82-09.

The tested device showed a maximum post-accident inaccuracy (output shift) of +8.00% and -8.73%. These devices provide general monitoring information to the operator. In addition, operator action is required to vary safety injection location (hot leg or cold leg) at a given flow rate. The flow rates in the procedures include significant margin such that the inaccuracies above would in no way jeopardize proper system operations or safety functions.

Test anomalies were explained in full detail in the test report and shown to have no connection to the environmental considerations.

AP&L maintains this device is fully qualified; therefore, based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Flow Transmitter

TAG NO(S).: 2FT-8827-1, 2FT-8828-2

SER RESPONSE PAGE NO(S).: B186, B187

FRC EQUIPMENT ITEM: 95

MANUFACTURER AND MODEL NO.: Foxboro Model E13DL Style B

SYSTEM - P&ID NO.: HVAC Control Room and Penetration Rooms - M-2264

LOCATION: Room 2040

• SAFETY FUNCTION:

These transmitters are used to monitor penetration room HVAC system air flow.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity was not established, aging was not adequately addressed, accuracy was not evaluated, and test failures or anomalies were not properly addressed.

• JUSTIFICATION FOR CONTINUED OPERATION:

These transmitters are only required to function during and after a LOCA which, except for radiation, does not create a harsh environment in room 2040. The radiation environment is due to recirculation of LOCA fluids.

Foxboro tested several E13 series transmitters for radiation resistance as documented by test report T3-1068. The transmitters with standard amplifiers remained functional at a dose of 8.6×10^7 rads; therefore, radiation qualification is considered satisfied by this test report. The devices exhibited a maximum accuracy change of less than 5%. Since these devices' function is to determine flow or lack of flow rather than specific flow measurements, these shifts in instrument accuracy will not jeopardize plant safety.

The test anomaly mentioned by Franklin was from another test report concerning E11 series transmitters. In any case, the anomaly was fully explained in the test report as not being related to the environmental testing conditions.

Aging for Foxboro transmitters will be addressed through maintenance and surveillance programs (see guidance in generic letter 82-09); therefore, these devices are considered qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Flow Transmitter

TAG NO(S).: 2FT-8833-1, 2FT-8834-2

SER RESPONSE PAGE NO(S).: B192, B193

FRC EQUIPMENT ITEM: 93

MANUFACTURER AND MODEL NO.: Foxboro Model E13DL Style B

SYSTEM - P&ID NO.: HVAC Control Room and Penetration Rooms - M-2264

LOCATION: Room 2049

• SAFETY FUNCTION:

These transmitters are used to monitor penetration room HVAC system air flow.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity was not established, aging was not adequately addressed, accuracy was not evaluated, and test failures or anomalies were not properly addressed.

• JUSTIFICATION FOR CONTINUED OPERATION:

These transmitters are only required to function during and after a LOCA which, except for radiation, does not create a harsh environment in Room 2049. The radiation environment is due to recirculation of LOCA fluids and the dose from iodine buildup in the penetration room filters. This dose was recently recalculated resulting in a total dose of 3.0×10^6 rads for 2FT-8833-1 and 3.6×10^6 rads for 2FT-8834-2.

Foxboro tested several E13 series transmitters for radiation resistance by test report T3-1068. The transmitters with standard amplifiers remained functional at a dose of 8.6×10^7 rads; therefore, radiation qualification is considered satisfied by this test report.

The devices exhibited a maximum accuracy change of less than 5%. Since these devices' function is to determine flow or lack of flow rather than specific flow measurements, these shifts in instrument accuracy will not jeopardize plant safety.

The test anomaly mentioned by Franklin was from another test report concerning E11 series transmitters. In any case, the anomaly was fully explained in the test report as not being related to the environmental testing conditions.

Aging for Foxboro transmitters will be addressed through maintenance and surveillance programs (see guidance in generic letter 82-09); therefore, these devices are considered qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Hardline Coaxial Cable

TAG NO(S).: 2GEN-1004

SER RESPONSE PAGE NO(S).: C001

FRC EQUIPMENT ITEM: NA

MANUFACTURER AND MODEL NO.: ENDEVCO Type 3075M6

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Reactor Building

• SAFETY FUNCTION:

This signal cable is part of the system which monitors pressurizer relief valve position. The system is used to determine relief valve position for the purpose of determining possible loss of coolant or steam relief pathways.

• QUALIFICATION DISCREPANCY:

This item was not previously evaluated by Franklin Research Center.

• JUSTIFICATION FOR CONTINUED OPERATION:

This component is part of the acoustic monitoring system for pressurizer relief valve position, installed as a post-TMI retrofit in response to NUREG 0737. It performs no protective action. When purchased, it was believed to be among the best available for nuclear service.

If this monitor failed to function during a LOCA caused by pressurizer steam-side relief, additional methods might be utilized for determining the source of the event.

1. Pressurizer level increase without primary pressure and temperature increase.
2. Safety relief valve tailpipe temperature increase.
3. Quench tank level, pressure, and temperature increase.

Should none of these indications be available, the emergency core cooling system will nevertheless protect the core without requiring identification of the leak pathway or valve position.

This cable is presently under test to demonstrate environmental qualification.

Based on the above, justification for continued operation has been demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Cable Coupler

TAG NO(S).: 2GEN-1005

SER RESPONSE PAGE NO(S).: C002

FRC EQUIPMENT ITEM: NA

MANUFACTURER AND MODEL NO.: ENDEVCO Type EJ34

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Reactor Building

• SAFETY FUNCTION:

This cable coupler is an electrical connection in the pressurizer relief valve position monitoring system. The system is used to determine relief valve position for the purpose of determining possible loss of coolant or steam relief pathways.

• QUALIFICATION DISCREPANCY:

This item was not previously evaluated by Franklin Research Center.

• JUSTIFICATION FOR CONTINUED OPERATION:

This component is part of the acoustic monitoring system for pressurizer relief valve position, installed as a post-TMI retrofit in response to NUREG 0737. It performs no protective action. When purchased, it was believed to be among the best available for nuclear service.

If this monitor failed to function during a LOCA caused by pressurizer steam-side relief, additional methods might be utilized for determining the source of the event.

1. Pressurizer level increase without primary pressure and temperature increase.
2. Safety relief valve tailpipe temperature increase.
3. Quench tank level, pressure, and temperature increase.

Should none of these indications be available, the emergency core cooling system will nevertheless protect the core without requiring identification of the leak pathway or valve position.

This cable is presently under test to demonstrate environmental qualification.

Based on the above, justification for continued operation has been demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

CCOMPONENT: Electrical Cable

TAG NO(S).: 2GEN-1006

SER RESPONSE PAGE NO(S).: A115

FRC EQUIPMENT ITEM: 125

MANUFACTURER AND MODEL NO.: Raychem "Flamtrol" Special and Instrument

SYSTEM - P&ID NO.: Generic

LOCATION: Reactor Building

- SAFETY FUNCTION:

This electrical cable provides electrical transmission for instrumentation.

- QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated.

- JUSTIFICATION FOR CONTINUED OPERATION:

Franklin test report F-C4033-1 documents qualification testing of a broad spectrum of Raychem Corporation's product line of nuclear service cables. Specifically nineteen separate sample types of Raychem "Flamtrol" insulated and jacketed cable were tested. The special and instrument cable types used at ANO are of the same type as those tested. Raychem submitted test reports EM-517A and EM-518A as applicable to the ANO-2 cables. These reports documented additional testing on cables types 10483 and 60B0211. These same types were included in the testing performed under F-C4033-1.

AP&L QC file documentation supports the assertion that Raychem Flamtrol cabling was specified and procured for ANO-2; consequently, the cabling is considered qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Electrical Cable Splice

TAG NO(S).: 2GEN-1007

SER RESPONSE PAGE NO(S).: A116

FRC EQUIPMENT ITEM: 126

MANUFACTURER AND MODEL NO.: Raychem Type WCSF/ANK

SYSTEM - P&ID NO.: Generic

LOCATION: Reactor Building

• SAFETY FUNCTION:

These electrical cable splices provide electrical transmission for instrumentation.

• QUALIFICATION DISCREPANCY:

According to FRC, aging (qualified life) was not adequately evaluated and criteria regarding submergence was not satisfied.

• JUSTIFICATION FOR CONTINUED OPERATION:

The splices in use at ANO-2 are Raychem splices and are covered by the test reports referenced. The splices are made from WCSF-N compound. The ANK designation simply refers to splice kits manufactured for ANO (Arkansas Nuclear Kits).

Regarding submergence, the worksheet previously submitted indicates "NA" under "specification" while the qualification column states "in water after LOCA." This has apparently led to confusion. Following the LOCA exposure during the test (steam, radiation, chemical spray), the specimens were submerged and high potential withstand tests were conducted. The cable and cable splice sample withstood testing and were deemed fully acceptable.

Raychem has addressed aging for WCSF compound by test report EDR 2001 which shows the compound is suitable for 40 years of service at 196°F. Therefore, this item is considered fully qualified.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Level Sensor

TAG NO(S).: 2LE-5645-1, 2LE-5646-2

SER RESPONSE PAGE NO(S).: C011, C012

FRC EQUIPMENT ITEM: 139

MANUFACTURER AND MODEL NO.: GEMS Model XM54852/53

SYSTEM - P&ID NO.: Containment Spray System - M-2236

LOCATION: Reactor Building

- SAFETY FUNCTION:

These level sensors indicate the flood level in containment.

- QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

- JUSTIFICATION FOR CONTINUED OPERATION:

Test documentation has been obtained which qualifies these devices for a 300°F/59 psig/100% relative humidity/boric acid environment for 4 hours. In addition, another test report qualifies these instruments for a 150°F/boric acid environment for 14 days and 2×10^8 rads. Testing currently underway is expected to demonstrate qualification for the specified time period of 30 days.

These items were added as part of the TMI Action Plan requirements of NUREG 0737 and perform a monitoring function only.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Pressure Transmitter

TAG NO(S).: 2PT-1417-1

SER RESPONSE PAGE NO(S).: B054

FRC EQUIPMENT ITEM: 100

MANUFACTURER AND MODEL NO.: Foxboro Model E11GM1SAB2

SYSTEM - P&ID NO.: Service Water System - M-2210 Sheet 1

LOCATION: Room 2018

• SAFETY FUNCTION:

This transmitter is used to monitor service water header pressure. The pressure is indicated in the control room with high and low pressure alarms. This indication is secondary to flow indication for operator information.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity was not established, aging was not adequately evaluated, accuracy was not properly addressed, and test failures or anomalies were not adequately addressed.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has established similarity between the E11GM series transmitter and the E11AH transmitter tested, and determined that the differences do not affect the validity of the environmental testing performed.

Aging will be addressed by appropriate maintenance and surveillance programs in keeping with NRC guidance provided in generic letter 82-09.

The tested device showed a maximum post-accident inaccuracy (output shift) due to environmental testing of +8.00% and -8.73%. The indication and alarm functions of this device is for general trending only; therefore, accuracy deviations as great as $\pm 20\%$ are judged acceptable.

Test anomalies were explained in full detail in the test report and shown to have no connection to the environmental considerations.

AP&L maintains this device is fully qualified; therefore, based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Pressure Transmitter

TAG NO(S): 2PT-1423-2

SER RESPONSE PAGE NO(S): B055

FRC EQUIPMENT ITEM: 100

MANUFACTURER AND MODEL NO.: Foxboro Model E11GM1SAB2

SYSTEM - P&ID NO.: Service Water System - M-2210 Sheet 1

LOCATION: Room 2018

• SAFETY FUNCTION:

This transmitter is used to monitor service water header pressure. The pressure is indicated in the control room with high and low pressure alarms. For operator information, this indication is considered secondary to flow indication.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity was not established, aging was not adequately evaluated, accuracy was not properly addressed, and test failures or anomalies were not adequately addressed.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has established similarity between the E11GM series and the E11AH transmitter tested, and determined that the differences do not affect the validity of the environmental testing performed.

Aging will be addressed by appropriate maintenance and surveillance programs in keeping with NRC guidance provided in generic letter 82-09.

The tested device showed a maximum post-accident inaccuracy (output shift) due to environmental testing of +8.00% and -8.73%. The indication and alarm functions of this device is for general trending only; therefore, accuracy deviations as great as $\pm 20\%$ are judged acceptable.

Test anomalies were explained in full detail in the test report and shown to have no connection to the environmental considerations.

AP&L maintains this device is fully qualified; therefore, based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Pressure Transmitter

TAG NO(S).: 2PT-1506-2, 2PT-1509-1

SER RESPONSE PAGE NO(S).: B077, B079

FRC EQUIPMENT ITEM: 103

MANUFACTURER AND MODEL NO.: Rosemount Model 1151BP8E22

SYSTEM - P&ID NO.: Service Water System - M-2110 Sheet 1

LOCATION: Room 2139

• SAFETY FUNCTION:

The service water system provides water for the Control Room Emergency Condensing Units 2VE-1A and 2VE-1B (Engineered Safety Features). These pressure transmitters act as a control input to the service water inlet valves, 2CV-1506-2 and 2CV-1509-1, to the condensing units.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

These transmitters are not exposed to harsh conditions resulting from an HELB or LOCA except for the brief temperature spike of 212°F due to an HELB. The transmitters are rated for service at 220°F; furthermore, considering the brief time at elevated temperatures (less than 1 hour), these devices are not expected to reach significant internal temperatures. Based on engineering judgement, these devices are expected to perform satisfactorily.

Notwithstanding this argument, AP&L is replacing the transmitters with fully qualified substitutes.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Pressure Transmitter

TAG NO(S).: 2PT-4601-1, 2PT-4601-2, 2PT-4601-3, 2PT-4601-4

SER RESPONSE PAGE NO(S).: A021, A022, A023, A024

FRC EQUIPMENT ITEM: 99

MANUFACTURER AND MODEL NO.: Foxboro Model E11GM

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Reactor Building

• SAFETY FUNCTION:

These transmitters are used to trip the reactor on high pressurizer pressure.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity was not established for these devices, aging was not evaluated, accuracy was not properly evaluated, and test failures were not adequately addressed.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has established similarity between tested model and installed models. The E11GM is different from the tested E11AH in areas unaffected by environmental considerations.

Aging will be addressed by appropriate maintenance and surveillance programs in keeping with NRC guidance provided in generic letter 82-09.

The tested device showed an inaccuracy of +.25% and -.94% compared to the acceptance criteria of +3.16% and -(no limit). Therefore, this device meets the accuracy requirements. This information was previously not provided to the NRC due to an oversight.

Test failures in the AP&L report were explained in full detail in the report and showed the failure to have no connection to the environmental considerations.

AP&L believes the device is qualified; therefore, based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Radiation Detector

TAG NO(S).: 2RE-8925-1, 2RE-8925-2

SER RESPONSE PAGE NO(S).: C013, C014

FRC EQUIPMENT ITEM: 141, 142

MANUFACTURER AND MODEL NO.: General Atomic Model RD23

SYSTEM - P&ID NO.: Area Radiation Monitor - N/A

LOCATION: Reactor Building

• SAFETY FUNCTION:

These detectors are containment post-LOCA high range area radiation monitors.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

The test program described in prior submittals has been completed. The test report, General Atomics document #254960, qualified General Atomic model RD-23 high range radiation monitors to levels that envelope the ANO-2 environmental conditions.

The units installed at ANO-2 are model RD-23; therefore, these devices are considered fully qualified.

These items were required as a result of the TMI action plan, NUREG 0737, and perform a monitoring function only.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-0317-2

SER RESPONSE PAGE NO(S).: B001

FRC EQUIPMENT ITEM: 56

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-010

SYSTEM - P&ID NO.: Main Steam System - M-2202 Sheet 2

LOCATION: Room 2024

• SAFETY FUNCTION:

This valve must de-energize to open to allow seal water to the EFW pump turbine.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

This valve is normally energized and closed, and upon an engineered safeguards actuation signal, the valve will de-energize to open. The valve will perform its safety function within 1 minute and is not required to re-close.

Since the valve closes automatically (i.e., fails-safe), the brief exposure to HELB conditions is judged to not prevent the valve from functioning.

Should the valve fail, the motor-driven EFW pump could be utilized to deliver emergency feedwater flow.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-4847-2

SER RESPONSE PAGE NO(S).: B124-A

FRC EQUIPMENT ITEM: N/A

MANUFACTURER AND MODEL NO.: ASCO Model HT8321A6

SYSTEM - P&ID NO.: Chemical and Volume Control System - M-2231

LOCATION: Room 2084

• SAFETY FUNCTION:

This valve is a reactor coolant pump bleedoff isolation valve. It is normally open allowing flow to the volume control tank. Upon initiation of containment isolation signal or a safety injection signal, it automatically closes thus isolating the reactor coolant pump bleedoff line.

• QUALIFICATION DISCREPANCY:

This item was not previously evaluated by Franklin Research Center.

• JUSTIFICATION FOR CONTINUED OPERATION:

The qualification discrepancies (except for radiation) occur during a HELB outside containment. Since this valve has no safety related operation during a HELB, failure during this event does not jeopardize plant safety.

This valve operates immediately (less than one minute); therefore, the dose due to recirculation of LOCA fluid is not applicable. The valve de-energizes to close and once closed, no failure has been identified which can cause the valve to open.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-5833-1

SER RESPONSE PAGE NO(S).: A083

FRC EQUIPMENT ITEM: 63

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-003

SYSTEM - P&ID NO.: Sampling System - M-2237 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

This valve is a reactor coolant sample cooler containment isolation valve. It is normally closed and remains closed upon a containment isolation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, this valve is qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANO-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-5843-2

SER RESPONSE PAGE NO(S).: B173

FRC EQUIPMENT ITEM: 60

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-0082

SYSTEM - P&ID NO.: Sampling System - M-2237 Sheet 1

LOCATION: Room 2084

• SAFETY FUNCTION:

This valve is a reactor coolant sample cooler containment isolation valve. It is normally closed and remains closed upon a containment isolation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, this valve is qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANO-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-5871-2, 2SV-5876-2

SER RESPONSE PAGE NO(S).: B177, B178

FRC EQUIPMENT ITEM: 59

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-001

SYSTEM - P&ID NO.: Sampling System - M-2237 Sheet 1

LOCATION: Room 2084

• SAFETY FUNCTION:

These valves are containment isolation valves. Valve 2SV-5871-2 isolates the quench tank sample pump and valve 2SV-5876-2 isolates the safety injection tanks sample points 9A, 9B, 9C and 9D. They are normally closed and remain closed upon a containment isolation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, these valves are qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANO-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-5878-1

SER RESPONSE PAGE NO(S).: A084

FRC EQUIPMENT ITEM: 64

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-015

SYSTEM - P&ID NO.: Sampling System - M-2237 Sheet 1

LOCATION: Reactor Building

- SAFETY FUNCTION:

This valve is a quench tank sample pump isolation valve. It is normally closed and remains closed upon a containment isolation signal.

- QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

- JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, this valve is qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANO-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-8231-2

SER RESPONSE PAGE NO(S).: B179

FRC EQUIPMENT ITEM: 61

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-023

SYSTEM - P&ID NO.: HVAC Reactor Building - M-2261 Sheet 1

LOCATION: Room 2084

• SAFETY FUNCTION:

This valve is a hydrogen purge air system isolation valve. It is normally open but closes automatically upon a containment isolation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, this valve is qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANO-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-8261-2

SER RESPONSE PAGE NO(S).: B180

FRC EQUIPMENT ITEM: 57

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-022

SYSTEM - P&ID NO.: HVAC Reactor Building - M-2261 Sheet 1

LOCATION: Room 2081

• SAFETY FUNCTION:

This valve is a hydrogen gas sampler isolation valve. It is normally closed and remains closed upon a containment isolation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, this valve is qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANO-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANC-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-8263-2

SER RESPONSE PAGE NO(S).: B181

FRC EQUIPMENT ITEM: 58

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-111

SYSTEM - P&ID NO.: HVAC Reactor Building - M-2261 Sheet 1

LOCATION: Room 2081

• SAFETY FUNCTION:

This valve is a hydrogen gas sampler isolation valve. It is normally closed and remains closed upon a containment isolation signal.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, this valve is qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANC-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-8265-1

SER RESPONSE PAGE NO(S).: A097

FRC EQUIPMENT ITEM: 65

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-072

SYSTEM - P&ID NO.: HVAC Reactor Building - M-2261 Sheet 1

LOCATION: Reactor Building

- SAFETY FUNCTION:

This valve is a hydrogen gas sampler isolation valve. It is normally closed and remains closed upon a containment isolation signal.

- QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

- JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, this valve is qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANO-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-8271-2

SER RESPONSE PAGE NO(S).: B182

FRC EQUIPMENT ITEM: 62

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-012

SYSTEM - P&ID NO.: HVAC Reactor Building - M-2261 Sheet 1

LOCATION: Room 2084

• SAFETY FUNCTION:

This valve is a hydrogen gas sampler isolation valve. It is normally open to allow monitoring of hydrogen gas in containment. Upon a containment isolation signal, it is automatically closed.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, this valve is qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANO-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-8273-1

SER RESPONSE PAGE NO(S).: A106

FRC EQUIPMENT ITEM: 66

MANUFACTURER AND MODEL NO.: Target Rock Model 74F-011

SYSTEM - P&ID NO.: HVAC Reactor Building - M-2261 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

This valve is a hydrogen gas sampler isolation valve. It is normally open to allow monitoring of hydrogen gas in containment. Upon a containment isolation signal, it is automatically closed.

• QUALIFICATION DISCREPANCY:

According to FRC, similarity between tested and installed component was not demonstrated and aging was not adequately evaluated.

• JUSTIFICATION FOR CONTINUED OPERATION:

According to Target Rock, this valve is qualified by similarity to the valve covered by the test report. The model 74F series refers to an AP&L order and does not infer a different solenoid valve from the 72Y series tested. Since these valves were purchased as qualified from Target Rock, the test report supplied is applicable to the ANO-2 valves.

The test report concludes the solenoid valves are qualified for a 40-year life; therefore, aging requirements are considered satisfied by the test.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Solenoid Valve

TAG NO(S).: 2SV-8863-1, 2SV-8866-2

SER RESPONSE PAGE NO(S).: B194, B196

FRC EQUIPMENT ITEM: 54

MANUFACTURER AND MODEL NO.: ASCO Model NP831654E

SYSTEM - P&ID NO.: HVAC Control Room and Penetration Rooms - M-2264

LOCATION: Room 2146

- SAFETY FUNCTION:

The safety function for these solenoid valves is to isolate the penetration rooms from their normal ventilation system.

- QUALIFICATION DISCREPANCY:

According to Franklin, documented evidence of qualification is inadequate.

- JUSTIFICATION FOR CONTINUED OPERATION:

The qualification discrepancies except for radiation occur during a HELB outside the Reactor Building. Since these valves have no safety related operation during a HELB, failure during this event does not jeopardize plant safety.

The required operating time for these devices is only one minute; therefore, the dose due to recirculation of LOCA fluids is not applicable. The valves de-energize to close and once closed, no failure has been identified which can cause the valves to open. The applicable radiation dose is 1.5E4 rads which is non-harsh; therefore, these devices are in a mild environment.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Temperature Sensor

TAG NO(S).: 2TE-4610-1, 2TE-4610-2, 2TE-4610-3, 2TE-4610-4

SER RESPONSE PAGE NO(S).: A025, A026, A027, A028

FRC EQUIPMENT ITEM: 106

MANUFACTURER AND MODEL NO.: Rosemount Model Type 104-AFC

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Reactor Building

• SAFETY FUNCTION:

The hot leg of the reactor vessel steam generator 2E24A loop contains five narrow range RTD channels to measure coolant temperature leaving the reactor vessel. These four temperature sensors are incorporated in four of these channels to furnish a hot leg temperature signal to the Core Protection Calculators (CPC's).

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a copy of Rosemount test report number 1762 Rev. A which qualified a Rosemount 104-1619 RTD to environmental conditions more severe than the ANO-2 postulated accident conditions. According to Rosemount, the test report is applicable to the 104-AFC models at ANO-2 by similarity.

The 104 model RTD was irradiated to 2×10^8 rads and exposed to 340°F steam, 125 psia, and chemical spray solution.

Notwithstanding this qualification documentation, AP&L is pursuing replacement of these RTD's due to other considerations involving response times. AP&L will replace one of four channels (4 of 16 RTD's) with qualified Weed RTD's during the upcoming refueling outage (2R3). Assuming satisfactory performance of the devices over the next cycle, the remaining RTD's will be replaced during the following refueling outage.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Temperature Sensor

TAG NO(S): 2TE-4611-1, 2TE-4611-2, 2TE-4611-3, 2TE-4611-4

SER RESPONSE PAGE NO(S): A029, A030, A031, A032

FRC EQUIPMENT ITEM: 106

MANUFACTURER AND MODEL NO.: Rosemount Model Type 104-AFC

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Reactor Building

• SAFETY FUNCTION:

There are two cold legs in the reactor vessel steam generator 2E24A loop. Each cold leg contains three temperature measurement channels which are downstream of the reactor coolant pumps. These four temperature sensors are incorporated in two channels from each cold leg and are used to furnish a cold leg coolant temperature signal to the Core Protection Calculators (CPC's). Indication of these four cold leg temperature measurements is provided in the control room.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a copy of Rosemount test report number 1762 Rev. A which qualified a Rosemount 104-1619 RTD to environmental conditions more severe than the ANO-2 postulated accident conditions. According to Rosemount, the test report is applicable to the 104-AFC models at ANO-2 by similarity.

The 104 model RTD was irradiated to 2×10^8 rads and exposed to 340°F steam, 125 psia, and chemical spray solution.

Notwithstanding this qualification documentation, AP&L is pursuing replacement of these RTD's due to other considerations involving response times. AP&L will replace one of four channels (4 of 16 RTD's) with qualified Weed RTD's during the upcoming refueling outage (2R3). Assuming satisfactory performance of the devices over the next cycle, the remaining RTD's will be replaced during the following refueling outage.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Temperature Sensor

TAG NO(S).: 2TE-4710-1, 2TE-4710-2, 2TE-4710-3, 2TE-4710-4

SER RESPONSE PAGE NO(S).: A040, A041, A042, A043

FRC EQUIPMENT ITEM: 106

MANUFACTURER AND MODEL NO.: Rosemount Model Type 104-AFC

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Reactor Building

• SAFETY FUNCTION:

The hot leg of the reactor vessel steam generator 2E24B loop contains five narrow range RTD channels to measure coolant temperature leaving the reactor vessel. These four temperature sensors are incorporated in four of these channels to furnish a hot leg temperature signal to the Core Protection Calculators (CPC's).

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a copy of Rosemount test report number 1762 Rev. A which qualified a Rosemount 104-1619 RTD to environmental conditions more severe than the ANO-2 postulated accident conditions. According to Rosemount, the test report is applicable to the 104-AFC models at ANO-2 by similarity.

The 104 model RTD was irradiated to 2×10^8 rads and exposed to 340°F steam, 125 psia, and chemical spray solution.

Notwithstanding this qualification documentation, AP&L is pursuing replacement of these RTD's due to other considerations involving response times. AP&L will replace one of four channels (4 of 16 RTD's) with qualified Weed RTD's during the upcoming refueling outage (2R3). Assuming satisfactory performance of the devices over the next cycle, the remaining RTD's will be replaced during the following refueling outage.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Temperature Sensor

TAG NO(S).: 2TE-4711-1, 2TE-4711-2, 2TE-4711-3, 2TE-4711-4

SER RESPONSE PAGE NO(S).: A044, A045, A046, A047

FRC EQUIPMENT ITEM: 106

MANUFACTURER AND MODEL NO.: Rosemount Model Type 104-AFC

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Reactor Building

• SAFETY FUNCTION:

There are two cold legs in the reactor vessel steam generator 2E24B loop. Each cold leg contains three temperature measurement channels which are downstream of the reactor coolant pumps. These four temperature sensors are incorporated in two channels from each cold leg and are used to furnish a cold leg temperature signal to the Core Protection Calculators (CPC's).

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has on file a copy of Rosemount test report number 1762 Rev. A which qualified a Rosemount 104-1619 RTD to environmental conditions more severe than the ANO-2 postulated accident conditions. According to Rosemount, the test report is applicable to the 104-AFC models at ANO-2 by similarity.

The 104 model RTD was irradiated to 2×10^8 rads and exposed to 340°F steam, 125 psia, and chemical spray solution.

Notwithstanding this qualification documentation, AP&L is pursuing replacement of these RTD's due to other considerations involving response times. AP&L will replace one of four channels (4 of 16 RTD's) with qualified Weed RTD's during the upcoming refueling outage (2R3). Assuming satisfactory performance of the devices over the next cycle, the remaining RTD's will be replaced during the following refueling outage.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Accelerometer

TAG NO(S).: 2VBE-4633-1, 2VBE-4633-2, 2VBE-4634-1, 2VBE-4634-2

SER RESPONSE PAGE NO(S).: C003, C004, C005, C006

FRC EQUIPMENT ITEM: 138

MANUFACTURER AND MODEL NO.: ENDEVCO Model 2273AM20

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Reactor Building

• SAFETY FUNCTION:

The safety function of these accelerometers is flow detection to determine the position of the pressurizer relief valve for the purpose of determining possible loss of coolant or steam relief pathways.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

This component is part of the acoustic monitoring system for pressurizer relief valve position, installed as a post-TMI retrofit in response to NUREG 0737. It performs no protective action. When purchased, it was believed to be among the best available for nuclear service.

If this monitor failed to function during a LOCA caused by pressurizer steam-side relief, additional methods might be utilized for determining the source of the event.

1. Pressurizer level increase without primary pressure and temperature increase.
2. Safety relief valve tailpipe temperature increase.
3. Quench tank level, pressure, and temperature increase.

Should none of these indications be available, the emergency core cooling system will nevertheless protect the core without requiring identification of the leak pathway or valve position.

This cable is presently under test to demonstrate environmental qualification.

Based on the above, justification for continued operation has been demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Preamplifier

TAG NO(S).: 2VBY-4633-1, 2VBY-4633-2, 2VBY-4634-1, 2VBY-4634-2

SER RESPONSE PAGE NO(S).: C007, C008, C009, C010

FRC EQUIPMENT ITEM: 140

MANUFACTURER AND MODEL NO.: Unholtz-Dickie Model 22CA2TR

SYSTEM - P&ID NO.: Reactor Coolant System - M-2230

LOCATION: Reactor Building

• SAFETY FUNCTION:

These components are accelerometer preamplifiers which are part of the system which monitors pressurizer relief valve position. The system is used to determine relief valve position for the purpose of determining possible loss of coolant or steam relief pathways.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

This component is part of the acoustic monitoring system for pressurizer relief valve position, installed as a post-TMI retrofit in response to NUREG 0737. It performs no protective action. When purchased, it was believed to be among the best available for nuclear service.

If this monitor failed to function during a LOCA caused by pressurizer steam-side relief, additional methods might be utilized for determining the source of the event.

1. Pressurizer level increase without primary pressure and temperature increase.
2. Safety relief valve tailpipe temperature increase.
3. Quench tank level, pressure, and temperature increase.

Should none of these indications be available, the emergency core cooling system will nevertheless protect the core without requiring identification of the leak pathway or valve position.

This cable is presently under test to demonstrate environmental qualification.

Based on the above, justification for continued operation has been demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: HVAC Equipment - Emergency Condensing Units

TAG NO(S).: 2VE-1A, 2VE-1B

SER RESPONSE PAGE NO(S).: B107, B108

FRC EQUIPMENT ITEM: 137

MANUFACTURER AND MODEL NO.: C.V.I. Model WCCU0271504

SYSTEM - P&ID NO.: Service Water System - M-2210 Sheet 1

LOCATION: Room 2139

- SAFETY FUNCTION:

These condensing units are part of the control room emergency air conditioning system and are cooled by water from the service water system.

- QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

- JUSTIFICATION FOR CONTINUED OPERATION:

Based on previous modeling of compartments, Room 2139 was found to be in a harsh environment during a high energy line break (HELB).

AP&L, however, has performed a door modification which keeps this room in a mild environment in the event of a HELB.

Based on this information, these condensing units can be removed from the master list; therefore, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Electric Motor

TAG NO(S).: 2VSFM-1A, 2VSFM-1B, 2VSFM-1C, 2VSFM-1D

SER RESPONSE PAGE NO(S).: A085, A086, A087, A088

FRC EQUIPMENT ITEM: 76

MANUFACTURER AND MODEL NO.: Reliance Electric Model Type EAO

SYSTEM - P&ID NO.: HVAC Reactor Building - M-2261 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

These motors are part of the cooling units for containment. Normally, three of the four are operational but under conditions of a design basis accident all four cooling units operate to provide containment cooling.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

Taken together, the four containment cooling units are 100% redundant to the Containment Spray System (CSS) in performing this safety function. Alternatively, any two of the containment cooling units together with 50% of the CSS can maintain reactor building pressure below the design value following a LOCA.

Documentation is available which verifies all four motors have Type N insulation. Equipment similarity has been established to motors with the following qualification capability:

Temperature	-	300°F for 3-4 hours followed by a gradual reduction to 200°F	type test
Pressure	-	80 psig for 3-4 hours followed by a gradual reduction to 20 psig	type test
Relative Humidity	-	100%	type test
Radiation	-	1x10 ⁹ rads	materials analysis

In addition, the design life of the equipment is 40 years normal operation plus one year LOCA and post-LOCA.

The motors are considered qualified, and justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Electric Motor

TAG NO(S).: 2VSFM-31A, 2VSFM-31B, 2VSFM-31C, 2VSFM-31D

SER RESPONSE PAGE NO(S).: A089, A090, A091, A092

FRC EQUIPMENT ITEM: 76

MANUFACTURER AND MODEL NO.: Reliance Electric Motor Type EAO

SYSTEM - P&ID NO.: HVAC Reactor Building - M-2261 Sheet 1

LOCATION: Reactor Building

• SAFETY FUNCTION:

These motors drive four recirculation fans. The fans recirculate the air within containment to prevent temperature stratification.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

Documentation is available which verifies all four motors have Type N insulation. Equipment similarity has been established to motors with the following qualification capability:

Temperature	-	300°F for 3-4 hours followed by a gradual reduction to 200°F	type test
Pressure	-	80 psig for 3-4 hours followed by a gradual reduction to 20 psig	type test
Relative Humidity	-	100%	type test
Radiation	-	1x10 ⁹ rads	materials analysis

In addition, the design life of the equipment is 40 years normal operation plus one year LOCA and post-LOCA.

The motors are considered qualified, and justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Electric Motor

TAG NO(S).: 2VUCM-1A, 2VUCM-1B, 2VUCM-1C, 2VUCM-1D, 2VUCM-1E, 2VUCM-1F

SER RESPONSE PAGE NO(S).: B094, B095, B096, B097, B098, B099

FRC EQUIPMENT ITEM: 77, 78

MANUFACTURER AND MODEL NO.: Reliance

SYSTEM - P&ID NO.: Service Water System - M-2210 Sheet 2

LOCATION: Room 2014, 2013, 2009

• SAFETY FUNCTION:

These motors drive the auxiliary building shutdown heat exchanger room cooler units. These cooler units maintain acceptable environmental conditions in the auxiliary building shutdown heat exchanger room.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has documentation on file which indicates these motors have a class F insulation system. Motors with class F systems have been qualified by several vendors. Class F systems are rated at 40°C normal temperature with a 105°C temperature rise capability and are generally suitable for radiation exposure up to 2×10^8 rads. Based on engineering judgement these motors are considered capable of functioning in the postulated environment. These motors are required for a LOCA only and are therefore exposed to radiation only as a harsh condition.

AP&L is establishing full qualification by materials analysis. Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Electric Motor

TAG NO(S).: 2VUCM-6A, 2VUCM-6B

SER RESPONSE PAGE NO(S).: B100, B101

FRC EQUIPMENT ITEM: 79

MANUFACTURER AND MODEL NO.: Reliance

SYSTEM - P&ID NO.: Service Water System - M-2210 Sheet 3

LOCATION: Room 2024, 2025

- SAFETY FUNCTION:

These motors drive the auxiliary building emergency feedwater pump room cooler units. These cooler units maintain acceptable temperature and pressure in the auxiliary building emergency feedwater pump rooms.

- QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

- JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has documentation on file which indicates these motors have a class F insulation system. Motors with class F systems have been qualified by several vendors. Class F systems are rated at 40°C normal temperature with a 105°C temperature radiation exposures up to 2×10^8 rads. Based on engineering judgement these motors are considered capable of functioning in the postulated environment.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Electric Motor

TAG NO(S).: 2VUCM-7A, 2VUCM-7B, 2VUCM-7C

SER RESPONSE PAGE NO(S).: B102, B103, B104

FRC EQUIPMENT ITEM: 80, 81, 82

MANUFACTURER AND MODEL NO.: Reliance

SYSTEM - P&ID NO.: Service Water System - M-2210 Sheet 3

LOCATION: Room 2053, 2051, 2052

- SAFETY FUNCTION:

These motors drive the auxiliary building charging pump room cooler units. These cooler units maintain acceptable temperature and pressure in the auxiliary building charging pump room.

- QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

- JUSTIFICATION FOR CONTINUED OPERATION:

Based on a systems engineering analysis, these devices have been determined to not perform an essential safety function and can therefore be removed from the EQ list. Nevertheless, these motors have class F insulation systems which are judged suitable (based on testing of similar motors) of withstand temperatures of 145°C and 2×10^8 rads.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Electric Motor

TAG NO(S).: 2VUCM-11A, 2VUCM-11B

SER RESPONSE PAGE NO(S).: B105, B106

FRC EQUIPMENT ITEM: 83

MANUFACTURER AND MODEL NO.: Reliance

SYSTEM - P&ID NO.: Service Water System - M-2210 Sheet 2

LOCATION: Room 2010

• SAFETY FUNCTION:

These motors drive the auxiliary building high pressure safety injection (HPSI) pump room cooler units. These cooler units maintain acceptable temperature and pressure in the auxiliary building HPSI pump room.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

AP&L has documentation on file which indicates these motors have a class F insulation system motors with class F systems have been qualified by several vendors. Class F systems are rated at 40°C normal temperature with a 105°C temperature rise capability and are generally suitable for radiation exposures up to 2×10^8 rads. Based on engineering judgement these motors are considered capable of functioning in the postulated environment.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Position Switch

TAG NO(S).: 2ZS-1060-2, 2ZS-1010-1

SER RESPONSE PAGE NO(S).: B035, B026

FRC EQUIPMENT ITEM: 113

MANUFACTURER AND MODEL NO.: NAMCO Model EA74020000

SYSTEM - P&ID NO.: Steam Generator Secondary System - M-2206

LOCATION: Room 2155

• SAFETY FUNCTION:

The safety function of these position switches is to indicate the position of the main steam isolation valves, 2CV-1060-2 and 2CV-1010-1. These valves are normally open to allow flow through the main steam turbine headers. Valves 2CV-1090-2 and 2CV-1040-1 are parallel to valves 2CV-1060-2 and 2CV-1010-1 to allow flow if these valves failed closed.

• QUALIFICATION DISCREPANCY:

According to FRC, aging requirements were not adequately evaluated and steam exposure criteria were not satisfied.

• JUSTIFICATION FOR CONTINUED OPERATION:

Should these position switches fail to provide position indication of the MSIV's, or provide erroneous indication, the operator could verify valve position by other means (e.g., monitoring steam generator flow, pressure, and flow path through relief valves or dump valves). Without position indication, operator confidence is high regarding valve closure. The air operated MSIV's fail closed upon loss of power to the solenoid control valves by allowing air flow from accumulators to close the valves. An alternate path for accumulator air flow is provided by a DC-controlled solenoid valve. Should the valves be required to open and position indication is questioned, bypass valves around the MSIV's can be opened from the control room to assure steam flow.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Position Switch

TAG NO(S).: 2ZS-1403-1

SER RESPONSE PAGE NO(S).: B047

FRC EQUIPMENT ITEM: 118

MANUFACTURER AND MODEL NO.: Micro Switch Model DTE62RNZ

SYSTEM - P&ID NO.: Service Water System - M-2210 Sheet 2

LOCATION: Room 2014

- SAFETY FUNCTION:

This position switch indicates the position of valve 2CV-1403-1. This valve is the service water inlet valve to auxiliary building shutdown heat exchanger room unit cooler 2VUC1B.

- QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

- JUSTIFICATION FOR CONTINUED OPERATION:

This limit switch has been determined to be not required to perform a safety function. Valve 2CV-1403-1 is normally locked open and required to be open during accident conditions; therefore, the valve is not required to close and position indication is unnecessary.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Position Switch

TAG NO(S): 2ZS-4847

SER RESPONSE PAGE NO(S): B124-B

FRC EQUIPMENT ITEM: NA

MANUFACTURER AND MODEL NO.: Masoneilan Model 496-2

SYSTEM - P&ID NO.: Chemical and Volume Control System - M-2231

LOCATION: Room 2084

• SAFETY FUNCTION:

This position switch indicates the position of the reactor coolant pump bleedoff isolation valve 2SV-4847-2.

• QUALIFICATION DISCREPANCY:

This item was not previously evaluated by Franklin Research Center.

• JUSTIFICATION FOR CONTINUED OPERATION:

The qualification discrepancies (except for radiation) occur during a HELB outside containment. Since this switch has no safety function during a HELB, failure during this event does not jeopardize plant safety. This switch is required following a LOCA.

The radiation exposure to this device is due to recirculation of LOCA fluids. This recirculation does not begin until thirty minutes after initiation of the LOCA. The switch provides verification of valve closure to the operator within thirty minutes; therefore, it will have performed its safety function while still in a mild environment. Furthermore, it takes several days for the accumulated recirculation dose to reach the dose required for a harsh environment for this switch.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Position Switch

TAG NO(S).: 2ZS-5003A-1, 2ZS-5023A-1, 2ZS-5043B-2

SER RESPONSE PAGE NO(S).: A057, A061, A066

FRC EQUIPMENT ITEM: 120

MANUFACTURER AND MODEL NO.: NAMCO Model EA18034302

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Reactor Building

• SAFETY FUNCTION:

These position switches indicate in the control room the position of the safety injection tank isolation valves. The circuit breakers associated with these valves are locked open during normal operation. This ensures the availability of a flow path from the safety injection tanks. At low reactor coolant system (RCS) pressures, power is removed from the operators and breakers to prevent inadvertent opening and possible overpressurization of the RCS at low temperature.

• QUALIFICATION DISCREPANCY:

According to FRC, aging was not adequately evaluated and temperature and pressure criteria were not satisfied.

• JUSTIFICATION FOR CONTINUED OPERATION:

These position switches will be removed from the qualification list since they serve as a once-per-shift operator observation to verify valve position only. The valves are opened and the control power is removed. The controls are locked. The stem-mounted switches were installed to prevent having to unlock and close the breaker each time a valve position verification was made.

Once valve position verification has been performed during normal operation, further verification of valve position during accident conditions is not necessary.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Position Switch

TAG NO(S).: 2ZS-5003B-1, 2ZS-5023B-1

SER RESPONSE PAGE NO(S).: A058, A062

FRC EQUIPMENT ITEM: 119

MANUFACTURER AND MODEL NO.: NAMCO Model EA18035302

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Reactor Building

• SAFETY FUNCTION:

These position switches indicate in the control room the position of the safety injection tank isolation valves. The circuit breakers associated with these valves are locked open during normal operation. This ensures the availability of a flow path from the safety injection tanks. At low reactor coolant system (RCS) pressures, power is removed from the operators and breakers to prevent inadvertent opening and possible overpressurization of the RCS at low temperature.

• QUALIFICATION DISCREPANCY:

According to FRC, aging was not adequately evaluated and temperature and pressure criteria were not satisfied.

• JUSTIFICATION FOR CONTINUED OPERATION:

These position switches will be removed from the qualification list since they serve as a once-per-shift operator observation to verify valve position only. The valves are opened and the control power is removed. The controls are locked. The stem-mounted switches were installed to prevent having to unlock and close the breaker each time a valve position verification was made.

Once valve position verification has been performed during normal operation, further verification of valve position during accident conditions is not necessary.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Position Switch

TAG NO(S).: 2ZS-5063A-2, 2ZS-5063B-2, 2ZS-5043A-2

SER RESPONSE PAGE NO(S).: A069, A070, A065

FRC EQUIPMENT ITEM: 120

MANUFACTURER AND MODEL NO.: NAMCO Model EA18034302

SYSTEM - P&ID NO.: Safety Injection System - M-2232

LOCATION: Reactor Building

• SAFETY FUNCTION:

These position switches indicate in the control room the position of the safety injection tank isolation valves. The circuit breakers associated with these valves are locked open during normal operation. This ensures the availability of a flow path from the safety injection tanks. At low reactor coolant system (RCS) pressures, power is removed from the operators and breakers to prevent inadvertent opening and possible overpressurization of the RCS at low temperature.

• QUALIFICATION DISCREPANCY:

According to FRC, aging was not adequately evaluated and temperature and pressure criteria were not satisfied.

• JUSTIFICATION FOR CONTINUED OPERATION:

These position switches will be removed from the qualification list since they serve as a once-per-shift operator observation to verify valve position only. The valves are opened and the control power is removed. The controls are locked. The stem-mounted switches were installed to prevent having to unlock and close the breaker each time a valve position verification was made.

Once valve position verification has been performed during normal operation, further verification of valve position during accident conditions is not necessary.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Position Switch

TAG NO(S).: 2ZS-5859A-2

SER RESPONSE PAGE NO(S).: B176

FRC EQUIPMENT ITEM: 117

MANUFACTURER AND MODEL NO.: Contromatics Model 11SP2

SYSTEM - P&ID NO.: Sampling System - M-2237 Sheet 1

LOCATION: Room 2084

• SAFETY FUNCTION:

Valve 2CV-5859-2 is a steam generator containment isolation valve. This position switch indicates to the control room the position of the valve.

• QUALIFICATION DISCREPANCY:

According to FRC, the documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

The qualification discrepancies (except for radiation) occur during a HELB outside the containment. Since this switch has no safety function during a HELB, failure during this event does not jeopardize plant safety. This switch is required following a LOCA.

The radiation exposure to this device is due to recirculation of LOCA fluids. This recirculation does not begin until thirty minutes after initiation of the LOCA. The switch provides verification of valve closure to the operator within thirty minutes; therefore, it will have performed its safety function while still in a mild environment. Furthermore, it takes several days for the accumulated recirculation dose to reach the dose required for a harsh environment for this switch.

Based on the above, justification for continued operation is demonstrated.

EQUIPMENT ENVIRONMENTAL QUALIFICATION
JUSTIFICATION FOR CONTINUED OPERATION
ANO-2

COMPONENT: Position Switch

TAG NO(S).: 2ZS-8863-1, 2ZS-8866-2

SER RESPONSE PAGE NO(S).: B195, B197

FRC EQUIPMENT ITEM: 116

MANUFACTURER AND MODEL NO.: NAMCO Model EA74050100

SYSTEM - P&ID NO.: HVAC Control Room and Penetration Rooms - M-2264

LOCATION: Room 2146

• SAFETY FUNCTION:

The safety function of these limit switches is to permit the reactor operator to verify closure of the associated control valves, after the initiation of a Containment Isolation Signal.

• QUALIFICATION DISCREPANCY:

According to Franklin, documented evidence of qualification is inadequate.

• JUSTIFICATION FOR CONTINUED OPERATION:

The qualification discrepancies (except for radiation) occur during an HELB outside the Reactor Building. Since these switches have no safety function during an HELB, failure during this event does not jeopardize plant safety. These switches are required following a LOCA.

The radiation exposure to these devices is due to recirculation of LOCA fluids; however, since the switches perform their safety function within 30 minutes (operator verification of valve closure) the accumulated dose is less than 1.5×10^4 rads, which is considered non-harsh.

Since the devices perform their safety function in a mild environment, justification for continued operation is demonstrated.