3.11 Environmental Qualification of Mechanical and Electrical Equipment

This section presents information to demonstrate that the mechanical and electrical portions of the engineered safety features, the reactor protection systems, and selected portions of the post-accident monitoring system are capable of performing their designated functions while exposed to applicable normal, abnormal, test, accident, and post-accident environmental conditions. The information presented includes identification of the equipment required to be environmentally qualified and, for each item of equipment, the designated functional requirements, definition of the applicable environmental parameters, and documentation of the qualification process employed to demonstrate the required environmental capability. The seismic qualification of mechanical and electrical equipment is presented in Section 3.10. The portions of post-accident monitoring equipment required to be environmentally qualified are identified in Table 7.5-1.

3.11.1 Equipment Identification and Environmental Conditions

3.11.1.1 Equipment Identification

A complete list of environmentally qualified electrical and mechanical equipment that is essential to emergency reactor shutdown, containment isolation, reactor core cooling, or containment and reactor heat removal, or that is otherwise essential in preventing significant release of radioactive material to the environment, is provided in Table 3.11-1. A list of environmentally qualified electrical and mechanical equipment and a summary of electrical and mechanical equipment qualification results are maintained as part of the equipment qualification file. The equipment qualification file is maintained during the equipment selection and procurement phase as defined in subsection 3.11.5.

3.11.1.2 Definition of Environmental Conditions

Appendix 3D identifies applicable normal, abnormal, and design basis accident environmental conditions conforming to General Design Criterion 4. These environmental conditions are associated with various plant areas by an environmental zone, as noted in Table 3D.5-1 and Table 3.11-1.

For mild environments, the area conditions do not change as the result of an accident. There are no degrading environmental effects that lead to common mode failure of the equipment. The qualification of mechanical and electrical equipment located in a mild environment is demonstrated by conducting the plant surveillance activities carried out during the operational phase of the plant.

The environmental conditions identified in Appendix 3D are defined as follows.

Normal operating environmental conditions are defined as those conditions existing during routine plant operations for which the equipment is expected to be available on a continuous basis to perform required functions.

Abnormal environmental conditions are those plant conditions for which the equipment is designed to operate for a period of time without accelerating normal periodic tests, inspections,

and maintenance schedules for that equipment. The maximum and minimum conditions identified as the abnormal condition are based on the design limits for the affected areas.

Design basis accident (DBA) and post-design basis accident conditions are those plant conditions resulting from various postulated equipment and piping failures during which the equipment identified in Table 3.11-1 must operate without impairment of the function. The design basis accident and post-design basis accident conditions are discussed in Appendix 3D.

Compatibility of equipment with the specified environmental conditions is achieved by the following.

Systems and components required to mitigate the consequences of a design basis accident or to perform safe shutdown operation are qualified to remain functional after exposure to the environmental conditions in Table 3D.5-5.

Environmentally qualified equipment exposed to a harsh environment has a qualified life goal of 60 years. Demonstration of qualified life by test or test and analysis is provided to address applicable aging effects. For critical components susceptible to aging, a qualified life is established that includes the effects of the total integrated radiation dose experienced at their respective locations within the plant. When a 60-year qualified life is not achievable, a shorter qualified life is established, and a replacement program is implemented.

For equipment located in a mild environment, a design life goal is established by using known significant aging mechanisms and reliability data.

Equipment qualification takes into account the most severe environmental conditions resulting from the design basis high-energy line break. Included in these conditions are the short-term peak transient temperature following a main steamline break (MSLB) and a radiation exposure and temperature due to a loss of coolant accident (LOCA) within the reactor containment.

Postulated high-energy line failures as defined in subsection 3.6.2.1.2 are assumed in areas where high-energy lines greater than 1 inch are routed. Essential equipment is protected against the effects of jet impingement (subsection 3.6.2.4.1) and evaluated for spray effects if required (subsection 3.6.2.7).

Active mechanical equipment is qualified for operability as discussed in subsection 3.9.3 and Section 3.10. This operability program, combined with the qualification of the electrical appurtenances (valve operators, solenoids, limit switches), demonstrates qualification under required environmental conditions. Active mechanical equipment is defined as equipment that performs a mechanical motion as part of its safety-related function.

Nonactive mechanical equipment whose only safety function is structural integrity is designed according to ASME Code guidelines. The accident and post-accident environmental effects are considered in the design of such structural components as pump casings and valve bodies.

The environmental qualification program is restricted to evaluating the design of critical nonmetallic subcomponents of active devices in a harsh environment, where failure results in loss of the active component.

In the event of potential flooding/wetting, one of the following criteria is applied for protection of equipment for service in such an environment:

- Equipment will be qualified for submergence due to flooding/wetting.
- Equipment will be protected from wetting due to spray.
- Equipment will be evaluated to show that failure of the equipment due to flooding/wetting is acceptable since its safety-related function is not required or has otherwise been accomplished.

3.11.1.3 Equipment Operability Times

For the AP1000 Class 1E electrical and active mechanical equipment, post-accident operability times are shown in Table 3D.4-2 in Appendix 3D.

Specific information for each device qualified as part of the IEEE 323-1974 qualification program is contained in the appropriate equipment qualification data package.

The active mechanical component is qualified for operability as discussed in Section 3.10, using test, analysis, or a combination of tests and analyses. This operability program, combined with the qualification of the electrical appurtenances (for example, valve operators) discussed in the appropriate equipment qualification data packages, demonstrates qualification.

3.11.1.4 Standard Review Plan Evaluation

A discussion of the Standard Review Plan requirements in regard to environmental qualification of mechanical equipment is provided in subsection 1.9.2.

3.11.2 Qualification Tests and Analysis

3.11.2.1 Environmental Qualification of Electrical Equipment

The AP1000 approach for environmental qualification of Class 1E equipment is outlined in Appendix 3D. This methodology is developed based on the guidelines provided in IEEE 323-1974 (Reference 1).

Qualification for equipment in a harsh environment is based on type testing or testing and analysis. Analysis may be used to determine significant aging mechanisms in mild environment applications. Type testing includes thermal and mechanical aging, radiation, and exposure to extremes of environmental, seismic, and vibration effects. Type testing is done with representative samples of the production line equipment according to the sequence indicated in IEEE 323-1974 to the specified service conditions, including margin. The testing takes into account normal and abnormal plant operation and design basis accident and post-design basis accident operations, as required.

When reliable data and proven analytical methods are available, environmental qualification may be based on analysis supported by partial type test data. This method includes justification of the methods, theories, and assumptions used (that is, mathematical or logical proof based on actual

test data) that the equipment meets or exceeds its specified performance requirements when subjected to normal, abnormal, and design basis accident environmental conditions.

Regulatory guides providing guidance for meeting the requirements of 10CFR50, Appendix A, General Design Criteria 1, 4, 23, and 50; Appendix B, Criteria III, XI, and XVII to 10CFR50 and 10CFR50.49, include Regulatory Guide 1.89, Regulatory Guide 1.30, Regulatory Guide 1.63, Regulatory Guide 1.73, Regulatory Guide 1.100, and Regulatory Guide 1.131. The maintenance surveillance program follows the guidance of Regulatory Guide 1.33.

Additional information regarding conformance with each of these regulatory guides is given in Section 1.9.

3.11.2.2 Environmental Qualification of Mechanical Equipment

AP1000 mechanical components identified in Table 3.11-1 are qualified by design to perform their required functions under the appropriate environmental effects of normal, abnormal, accident, and post-accident conditions as required by General Design Criterion 4 and discussed in Appendix 3D. For mild environments, the area conditions do not change as a result of an accident. There are no degrading environmental effects that lead to common mode failure of equipment in mild environments. Mechanical equipment located in harsh environmental zones is designed to perform under the appropriate environmental conditions.

For mechanical equipment, there are two categories of components:

- Active equipment – equipment that performs a mechanical motion as part of its safety-related function.

  The program for environmental qualification of active mechanical components is based on a combination of design, test, and analysis of critical sub-components, which is supported by maintenance and surveillance programs.

- Nonactive equipment – equipment whose only safety-related function is structural integrity. Nonactive components are designed for structural integrity according to ASME Code, Section III, as discussed in Section 3.9.

3.11.3 Loss of Ventilation

The abnormal environmental conditions shown on Tables 3D.5-3 and 3D.5-4 reflect anticipated maximum conditions based on loss of normal ventilation systems.

Normal containment heat removal is provided by the nonsafety-related containment air recirculation cooling system. If this system is out of service for an extended period of time, the passive containment cooling system may be initiated to maintain the temperature and pressure below the limits noted. Environmentally qualified equipment located in containment performs its functions under these conditions until the normal containment cooling system is restored.

Equipment areas outside containment and outside the main control room are maintained at normal environmental conditions by nonsafety-related HVAC systems. If these systems are disabled, the

heat generated by this equipment is absorbed by the surrounding concrete with an ambient temperature rise that does not exceed the abnormal condition. Normal HVAC is restored within 72 hours or ventilation is provided as discussed in Section 6.4.

If the normal nonsafety-related main control room HVAC is lost, the heat generated by equipment and people is absorbed by the surrounding concrete. Normal heating, ventilation, and air-conditioning is restored within 72 hours or ventilation is provided as discussed in Section 6.4.

3.11.4 Estimated Radiation and Chemical Environment

The plant-specific estimates of the radiation dose incurred by equipment during normal operation is shown in Table 3D.5-2 and the estimated doses following a loss-of-coolant accident are defined in Table 3D.5-5.

The identified equipment is qualified to perform functions in the radiation environments present during normal and design basis accident conditions. The normal operational exposure is based upon design source terms presented in Chapter 11 and subsection 12.2.1. The equipment and shielding configurations are presented in Section 12.3. Post-accident monitoring, reactor trip and engineered safety features system and component radiation exposures are dependent on the location of the equipment in the plant. Source terms and other accident parameters are presented in subsection 12.2.1 and Chapter 15.

The maximum combined integrated radiation dose inside containment is based on the effects of the normally expected radiation environment (gamma) over the equipment's installed life plus that associated with the most severe design basis event (gamma and beta) during or following which the equipment is required to remain functional.

The chemical environment following a loss of coolant accident is primarily based on the chemistry of the reactor coolant system fluid since there is no caustic containment spray. Sump pH adjustments are considered for certain qualification tests. This is discussed further in Appendix 3D.

3.11.5 Combined License Information Item for Equipment Qualification File

Westinghouse Electric Company LLC will act as the agent for the COL holder during the equipment design phase, equipment selection and procurement phase, equipment qualification phase, plant construction phase, and ITAAC inspection phases.

The COL holder will define the process and procedures for which the equipment qualification files will be accepted from Westinghouse and how the files will be retained and maintained in an auditable format for the period that the equipment is installed and/or stored for future use in the nuclear power plant.

3.11.6 References

1. IEEE 323-1974, "IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations."

Table 3.11-1 (Sheet 1 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
BATTERIES					
IDSA 125V 60 Cell Battery 1A	IDSA-DB-1A	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSA 125V 60 Cell Battery 1B	IDSA-DB-1B	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB 125V 60 Cell Battery 1A	IDSB-DB-1A	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB 125V 60 Cell Battery 1B	IDSB-DB-1B	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB 125V 60 Cell Battery 2A	IDSB-DB-2A	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSB 125V 60 Cell Battery 2B	IDSB-DB-2B	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSC 125V 60 Cell Battery 1A	IDSC-DB-1A	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSC 125V 60 Cell Battery 1B	IDSC-DB-1B	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSC 125V 60 Cell Battery 2A	IDSC-DB-2A	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSC 125V 60 Cell Battery 2B	IDSC-DB-2B	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSD 125V 60 Cell Battery 1A	IDSD-DB-1A	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSD 125V 60 Cell Battery 1B	IDSD-DB-1B	2	RT ESF PAMS	5 min 24 hr 24 hr	E

Table 3.11-1 (Sheet 2 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Spare 125V 60 Cell Battery 1A	IDSS-DB-1A	2	RT ESF PAMS	5 min 24 hr 72 hr	E
Spare 125V 60 Cell Battery 1B	IDSS-DB-1B	2	RT ESF PAMS	5 min 24 hr 72 hr	E
BATTERY CHARGERS					
IDSA Battery Charger	IDSA-DC-1	2	ISOL	24 hr	E
IDSB Battery Charger	IDSB-DC-1	2	ISOL	24 hr	E
IDSB Battery Charger 2	IDSB-DC-2	2	ISOL	72 hr	E
IDSC Battery Charger 1	IDSC-DC-1	2	ISOL	24 hr	E
IDSC Battery Charger 2	IDSC-DC-2	2	ISOL	72 hr	E
IDSD Battery Charger	IDSD-DC-1	2	ISOL	24 hr	E
Spare Battery Charger	IDSS-DC-1	2	ISOL	72 hr	E
DISTRIBUTION PANELS					
IDSA 125 Vdc Dist Panel	IDSA-DD-1	2	ESF	24 hr	E
IDSB 125 Vdc Dist Panel	IDSB-DD-1	2	ESF	24 hr	E
IDSC 125 Vdc Dist Panel	IDSC-DD-1	2	ESF	24 hr	E
IDSD 125 Vdc Dist Panel	IDSD-DD-1	2	ESF	24 hr	E
IDSA 120 Vac Dist Panel 1	IDSA-EA-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSA 120 Vac Dist Panel 2	IDSA-EA-2	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB 120 Vac Dist Panel 1	IDSB-EA-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB 120 Vac Dist Panel 2	IDSB-EA-2	2	RT ESF PAMS	5 min 24 hr 2 wks	E
IDSB 120 Vac Dist Panel 3	IDSB-EA-3	2	PAMS	2 wks	E
IDSC 120 Vac Dist Panel 1	IDSC-EA-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E

Table 3.11-1 (Sheet 3 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
IDSC 120 Vac Dist Panel 2	IDSC-EA-2	2	RT ESF PAMS	5 min 24 hr 2 wks	E
IDSC 120 Vac Dist Panel 3	IDSC-EA-3	2	PAMS	2 wks	E
IDSD 120 Vac Dist Panel 1	IDSD-EA-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSD 120 Vac Dist Panel 2	IDSD-EA-2	2	RT ESF PAMS	5 min 24 hr 24 hr	E
FUSE PANELS					
IDSA Fuse Panel	IDSA-EA-4	2	ISOL	24 hr	E
IDSB Fuse Panel	IDSB-EA-4	2	ISOL	24 hr	E
IDSB Fuse Panel	IDSB-EA-5	2	ISOL	2 wks	E
IDSB Fuse Panel	IDSB-EA-6	2	ISOL	2 wks	E
IDSC Fuse Panel	IDSC-EA-4	2	ISOL	24 hr	E
IDSC Fuse Panel	IDSC-EA-5	2	ISOL	2 wks	E
IDSC Fuse Panel	IDSC-EA-6	2	ISOL	2 wks	E
IDSD Fuse Panel	IDSD-EA-4	2	ISOL	24 hr	E
TRANSFER SWITCHES					
IDSA Fused Transfer Switch Box 1	IDSA-DF-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB Fused Transfer Switch Box 1	IDSB-DF-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB Fused Transfer Switch Box 2	IDSB-DF-2	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSC Fused Transfer Switch Box 1	IDSC-DF-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSC Fused Transfer Switch Box 2	IDSC-DF-2	2	RT ESF PAMS	5 min 24 hr 72 hr	E

Table 3.11-1 (Sheet 4 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
IDSD Fused Transfer Switch Box 1	IDSD-DF-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSS Fused Transfer Switch Box 1 (Spare)	IDSS-DF-1	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSS Spare Termination Box	IDSS-DF-2	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSS Spare Termination Box	IDSS–DF-3	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSS Spare Termination Box	IDSS-DF-4	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSS Spare Termination Box	IDSS-DF-5	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSS Spare Termination Box	IDSS-DF-6	2	RT ESF PAMS	5 min 24 hr 24 hr	E
MOTOR CONTROL CENTERS					
IDSA 125 Vdc MCC	IDSA-DK-1	2	ESF	24 hr	E
IDSB 125 Vdc MCC	IDSB-DK-1	2	ESF	24 hr	E
IDSC 125 Vdc MCC	IDSC-DK-1	2	ESF	24 hr	E
IDSD 125 Vdc MCC	IDSD-DK-1	2	ESF	24 hr	E
SWITCHBOARDS					
IDSA 125 Vdc Switchboard 1	IDSA-DS-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB 125 Vdc Switchboard 1	IDSB-DS-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB 125 Vdc Switchboard 2	IDSB-DS-2	2	RT ESF PAMS	5 min 24 hr 72 hr	E

Table 3.11-1 (Sheet 5 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
IDSC 125 Vdc Switchboard 1	IDSC-DS-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSC 125 Vdc Switchboard 2	IDSC-DS-2	2	RT ESF PAMS	5 min 24 hr 72 hr	E
IDSD 125 Vdc Switchboard 1	IDSD-DS-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
TRANSFORMERS					
IDSA Regulating Transformer 1	IDSA-DT-1	2	ISOL	24 hr	E
IDSB Regulating Transformer 1	IDSB-DT-1	2	ISOL PAMS	72 hr 2 wks	E
IDSC Regulating Transformer 1	IDSC-DT-1	2	ISOL PAMS	72 hr 2 wks	E
IDSD Regulating Transformer 1	IDSD-DT-1	2	ISOL	24 hr	E
INVERTERS					
IDSA Inverter	IDSA-DU-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB Inverter 1	IDSB-DU-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSB Inverter 2	IDSB-DU-2	2	RT ESF PAMS	5 min 24 hr 2 wks	E
IDSC Inverter 1	IDSC-DU-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E
IDSC Inverter 2	IDSC-DU-2	2	RT ESF PAMS	5 min 24 hr 2 wks	E
IDSD Inverter	IDSD-DU-1	2	RT ESF PAMS	5 min 24 hr 24 hr	E

Table 3.11-1 (Sheet 6 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
SWITCHGEAR					
RCP 1A 6900V Switchgear 31	ECS-ES-31	2	ESF PAMS	5 min 2 wks	E
RCP 1A 6900V Switchgear 32	ECS-ES-32	2	ESF PAMS	5 min 2 wks	E
RCP 2A 6900V Switchgear 51	ECS-ES-51	2	ESF PAMS	5 min 2 wks	E
RCP 2A 6900V Switchgear 52	ECS-ES-52	2	ESF PAMS	5 min 2 wks	E
RCP 1B 6900V Switchgear 41	ECS-ES-41	2	ESF PAMS	5 min 2 wks	E
RCP 1B 6900V Switchgear 42	ECS-ES-42	2	ESF PAMS	5 min 2 wks	E
RCP 2B 6900V Switchgear 61	ECS-ES-61	2	ESF PAMS	5 min 2 wks	E
RCP 2B 6900V Switchgear 62	ECS-ES-62	2	ESF PAMS	5 min 2 wks	E
Reactor Trip Switchgear	PMS-JD-RTSA01	4	RT PAMS	5 min 2 wks	E
Reactor Trip Switchgear	PMS-JD-RTSA02	4	RT PAMS	5 min 2 wks	E
Reactor Trip Switchgear	PMS-JD-RTSB01	4	RT PAMS	5 min 2 wks	E
Reactor Trip Switchgear	PMS-JD-RTSB02	4	RT PAMS	5 min 2 wks	E
Reactor Trip Switchgear	PMS-JD-RTSC01	4	RT PAMS	5 min 2 wks	E
Reactor Trip Switchgear	PMS-JD-RTSC02	4	RT PAMS	5 min 2 wks	E
Reactor Trip Switchgear	PMS-JD-RTSD01	4	RT PAMS	5 min 2 wks	E
Reactor Trip Switchgear	PMS-JD-RTSD02	4	RT PAMS	5 min 2 wks	E

Table 3.11-1 (Sheet 7 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
LEVEL SWITCHES					
Core Makeup Tank A Narrow Range Upper Level	PXS-JE-LS011A	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank A Narrow Range Upper Level	PXS-JE-LS011B	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank A Narrow Range Upper Level	PXS-JE-LS011C	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank A Narrow Range Upper Level	PXS-JE-LS011D	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank B Narrow Range Upper Level	PXS-JE-LS012A	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank B Narrow Range Upper Level	PXS-JE-LS012B	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank B Narrow Range Upper Level	PXS-JE-LS012C	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank B Narrow Range Upper Level	PXS-JE-LS012D	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank A Narrow Range Lower Level	PXS-JE-LS013A	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank A Narrow Range Lower Level	PXS-JE-LS013B	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank A Narrow Range Lower Level	PXS-JE-LS013C	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank A Narrow Range Lower Level	PXS-JE-LS013D	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank B Narrow Range Lower Level	PXS-JE-LS014A	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank B Narrow Range Lower Level	PXS-JE-LS014B	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank B Narrow Range Lower Level	PXS-JE-LS-014C	1	ESF PAMS	24 hr 4 mos	E *
Core Makeup Tank B Narrow Range Lower Level	PXS-JE-LS014D	1	ESF PAMS	24 hr 4 mos	E *
Containment Floodup Level	PXS-JE-LS050	1	PAMS	4 mos	E *
Containment Floodup Level	PXS-JE-LS051	1	PAMS	4 mos	E *
Containment Floodup Level	PXS-JE-LS052	1	PAMS	4 mos	E *

Table 3.11-1 (Sheet 8 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
NEUTRON DETECTORS					
Source Range Neutron Detector	RXS-JE-NE001A	1	RT ESF	Note 3 Note 3	E *
Source Range Neutron Detector	RXS-JE-NE001B	1	RT ESF	Note 3 Note 3	E *
Source Range Neutron Detector	RXS-JE-NE001C	1	RT ESF	Note 3 Note 3	E *
Source Range Neutron Detector	RXS-JE-NE001D	1	RT ESF	Note 3 Note 3	E *
Intermediate Range Neutron Detector	RXS-JE-NE002A	1	RT PAMS	Note 3 4 mos	E *
Intermediate Range Neutron Detector	RXS-JE-NE002B	1	RT PAMS	Note 3 4 mos	E *
Intermediate Range Neutron Detector	RXS-JE-NE002C	1	RT PAMS	Note 3 4 mos	E *
Intermediate Range Neutron Detector	RXS-JE-NE002D	1	RT PAMS	Note 3 4 mos	E *
Power Range Neutron Detector (Lower)	RXS-JE-NE003A	1	RT	5 min	E *
Power Range Neutron Detector (Lower)	RXS-JE-NE003B	1	RT	5 min	E *
Power Range Neutron Detector (Lower)	RXS-JE-NE003C	1	RT	5 min	E *
Power Range Neutron Detector (Lower)	RXS-JE-NE003D	1	RT	5 min	E *
Power Range Neutron Detector (Upper)	RXS-JE-NE004A	1	RT	5 min	E *
Power Range Neutron Detector (Upper)	RXS–JE-NE004B	1	RT	5 min	E *
Power Range Neutron Detector (Upper)	RXS-JE-NE004C	1	RT	5 min	E *
Power Range Neutron Detector (Upper)	RXS-JE-NE004D	1	RT	5 min	E *

Table 3.11-1 (Sheet 9 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
RADIATION MONITORS					
Containment High Range Area Monitor	PXS-JE-RE160	1	ESF PAMS	24 hr 4 mos	E *
Containment High Range Area Monitor	PXS-JE-RE161	1	ESF PAMS	24 hr 4 mos	E *
Containment High Range Area Monitor	PXS-JE-RE162	1	ESF PAMS	24 hr 4 mos	E *
Containment High Range Area Monitor	PXS-JE-RE163	1	ESF PAMS	24 hr 4 mos	E *
Control Room Supply Air Radiation Monitor	VBS-JE-RE001A	3	ESF PAMS	24 hr 2 wks	E
Control Room Supply Air Radiation Monitor	VBS-JE-RE001B	3	ESF PAMS	24 hr 2 wks	E
RESISTANCE TEMPERATURE DETECTORS					
PRHR HX Outlet Temperature	RCS-JE-TE161	1	PAMS	4 mos	E *
RCS Cold Leg 1A Narrow Range Temperature	RCS-JE-TE121A	1	RT ESF	5 min 5 min	E *
RCS Cold Leg 1A Narrow Range Temperature	RCS-JE-TE121D	1	RT ESF	5 min 5 min	E *
RCS Cold Leg 1B Narrow Range Temperature	RCS-JE-TE121B	1	RT ESF	5 min 5 min	E *
RCS Cold Leg 1B Narrow Range Temperature	RCS-JE-TE121C	1	RT ESF	5 min 5 min	E *
RCS Cold Leg 2A Narrow Range Temperature	RCS-JE-TE122B	1	RT ESF	5 min 5 min	E *
RCS Cold Leg 2A Narrow Range Temperature	RCS-JE-TE122C	1	RT ESF	5 min 5 min	E *
RCS Cold Leg 2B Narrow Range Temperature	RCS-JE-TE122A	1	RT ESF	5 min 5 min	E *
RCS Cold Leg 2B Narrow Range Temperature	RCS-JE-TE122D	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 1 Narrow Range Temperature	RCS-JE-TE131A	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 1 Narrow Range Temperature	RCS-JE-TE131C	1	RT ESF	5 min 5 min	E *

Table 3.11-1 (Sheet 10 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
RCS Hot Leg 1 Narrow Range Temperature	RCS-JE-TE132A	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 1 Narrow Range Temperature	RCS-JE-TE132C	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 1 Narrow Range Temperature	RCS-JE-TE133C	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 1 Narrow Range Temperature	RCS-JE-TE133A	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 2 Narrow Range Temperature	RCS-JE-TE131B	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 2 Narrow Range Temperature	RCS-JE-TE131D	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 2 Narrow Range Temperature	RCS-JE-TE132B	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 2 Narrow Range Temperature	RCS-JE-TE132D	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 2 Narrow Range Temperature	RCS-JE-TE133B	1	RT ESF	5 min 5 min	E *
RCS Hot Leg 2 Narrow Range Temperature	RCS-JE-TE133D	1	RT ESF	5 min 5 min	E *
RCS Cold Leg 1A Dual Range Temperature	RCS-JE-TE125A	1	PAMS	4 mos	E *
RCS Cold Leg 1B Dual Range Temperature	RCS-JE-TE125C	1	PAMS	4 mos	E *
RCS Cold Leg 2A Dual Range Temperature	RCS-JE-TE125B	1	PAMS	4 mos	E *
RCS Cold Leg 2B Dual Range Temperature	RCS-JE-TE125D	1	PAMS	4 mos	E *
RCS Hot Leg 1 Wide Range Temperature	RCS-JE-TE135A	1	PAMS	4 mos	E *
RCS Hot Leg 2 Wide Range Temperature	RCS-JE-TE135B	1	PAMS	4 mos	E *
PZR Reference Leg Level Temperature	RCS-JE-TE193A	1	RT ESF PAMS	5 min 5 min 4 mos	E *

Table 3.11-1 (Sheet 11 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
PZR Reference Leg Level Temperature	RCS-JE-TE193B	1	RT ESF PAMS	5 min 5 min 4 mos	E *
PZR Reference Leg Level Temperature	RCS-JE-TE193C	1	RT ESF PAMS	5 min 5 min 4 mos	E *
PZR Reference Leg Level Temperature	RCS-JE-TE193D	1	RT ESF PAMS	5 min 5 min 4 mos	E *
SPEED SENSORS					
RCP 1A Pump Speed	RCS-JE-ST281	1	RT	Note 3	E *
RCP 1B Pump Speed	RCS-JE-ST282	1	RT	Note 3	E *
RCP 2A Pump Speed	RCS-JE-ST283	1	RT	Note 3	E *
RCP 2B Pump Speed	RCS-JE-ST284	1	RT	Note 3	E *
THERMOCOUPLES					
Incore Thermocouples	IIS-JE-TE001 through IIS-JE-TE042	1	PAMS	1 yr	E *
RCP 1A Bearing Water Temperature	RCS-JE-TE211A	1	RT	Note 3	E *
RCP 1A Bearing Water Temperature	RCS-JE-TE211B	1	RT	Note 3	E *
RCP 1A Bearing Water Temperature	RCS-JE-TE211C	1	RT	Note 3	E *
RCP 1A Bearing Water Temperature	RCS-JE-TE211D	1	RT	Note 3	E *
RCP 1B Bearing Water Temperature	RCS-JE-TE212A	1	RT	Note 3	E *
RCP 1B Bearing Water Temperature	RCS-JE-TE212B	1	RT	Note 3	E *
RCP 1B Bearing Water Temperature	RCS-JE-TE212C	1	RT	Note 3	E *
RCP 1B Bearing Water Temperature	RCS-JE-TE212D	1	RT	Note 3	E *
RCP 2A Bearing Water Temperature	RCS-JE-TE213A	1	RT	Note 3	E *
RCP 2A Bearing Water Temperature	RCS-JE-TE213B	1	RT	Note 3	E *
RCP 2A Bearing Water Temperature	RCS-JE-TE213C	1	RT	Note 3	E *
RCP 2A Bearing Water Temperature	RCS-JE-TE213D	1	RT	Note 3	E *
RCP 2B Bearing Water Temperature	RCS-JE-TE214A	1	RT	Note 3	E *
RCP 2B Bearing Water Temperature	RCS-JE-TE214B	1	RT	Note 3	E *
RCP 2B Bearing Water Temperature	RCS-JE-TE214C	1	RT	Note 3	E *
RCP 2B Bearing Water Temperature	RCS-JE-TE214D	1	RT	Note 3	E *

Table 3.11-1 (Sheet 12 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
TRANSMITTERS					
PCS Water Delivery Flow	PCS-JE-FT001	9	PAMS	2 wks	E
PCS Water Delivery Flow	PCS-JE-FT002	9	PAMS	2 wks	E
PCS Water Delivery Flow	PCS-JE-FT003	9	PAMS	2 wks	E
PCS Water Delivery Flow	PCS-JE-FT004	9	PAMS	2 wks	E
PCS Storage Tank Water Level	PCS-JE-LT010	9	PAMS	2 wks	E
PCS Storage Tank Water Level	PCS-JE-LT011	9	PAMS	2 wks	E
PRHR HX Flow	PXS-JE-FT049A	1	PAMS	4 mos	E *
PRHR HX Flow	PXS-JE-FT049B	1	PAMS	4 mos	E *
RCS Hot Leg 1 Flow	RCS-JE-FT101A	1	RT	Note 3	E *
RCS Hot Leg 1 Flow	RCS-JE-FT101B	1	RT	Note 3	E *
RCS Hot Leg 1 Flow	RCS-JE-FT101C	1	RT	Note 3	E *
RCS Hot Leg 1 Flow	RCS-JE-FT101D	1	RT	Note 3	E *
RCS Hot Leg 2 Flow	RCS-JE-FT102A	1	RT	Note 3	E *
RCS Hot Leg 2 Flow	RCS-JE-FT102B	1	RT	Note 3	E *
RCS Hot Leg 2 Flow	RCS-JE-FT102C	1	RT	Note 3	E *
RCS Hot Leg 2 Flow	RCS-JE-FT102D	1	RT	Note 3	E *
SG1 Startup Feedwater Flow	SGS-JE-FT055A	2	ESF PAMS	5 min 2 wks	E
SG1 Startup Feedwater Flow	SGS-JE-FT055B	2	ESF PAMS	5 min 2 wks	E
SG2 Startup Feedwater Flow	SGS-JE-FT-056A	2	ESF PAMS	5 min 2 wks	E
SG2 Startup Feedwater Flow	SGS-JE-FT056B	2	ESF PAMS	5 min 2 wks	E
MCR Air Delivery Line Flow Rate – A	VES-JE-FT003A	3	PAMS	72 hrs	E
MCR Air Delivery Line Flow Rate – B	VES-JE-FT003B	3	PAMS	72 hrs	E
Plant Vent Flow	VFS-JE-FT101	7	PAMS	2 wks	E +
IRWST Level	PXS-JE-LT045	1	PAMS ESF	4 mos 24 hr	E *
IRWST Level	PXS-JE-LT046	1	PAMS ESF	4 mos 24 hr	E *
IRWST Level	PXS-JE-LT047	1	PAMS ESF	4 mos 24 hr	E *
IRWST Level	PXS-JE-LT048	1	PAMS ESF	4 mos 24 hr	E *

Table 3.11-1 (Sheet 13 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
RCS Hot Leg Water Level	RCS-JE-LT160A	1	PAMS	4 mos	E *
RCS Hot Leg Water Level	RCS-JE-LT160B	1	PAMS	4 mos	E *
PZR Level	RCS-JE-LT195A	1	RT ESF PAMS	5 min 5 min 4 mos	E *
PZR Level	RCS-JE-LT195B	1	RT ESF PAMS	5 min 5 min 4 mos	E *
PZR Level	RCS-JE-LT195C	1	RT ESF PAMS	5 min 5 min 4 mos	E *
PZR Level	RCS-JE-LT195D	1	RT ESF PAMS	5 min 5 min 4 mos	E *
SG1 Narrow Range Level	SGS-JE-LT001	1	RT ESF PAMS	5 min 5 min 4 mos	E *
SG1 Narrow Range Level	SGS-JE-LT002	1	RT ESF PAMS	5 min 5 min 4 mos	E *
SG1 Narrow Range Level	SGS-JE-LT003	1	RT ESF PAMS	5 min 5 min 4 mos	E *
SG1 Narrow Range Level	SGS-JE-LT004	1	RT ESF PAMS	5 min 5 min 4 mos	E *
SG2 Narrow Range Level	SGS-JE-LT005	1	RT ESF PAMS	5 min 5 min 4 mos	E *
SG2 Narrow Range Level	SGS-JE-LT006	1	RT ESF PAMS	5 min 5 min 4 mos	E *
SG2 Narrow Range Level	SGS-JE-LT007	1	RT ESF PAMS	5 min 5 min 4 mos	E *
SG2 Narrow Range Level	SGS-JE-LT008	1	RT ESF PAMS	5 min 5 min 4 mos	E *

Table 3.11-1 (Sheet 14 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
SG1 Wide Range Level	SGS-JE-LT011	1	ESF PAMS	5 min 4 mos	E *
SG1 Wide Range Level	SGS-JE-LT012	1	ESF PAMS	5 min 4 mos	E *
SG1 Wide Range Level	SGS-JE-LT015	1	ESF PAMS	5 min 4 mos	E * E *
SG1 Wide Range Level	SGS-JE-LT016	1	ESF PAMS	5 min 4 mos	E * E *
SG2 Wide Range Level	SGS-JE-LT013	1	ESF PAMS	5 min 4 mos	E *
SG2 Wide Range Level	SGS-JE-LT014	1	ESF PAMS	5 min 4 mos	E *
SG2 Wide Range Level	SGS-JE-LT017	1	ESF PAMS	5 min 4 mos	E *
SG2 Wide Range Level	SGS-JE-LT018	1	ESF PAMS	5 min 4 mos	E *
Spent Fuel Pool Level	SFS-JE-LT019A	11	PAMS	2 wks	E **
Spent Fuel Pool Level	SFS-JE-LT019B	11	PAMS	2 wks	E **
Spent Fuel Pool Level	SFS-JE-LT019C	11	PAMS	2 wks	E **
Air Storage Tank Pressure – A	VES-JE-PT001A	7	PAMS	2 wks	E+
Air Storage Tank Pressure – B	VES-JE-PT001B	7	PAMS	2 wks	E+
Containment Pressure Normal Range	PCS-JE-PT005	1	ESF PAMS	5 min 4 mos	E *
Containment Pressure Normal Range	PCS-JE-PT006	1	ESF PAMS	5 min 4 mos	E *
Containment Pressure Normal Range	PCS-JE-PT007	1	ESF PAMS	5 min 4 mos	E *
Containment Pressure Normal Range	PCS-JE-PT008	1	ESF PAMS	5 min 4 mos	E *
Containment Pressure Extended Range	PCS-JE-PT012	1	PAMS	4 mos	E *
Containment Pressure Extended Range	PCS-JE-PT013	1	PAMS	4 mos	E *
Containment Pressure Extended Range	PCS-JE-PT014	1	PAMS	4 mos	E *

Table 3.11-1 (Sheet 15 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
RCS Wide Range Pressure	RCS-JE-PT140A	1	PAMS ESF	4 mos 5 min	E *
RCS Wide Range Pressure	RCS-JE-PT140B	1	PAMS ESF	4 mos 5 min	E *
RCS Wide Range Pressure	RCS-JE-PT140C	1	PAMS ESF	4 mos 5 min	E *
RCS Wide Range Pressure	RCS-JE-PT140D	1	PAMS ESF	4 mos 5 min	E *
PZR Pressure	RCS-JE-PT191A	1	RT ESF PAMS	5 min 5 min 4 mos	E *
PZR Pressure	RCS-JE-PT191B	1	RT ESF PAMS	5 min 5 min 4 mos	E *
PZR Pressure	RCS-JE-PT191C	1	RT ESF PAMS	5 min 5 min 4 mos	E *
PZR Pressure	RCS-JE-PT191D	1	RT ESF PAMS	5 min 5 min 4 mos	E *
Main Steamline SG1 Pressure	SGS-JE-PT030	1	ESF PAMS	5 min 2 wks	E *
Main Steamline SG1 Pressure	SGS-JE-PT031	2	ESF PAMS	5 min 2 wks	E
Main Steamline SG1 Pressure	SGS-JE-PT032	1	ESF PAMS	5 min 2 wks	E *
Main Steamline SG1 Pressure	SGS-JE-PT033	2	ESF PAMS	5 min 2 wks	E
Main Steamline SG2 Pressure	SGS-JE-PT034	1	ESF PAMS	5 min 2 wks	E *
Main Steamline SG2 Pressure	SGS-JE-PT035	2	ESF PAMS	5 min 2 wks	E
Main Steamline SG2 Pressure	SGS-JE-PT036	1	ESF PAMS	5 min 2 wks	E *
Main Steamline SG2 Pressure	SGS-JE-PT037	2	ESF PAMS	5 min 2 wks	E

Table 3.11-1 (Sheet 16 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Main Control Room Differential Pressure	VES-JE-PDT004A	3	ESF PAMS	2 wks 2 wks	E
Main Control Room Differential Pressure	VES-JE-PDT004B	3	ESF PAMS	2 wks 2 wks	E
PROTECTION AND SAFETY MONITORING SYSTEMS					
Protection and Safety Monitoring System Cabinets	Multiple (Note 7)	2	RT ESF PAMS	5 min 24 hr 2 wks	E
QDPS Thermocouple Reference Panel 1	PMS-JW-003B	1	PAMS	1 yr	E *
QDPS Thermocouple Reference Panel 2	PMS-JW-003C	1	PAMS	1 yr	E *
MCR/RSW Transfer Switch Panel A	PMS-JW-004A	2	RT ESF	5 min 24 hr	E
MCR/RSW Transfer Switch Panel B	PMS-JW-004B	2	RT ESF	5 min 24 hr	E
MCR/RSW Transfer Switch Panel C	PMS-JW-004C	2	RT ESF	5 min 24 hr	E
MCR/RSW Transfer Switch Panel D	PMS-JW-004D	2	RT ESF	5 min 24 hr	E
Source Range Neutron Flux Preamplifier Panel A	PMS-JW-005A	2	RT, ESF	Note 3	E
Source Range Neutron Flux Preamplifier Panel B	PMS-JW-005B	2	RT, ESF	Note 3	E
Source Range Neutron Flux Preamplifier Panel C	PMS-JW-005C	2	RT, ESF	Note 3	E
Source Range Neutron Flux Preamplifier Panel D	PMS-JW-005D	2	RT, ESF	Note 3	E
Intermediate Range Neutron Flux Preamplifier Panel A	PMS-JW-006A	2	RT PAMS	Note 3 4 mos	E
Intermediate Range Neutron Flux Preamplifier Panel B	PMS-JW-006B	2	RT PAMS	Note 3 4 mos	E
Intermediate Range Neutron Flux Preamplifier Panel C	PMS-JW-006C	2	RT PAMS	Note 3 4 mos	E
Intermediate Range Neutron Flux Preamplifier Panel D	PMS-JW-006D	2	RT PAMS	Note 3 4 mos	E

Table 3.11-1 (Sheet 17 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Power Range Neutron Flux High Voltage Distribution Box A	PMS-JW-007A	2	RT	5 min	E
Power Range Neutron Flux High Voltage Distribution Box B	PMS-JW-007B	2	RT	5 min	E
Power Range Neutron Flux High Voltage Distribution Box C	PMS-JW-007C	2	RT	5 min	E
Power Range Neutron Flux High Voltage Distribution Box D	PMS-JW-007D	2	RT	5 min	E
MAIN CONTROL ROOM					
Operator Workstation A	N/A	3	RT ESF PAMS	5 min 24 hr 2 wks	E
Operator Workstation B	N/A	3	RT ESF PAMS	5 min 24 hr 2 wks	E
Supervisor Workstation	N/A	3	RT ESF PAMS	5 min 24 hr 2 wks	E
Switch Station (Including Switches)	N/A	3	RT ESF	5 min 24 hr	E
QDPS MCR Display Unit	PMS-JY-001B	3	PAMS	2 wks	E
QDPS MCR Display Unit	PMS-JY-001C	3	PAMS	2 wks	E
PENETRATIONS					
Penetrations (Mechanical)	See Table 6.2.3-1				M *
Penetrations (Electrical)	See Figure 3.8.2-4				E *
ACTIVE VALVES					
Containment Isolation – Air Out Solenoid Valve Limit Switch	CAS-PL-V014 CAS-PL-V014-S CAS-PL-V014-L	2 2 2	ESF ESF PAMS	5 min 5 min 2 wks	M S E E
Containment Isolation – Air In	CAS-PL-V015	1	ESF	5 min	M *
Containment Isolation – Inlet Limit Switch Motor Operator	CCS-PL-V200 CCS-PL-V200-L CCS-PL-V200-M	2 2 2	ESF PAMS ESF	5 min 2 wks 5 min	M S E E
Containment Isolation – Inlet	CCS-PL-V201	1	ESF	5 min	M *

Table 3.11-1 (Sheet 18 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Containment Isolation – Outlet	CCS-PL-V207	1	ESF	5 min	M *
Limit Switch	CCS-PL-V207-L	1	PAMS	1 yr	E *
Motor Operator	CCS-PL-V207-M	1	ESF	5 min	E *
Containment Isolation – Outlet	CCS-PL-V208	2	ESF	5 min	M S
Limit Switch	CCS-PL-V208-L	2	PAMS	2 wks	E
Motor Operator	CCS-PL-V208-M	2	ESF	5 min	E
RCS Purification Stop Valve	CVS-PL-V001	1	ESF	5 min	M *
Limit Switch	CVS-PL-V001-L	1	PAMS	1 yr	E *
Motor Operator	CVS-PL-V001-M	1	ESF	5 min	E *
RCS Purification Stop Valve	CVS-PL-V002	1	ESF	5 min	M *
Limit Switch	CVS-PL-V002-L	1	PAMS	1 yr	E *
Motor Operator	CVS-PL-V002-M	1	ESF	5 min	E *
RCS Letdown Stop Valve	CVS-PL-V003	1	ESF	5 min	M *
Limit Switch	CVS-PL-V003-L	1	PAMS	1 yr	E *
Motor Operator	CVS-PL-V003-M	1	ESF	5 min	E *
Demineralizer Flush Line Relief Valve	CVS-PL-V042	7	ESF	24 hr	M **
WLS Letdown IRC Isolation	CVS-PL-V045	1	ESF	5 min	M *
Limit Switch	CVS-PL-V045-L	1	PAMS	1 yr	E *
Solenoid Valve	CVS-PL-V045-S1	1	ESF	5 min	E *
Letdown Flow ORC Isolation	CVS-PL-V047	7	ESF	5 min	M S **
Limit Switch	CVS-PL-V047-L	7	PAMS	2 wks	E **
Solenoid Valve	CVS-PL-V047-S1	7	ESF	5 min	E **
RCS Purification Check Valve	CVS-PL-V080	1	ESF	5 min	M *
RCS Purification Stop Valve	CVS-PL-V081	1	ESF	5 min	M *
RCS Purification Check Valve	CVS-PL-V082	1	ESF	5 min	M *
Auxiliary PZR Spray Isolation	CVS-PL-V084	1	ESF	5 min	M *
Limit Switch	CVS-PL-V084-L	1	PAMS	1 yr	E *
Solenoid Valve	CVS-PL-V084-S	1	ESF	5 min	E *
Auxiliary PZR Spray Isolation	CVS-PL-V085	1	ESF	5 min	M *
Makeup Line Containment Isolation	CVS-PL-V090	7	ESF	5 min	M S **
Limit Switch	CVS-PL-V090-L	7	PAMS	2 wks	E **
Motor Operator	CVS-PL-V090-M	7	ESF	5 min	E **
Makeup Line Containment Isolation	CVS-PL-V091	1	ESF	5 min	M *
Limit Switch	CVS-PL-V091-L	1	PAMS	1 yr	E *
Motor Operator	CVS-PL-V091-M	1	ESF	5 min	E *

Table 3.11-1 (Sheet 19 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Hydrogen Addition Containment Isolation	CVS-PL-V092	10	ESF	5 min	M *
Limit Switch	CVS-PL-V092-L	10	PAMS	2 wks	E *
Solenoid Valve	CVS-PL-V092-S	10	ESF	5 min	E *
Hydrogen Addition Containment Isolation	CVS-PL-V094	1	ESF	5 min	M *
Makeup Containment Isolation	CVS-PL-V100	1	ESF	24 hrs	M *
Demineralizer Water System Isolation	CVS-PL-V136A	7	ESF	5 min	M **
Limit Switch	CVS-PL-V136A-L	7	PAMS	2 wks	E **
Solenoid Valve	CVS-PL-V136A-S	7	ESF	5 min	E **
Demineralized Water System Isolation	CVS-PL-V136B	7	ESF	5 min	M **
Limit Switch	CVS-PL-V136B-L	7	PAMS	2 wks	E **
Solenoid Valve	CVS-PL-V136B-S	7	ESF	5 min	E **
Fuel Transfer Tube Gate Valve	FHS-PL-V001	11	ESF	2 wks	M **
PCCWST Isolation Valve	PCS-PL-V001A	9	ESF	5 min	M S
Limit Switch	PCS-PL-V001A-L	9	PAMS	2 wks	E
Solenoid Valve	PCS-PL-V001A-S1	9	ESF	5 min	E
PCCWST Isolation Valve	PCS-PL-V001B	9	ESF	5 min	M S
Limit Switch	PCS-PL-V001B-L	9	PAMS	2 wks	E
Solenoid Valve	PCS-PL-V001B-S1	9	ESF	5 min	E
PCCWST Isolation Valve	PCS-PL-V001C	9	ESF	5 min	M S
Limit Switch	PCS-PL-V001C-L	9	PAMS	2 wks	E
Motor Operator	PCS-PL-V001C-M	9	ESF	5 min	E
PCCWST Isolation Valve	PCS-PL-V002A	9	ESF	5 min	M S
Limit Switch	PCS-PL-V002A-L	9	PAMS	2 wks	E
Motor Operator	PCS-PL-V002A-M	9	ESF	5 min	E
PCCWST Isolation Valve	PCS-PL-V002B	9	ESF	5 min	M S
Limit Switch	PCS-PL-V002B-L	9	PAMS	2 wks	E
Motor Operator	PCS-PL-V002B-M	9	ESF	5 min	E
PCCWST Isolation Valve	PCS-PL-V002C	9	ESF	5 min	M S
Limit Switch	PCS-PL-V002C-L	9	PAMS	2 wks	E
Motor Operator	PCS-PL-V002C-M	9	ESF	5 min	E
PCCWST Fire Protection Isolation	PCS-PL-V005	10	ESF	72 hrs	M *
PCCWST Emergency Spent Fuel Pool Makeup Isolation	PCS-PL-V009	9	ESF	2 wks	M

Table 3.11-1 (Sheet 20 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Water Bucket Makeup Line Drain Valve	PCS-PL-V015	10	ESF	2 wks	M *
Water Bucket Makeup Line Isolation Valve	PCS-PL-V020	10	ESF	2 wks	M *
PCS Recirculation Isolation	PCS-PL-V023	10	ESF	72 hrs	M *
PCCWST Long-Term Makeup Check Valve	PCS-PL-V039	10	ESF	2 wks	M *
PCCWST Long Term Makeup Isolation Drain Valve	PCS-PL-V042	10	ESF	2 wks	M *
PCCWST Long Term Makeup Isolation Valve	PCS-PL-V044	10	ESF	2 wks	M *
Emergency Makeup to the Spent Fuel Pool Isolation Valve	PCS-PL-V045	7	ESF	2 wks	M
PCCWST Recirculation Return Isolation Valve	PCS-PL-V046	10	ESF	2 wks	M *
Emergency Makeup to the Spent Fuel Pool Drain Isolation Valve	PCS-PL-V049	7	ESF	2 wks	M
Spent Fuel Pool Long Term Makeup Isolation Valve	PCS-PL-V050	10	ESF	2 wks	M *
Spent Fuel Pool Emergency Makeup Lower Isolation Valve	PCS-PL-V051	7	ESF	2 wks	M
Spent Fuel Pool Emergency Makeup Isolation	PCS-PL-V052	7	ESF	2 wks	M
Containment Isolation – Air Sample Line	PSS-PL-V008	1	ESF	4 mos	M *
Limit Switch	PSS-PL-V008-L	1	PAMS	1 yr	E *
Solenoid Operator	PSS-PL-V008-S	1	ESF	5 min	E *
Containment Isolation – Liquid Sample Line	PSS-PL-V010A	1	ESF	4 mos	M *
Limit Switch	PSS-PL-V010A-L	1	PAMS	1 yr	E *
Solenoid Operator	PSS-PL-V010A-S	1	ESF	5 min	E *
Containment Isolation – Liquid Sample Line	PSS-PL-V010B	1	ESF	4 mos	M *
Limit Switch	PSS-PL-V010B-L	1	PAMS	1 yr	E *
Solenoid Operator	PSS-PL-V010B-S	1	ESF	5 min	E *
Containment Isolation – Liquid Sample Line	PSS-PL-V011	6	ESF	2 wks	M S **
Limit Switch	PSS-PL-V011-L	6	PAMS	2 wks	E **
Solenoid Valve	PSS-PL-V011-S	6	ESF	5 min	E **

Table 3.11-1 (Sheet 21 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Containment Isolation - Sample Return Line	PSS-PL-V023	6	ESF	2 wks	M S **
Limit Switch	PSS-PL-V023-L	6	PAMS	2 wks	E **
Solenoid Valve	PSS-PL-V023-S	6	ESF	5 min	E **
Containment Isolation Sample Return	PSS-PL-V024	1	ESF	4 mos	M *
Containment Isolation - Air Sample Line	PSS-PL-V046	6	ESF	2 wks	M S **
Limit Switch	PSS-PL-V046-L	6	PAMS	2 wks	E **
Solenoid Valve	PSS-PL-V046-S	6	ESF	2 wks	E **
Core Makeup Tank A Discharge Isolation	PXS-PL-V014A	1	ESF	5 min	M *
Limit Switch	PXS-PL-V014A-L	1	PAMS	1 yr	E *
Solenoid Valve	PXS-PL-V014A-S1	1	ESF	5 min	E *
Core Makeup Tank B Discharge Isolation	PXS-PL-V014B	1	ESF	5 min	M *
Limit Switch	PXS-PL-V014B-L	1	PAMS	1 yr	E *
Solenoid Valve	PXS-PL-V014B-S1	1	ESF	5 min	E *
Core Makeup Tank A Discharge Isolation	PXS-PL-V015A	1	ESF	5 min	M *
Limit Switch	PXS-PL-V015A-L	1	PAMS	1 yr	E *
Solenoid Valve	PXS-PL-V015A-S1	1	ESF	5 min	E *
Core Makeup Tank B Discharge Isolation	PXS-PL-V015B	1	ESF	5 min	M *
Limit Switch	PXS-PL-V015B-L	1	PAMS	1 yr	E *
Solenoid Valve	PXS-PL-V015B-S1	1	ESF	5 min	E *
Core Makeup Tank A Discharge	PXS-PL-V016A	1	ESF	5 min	M *
Core Makeup Tank B Discharge	PXS-PL-V016B	1	ESF	5 min	M *
Core Makeup Tank A Discharge	PXS-PL-V017A	1	ESF	5 min	M *
Core Makeup Tank B Discharge	PXS-PL-V017B	1	ESF	5 min	M *
Accumulator A Pressure Relief	PXS-PL-V022A	1	ESF	5 min	M *
Accumulator B Pressure Relief	PXS-PL-V022B	1	ESF	5 min	M *
Accumulator A Discharge	PXS-PL-V028A	1	ESF	5 min	M *
Accumulator B Discharge	PXS-PL-V028B	1	ESF	5 min	M *
Accumulator A Discharge	PXS-PL-V029A	1	ESF	5 min	M *
Accumulator B Discharge	PXS-PL-V029B	1	ESF	5 min	M *

Table 3.11-1 (Sheet 22 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Nitrogen Supply Outside Containment Isolation	PXS-PL-V042	2	ESF	5 min	M S
Limit Switch	PXS-PL-V042-L	2	PAMS	2 wks	E
Solenoid Valve	PXS-PL-V042-S	2	ESF	5 min	E
IRC Nitrogen Supply Inside Containment Isolation	PXS-PL-V043	1	ESF	5 min	M *
PRHR HX Discharge Isolation	PXS-PL-V108A	1	ESF	5 min	M *
Limit Switch	PXS-PL-V108A-L	1	PAMS	1 yr	E *
Solenoid Valve	PXS-PL-V108A-S1	1	ESF	5 min	E *
PRHR HX Discharge Isolation	PXS-PL-V108B	1	ESF	5 min	M *
Limit Switch	PXS-PL-V108B-L	1	PAMS	1 yr	E *
Solenoid Valve	PXS-PL-V108B-S1	1	ESF	5 min	E *
Recirc Sump A Isolation	PXS-PL-V117A	1	ESF	24 hr	M *
Limit Switch	PXS-PL-V117A-L	1	PAMS	1 yr	E *
Motor Operator	PXS-PL–V117A-M	1	ESF	24 hr	E *
Recirc Sump B Isolation	PXS-PL–V117B	1	ESF	24 hr	M *
Limit Switch	PXS-PL–V117B-L	1	PAMS	1 yr	E *
Motor Operator	PXS-PL-V117B-M	1	ESF	24 hr	E *
Recirc Sump A Isolation	PXS-PL-V118A	1	ESF	72 hr	M *
Limit Switch	PXS-PL–V118A-L	1	PAMS	1 yr	E *
Squib Operator	PXS-PL–V118A-T	1	ESF	72 hr	E *
Recirc Sump B Isolation	PXS-PL-V118B	1	ESF	72 hr	M *
Limit Switch	PXS-PL-V118B-L	1	PAMS	1 yr	E *
Squib Operator	PXS-PL-V118B-T	1	ESF	72 hr	E *
Recirc Sump A	PXS-PL-V119A	1	ESF	24 hr	M *
Recirc Sump B	PXS-PL-V119B	1	ESF	24 hr	M *
Recirc Sump A	PXS-PL-V120A	1	ESF	72 hr	M *
Limit Switch	PXS-PL-V120A-L	1	PAMS	1 yr	E *
Squib Operator	PXS-PL-V120A-T	1	ESF	72 hr	E *
Recirc Sump B	PXS- PL-V120B	1	ESF	72 hr	M *
Limit Switch	PXS-PL-V120B-L	1	PAMS	1 yr	E *
Squib Operator	PXS-PL-V120B-T	1	ESF	72 hr	E *
IRWST Injection A	PXS-PL-V122A	1	ESF	24 hr	M *
IRWST Injection B	PXS-PL-V122B	1	ESF	24 hr	M *

Table 3.11-1 (Sheet 23 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
IRWST Injection A	PXS-PL-V123A	1	ESF	72 hr	M *
Limit Switch	PXS-PL-V123A-L	1	PAMS	1 yr	E *
Squib Operator	PXS-PL-V123A-T	1	ESF	72 hr	E *
IRWST Injection B	PXS-PL-V123B	1	ESF	72 hr	M *
Limit Switch	PXS-PL-V123B-L	1	PAMS	1 yr	E *
Squib Operator	PXS-PL-V123B-T	1	ESF	72 hr	E *
IRWST Injection A	PXS-PL-V124A	1	ESF	24 hr	M *
IRWST Injection B	PXS-PL-V124B	1	ESF	24 hr	M *
IRWST Injection A	PXS-PL-V125A	1	ESF	72 hr	M *
Limit Switch	PXS-PL-V125A-L	1	PAMS	1 yr	E *
Squib Operator	PXS-PL-V125A-T	1	ESF	72 hr	E *
IRWST Injection B	PXS-PL-V125B	1	ESF	72 hr	M *
Limit Switch	PXS-PL-V125B-L	1	PAMS	1 yr	E *
Squib Operator	PXS-PL-V125B-T	1	ESF	72 hr	E *
IRWST Gutter Drain Isolation A	PXS-PL-V130A	1	ESF	5 min	M *
Limit Switch	PXS-PL-V130A-L	1	PAMS	1 yr	E *
Solenoid Valve	PXS-PL-V130A-S1	1	ESF	5 min	E *
IRWST Gutter Drain Isolation B	PXS-PL-V130B	1	ESF	5 min	M *
Limit Switch	PXS-PL-V130B-L	1	PAMS	1 yr	E *
Solenoid Valve	PXS-PL-V130B-S1	1	ESF	5 min	E *
First Stage ADS	RCS-PL-V001A	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V001A-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V001A-M	1	ESF	24 hr	E *
First Stage ADS	RCS-PL-V001B	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V001B-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V001B-M	1	ESF	24 hr	E *
Second Stage ADS	RCS-PL-V002A	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V002A-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V002A-M	1	ESF	24 hr	E *
Second Stage ADS	RCS-PL-V002B	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V002B-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V002B-M	1	ESF	24 hr	E *
Third Stage ADS	RCS-PL-V003A	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V003A-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V003A-M	1	ESF	24 hr	E *
Third Stage ADS	RCS-PL-V003B	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V003B-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V003B-M	1	ESF	24 hr	E *

Table 3.11-1 (Sheet 24 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Fourth Stage ADS	RCS-PL-V004A	1	ESF	72 hr	M *
Limit Switch	RCS-PL-V004A-L	1	PAMS	1 yr	E *
Squib Operator	RCS-PL-V004A-T	1	ESF	72 hr	E *
Fourth Stage ADS	RCS-PL-V004B	1	ESF	72 hr	M *
Limit Switch	RCS-PL-V004B-L	1	PAMS	1 yr	E *
Squib Operator	RCS-PL-V004B-T	1	ESF	72 hr	E *
Fourth Stage ADS	RCS-PL-V004C	1	ESF	72 hr	M *
Limit Switch	RCS-PL-V004C-L	1	PAMS	1 yr	E *
Squib Operator	RCS-PL-V004C-T	1	ESF	72 hr	E *
Fourth Stage ADS	RCS-PL-V004D	1	ESF	72 hr	M *
Limit Switch	RCS-PL-V004D-L	1	PAMS	1 yr	E *
Squib Operator	RCS-PL-V004D-T	1	ESF	72 hr	E *
PZR Safety Valve	RCS-PL-V005A	1	ESF	5 min	M *
PZR Safety Valve	RCS-PL-V005B	1	ESF	5 min	M *
ADS Discharge Header A Relief	RCS-PL-V010A	1	ESF	24 hr	M *
ADS Discharge Header B Relief	RCS-PL-V010B	1	ESF	24 hr	M *
First Stage ADS Isolation	RCS-PL-V011A	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V011A-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V011A-M	1	ESF	24 hr	E *
First Stage ADS Isolation	RCS-PL-V011B	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V011B-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V011B-M	1	ESF	24 hr	E *
Second Stage ADS Isolation	RCS-PL-V012A	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V012A-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V012A-M	1	ESF	24 hr	E *
Second Stage ADS Isolation	RCS-PL-V012B	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V012B-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V012B-M	1	ESF	24 hr	E *
Third Stage ADS Isolation	RCS-PL-V013A	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V013A-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V013A-M	1	ESF	24 hr	E *
Third Stage ADS Isolation	RCS-PL-V013B	1	ESF	24 hr	M *
Limit Switch	RCS-PL-V013B-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V013B-M	1	ESF	24 hr	E *
Reactor Vessel Head Vent	RCS-PL-V150A	1	ESF	5 min	M *
Limit Switch	RCS-PL-V150A-L	1	PAMS	1 yr	E *
Solenoid Operator	RCS-PV-V150A-S	1	ESF	5 min	E *

Table 3.11-1 (Sheet 25 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Reactor Vessel Head Vent	RCS-PL-V150B	1	ESF	5 min	M *
Limit Switch	RCS-PL-V150B-L	1	PAMS	1 yr	E *
Solenoid Operator	RCS-PL-V150B-S	1	ESF	5 min	E *
Reactor Vessel Head Vent	RCS-PL-V150C	1	ESF	5 min	M *
Limit Switch	RCS-PL-V150C-L	1	PAMS	1 yr	E *
Solenoid Operator	RCS-PL-V150C-S	1	ESF	5 min	E *
Reactor Vessel Head Vent	RCS-PL-V150D	1	ESF	5 min	M *
Limit Switch	RCS-PL-V150D-L	1	PAMS	1 yr	E *
Solenoid Operator	RCS-PL-V150D-S	1	ESF	5 min	E *
RCS Inner Suction Isolation	RNS-PL-V001A	1	ESF	5 min	M *
Limit Switch	RNS-PL-V001A-L	1	PAMS	1 yr	E *
Motor Operator	RNS-PL-V001A-M	1	ESF	5 min	E *
RCS Inner Suction Isolation	RNS-PL-V001B	1	ESF	5 min	M *
Limit Switch	RNS-PL-V001B-L	1	PAMS	1 yr	E *
Motor Operator	RNS-PL-V001B-M	1	ESF	5 min	E *
RCS Outer Suction Isolation	RNS-PL-V002A	1	ESF	5 min	M *
Limit Switch	RNS-PL-V002A-L	1	PAMS	1 yr	E *
Motor Operator	RNS-PL-V002A-M	1	ESF	5 min	E *
RCS Outer Suction Isolation	RNS-PL-V002B	1	ESF	5 min	M *
Limit Switch	RNS-PL-V002B-L	1	PAMS	1 yr	E *
Motor Operator	RNS-PL-V002B-M	1	ESF	5 min	E *
RCS Thermal Relief	RNS-PL-V003A	1	ESF	24 hr	M *
RCS Thermal Relief	RNS-PL-V003B	1	ESF	24 hr	M *
RHR Control/Isolation Valve	RNS-PL-V011	6	ESF	5 min	M S **
Limit Switch	RNS-PL-V011-L	6	PAMS	2 wks	E **
Motor Operator	RNS-PL-V011-M	6	ESF	5 min	E **
RNS Discharge Containment Isolation	RNS-PL-V013	1	ESF	5 min	M *
RNS Discharge RCP B Isolation	RNS-PL-V015A	1	ESF	5 min	M *
RNS Discharge RCP B Isolation	RNS-PL-V015B	1	ESF	5 min	M *
RNS Discharge RCP B Isolation	RNS-PL-V017A	1	ESF	5 min	M *
RNS Discharge RCP B Isolation	RNS-PL-V017B	1	ESF	5 min	M *
RNS Hot Leg Suction Relief	RNS-PL-V021	1	ESF	24 hr	M *
RHR Pump Suction Header Isolation	RNS-PL-V022	6	ESF	5 min	M S **
Limit Switch	RNS-PL-V022-L	6	PAMS	2 wks	E **
Motor Operator	RNS-PL-V022-M	6	ESF	5 min	E **

Table 3.11-1 (Sheet 26 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
IRWST Suction Line Isolation	RNS-PL-V023	1	ESF	5 min	M *
Limit Switch	RNS-PL-V023-L	1	PAMS	1 yr	E *
Motor Operator	RNS-PL-V023-M	1	ESF	5 min	E *
RNS HX A Channel Head Drain	RNS-PL-V046A	6	ESF	1 yr	M **
RNS – CVS Containment Isolation	RNS-PL-V061	1	ESF	5 min	M *
Limit Switch	RNS-PL-V061-L	1	PAMS	1 yr	E *
Motor Operator	RNS-PL-V061-M	1	ESF	5 min	E *
Containment Isolation	SFS-PL-V034	1	ESF	5 min	M *
Limit Switch	SFS-PL-V034-L	1	PAMS	1 yr	E *
Motor Operator	SFS-PL–V034-M	1	ESF	5 min	E *
Containment Isolation	SFS-PL-V035	6	ESF	5 min	M S **
Limit Switch	SFS-PL-V035-L	6	PAMS	2 wks	E **
Motor Operator	SFS- PL-V035-M	6	ESF	5 min	E **
SFS Discharge Containment Isolation	SFS-PL-V037	1	ESF	5 min	M *
Containment Isolation	SFS-PL-V038	6	ESF	5 min	M S **
Limit Switch	SFS-PL-V038-L	6	PAMS	2 wks	E **
Motor Operator	SFS-PL-V038-M	6	ESF	5 min	E **
Spent Fuel Pool to Cask Washdown Pit Isolation	SFS-PL-V066	6	ESF	2 wks	M **
Cask Washdown Pit Drain Isolation	SFS-PL-V068	6	ESF	2 wks	M **
Refueling Cavity to SG Compartment	SFS-PL-V071	1	ESF	2 wks	M *
Refueling Cavity to SG Compartment	SFS-PL-V072	1	ESF	2 wks	M *
PORV Block Valve	SGS-PL-V027A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V027A-L	5	PAMS	2 wks	E *
Motor Operator	SGS-PL-V027A-M	5	ESF	5 min	E *
PORV Block Valve	SGS-PL-V027B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V027B-L	5	PAMS	2 wks	E *
Motor Operator	SGS-PL-V027B-M	5	ESF	5 min	E *
Steam Safety Valve SG01	SGS-PL-V030A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V030A-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG02	SGS-PL-V030B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V030B-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG01	SGS-PL-V031A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V031A-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG02	SGS-PL-V031B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V031B-L	5	PAMS	2 wks	E * +

Table 3.11-1 (Sheet 27 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Steam Safety Valve SG01	SGS-PL-V032A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V032A-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG02	SGS-PL-V032B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V032B-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG01	SGS-PL-V033A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V033A-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG02	SGS-PL-V033B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V033B-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG01	SGS-PL-V034A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V034A-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG02	SGS-PL-V034B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V034B-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG01	SGS-PL-V035A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V035A-L	5	PAMS	2 wks	E * +
Steam Safety Valve SG02	SGS-PL-V035B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V035B-L	5	PAMS	2 wks	E * +
Steamline Condensate					
Drain Isolation	SGS-PL-V036A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V036A-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V036A-S	5	ESF	5 min	E *
Steamline Condensate Isolation	SGS-PL-V036B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V036B-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V036B-S	5	ESF	5 min	E *
Main Steamline Isolation	SGS-PL-V040A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V040A-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V040A-S1	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V040A-S2	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V040A-S3	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V040A-S4	5	ESF	5 min	E *
Main Steamline Isolation	SGS-PL-V040B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V040B-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V040B-S1	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V040B-S2	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V040B-S3	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V040B-S4	5	ESF	5 min	E *

Table 3.11-1 (Sheet 28 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Main Feedwater Isolation	SGS-PL-V057A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V057A-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V057A-S1	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V057A-S2	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V057A-S3	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V057A-S4	5	ESF	5 min	E *
Main Feedwater Isolation	SGS-PL-V057B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V057B-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V057B-S1	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V057B-S2	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V057B-S3	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V057B-S4	5	ESF	5 min	E *
Startup Feedwater Isolation	SGS-PL-V067A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V067A-L	5	PAMS	2 wks	E *
Motor Operator	SGS-PL-V067A-M	5	ESF	5 min	E *
Startup Feedwater Isolation	SGS-PL-V067B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V067B-L	5	PAMS	2 wks	E *
Motor Operator	SGS-PL-V067B-M	5	ESF	5 min	E *
SG Blowdown Isolation	SGS-PL-V074A	10	ESF	5 min	M *
Limit Switch	SGS-PL-V074A-L	10	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V074A-S	10	ESF	5 min	E *
SG Blowdown Isolation	SGS-PL-V074B	10	ESF	5 min	M *
Limit Switch	SGS-PL-V074B-L	10	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V074B-S	10	ESF	5 min	E *
SG Series Blowdown Isolation	SGS-PL-V075A	10	ESF	5 min	M *
Limit Switch	SGS-PL-V075A-L	10	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V075A-S	10	ESF	5 min	E *
SG Series Blowdown Isolation	SGS-PL-V075B	10	ESF	5 min	M *
Limit Switch	SGS-PL-V075B-L	10	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V075B-S	10	ESF	5 min	E *
Steamline Condensate Drain	SGS-PL-V086A	5	ESF	5 min	M *
Isolation Solenoid Valve	SGS-PL-V086A-S	5	ESF	5 min	E *
Steamline Condensate Drain	SGS-PL-V086B	5	ESF	5 min	M *
Isolation Solenoid Valve	SGS-PL-V086B-S	5	ESF	5 min	E *

Table 3.11-1 (Sheet 29 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Power Operated Relief Valve	SGS-PL-V233A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V233A-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V233A-S	5	ESF	5 min	E *
Power Operated Relief Valve	SGS-PL-V233B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V233B-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V233B-S	5	ESF	5 min	E *
MSIV Bypass Isolation Valve	SGS-PL-V240A	5	ESF	5 min	M *
Limit Switch	SGS- PL-V240A-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V240A-S1	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V240A-S2	5	ESF	5	E *
MSIV Bypass Isolation Valve	SGSPLV240B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V240B-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V240B-S1	5	ESF	5 min	E *
Solenoid Valve	SGS-PL-V240B-S2	5	ESF	5 min	E *
Main Feedwater Control Valve	SGS-PL-V250A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V250A-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V250A-S	5	ESF	5 min	E *
Main Feedwater Control Valve	SGS-PL-V250B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V250B-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V250B-S	5	ESF	5 min	E *
Startup Feedwater Control Valve	SGS-PL-V255A	5	ESF	5 min	M *
Limit Switch	SGS-PL-V255A-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V255A-S	5	ESF	5 min	E *
Startup Feedwater Control Valve	SGS-PL-V255B	5	ESF	5 min	M *
Limit Switch	SGS-PL-V255B-L	5	PAMS	2 wks	E *
Solenoid Valve	SGS-PL-V255B-S	5	ESF	5 min	E *
MCR Isolation Valve	VBS-PL-V186	3	ESF	24 hr	M
Limit Switch	VBS-PL-V186-L	3	PAMS	2 wks	E
Solenoid Valve	VBS-PL-V186-S	3	ESF	24 hr	E
MCR Isolation Valve	VBS-PL-V187	3	ESF	24 hr	M
Limit Switch	VBS-PL-V187-L	3	PAMS	2 wks	E
Solenoid Valve	VBS-PL-V187-S	3	ESF	24 hr	E
MCR Isolation Valve	VBS-PL-V188	3	ESF	24 hr	M
Limit Switch	VBS-PL-V188-L	3	PAMS	2 wks	E
Solenoid Valve	VBS-PL-V188-S	3	ESF	24 hr	E

Table 3.11-1 (Sheet 30 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
MCR Isolation Valve	VBS-PL-V189	3	ESF	24 hr	M
Limit Switch	VBS-PL-V189-L	3	PAMS	2 wks	E
Solenoid Valve	VBS-PL-V189-S	3	ESF	24 hr	E
MCR Isolation Valve	VBS-PL-V190	3	ESF	24 hr	M
Limit Switch	VBS-PL-V190-L	3	PAMS	2 wks	E
Solenoid Valve	VBS-PL-V190-S	3	ESF	24 hr	E
MCR Isolation Valve	VBS-PL-191	3	ESF	24 hr	M
Limit Switch	VBS-PL-V191-L	3	PAMS	2 wks	E
Solenoid Valve	VBS-PL-V191-S	3	ESF	24 hr	E
Air Delivery Isolation Valve	VES-PL-V001	3	ESF	2 wks	M
Pressure Regulator Valve A	VES-PL-V002A	7	ESF	2 wks	M
Pressure Regulator Valve B	VES-PL-V002B	7	ESF	2 wks	M
Actuation Valve A	VES-PL-V005A	3	ESF	2 wks	M
Limit Switch	VES-PL-V005A-L	3	PAMS	2 wks	E
Solenoid Operator	VES-PL-V005A-S	3	ESF	2 wks	E
Actuation Valve B	VES-PL-V005B	3	ESF	2 wks	M
Limit Switch	VES-PL-V005B-L	3	PAMS	2 wks	E
Solenoid Operator	VES-PL-V005B-S	3	ESF	2 wks	E
Relief Isolation Valve A	VES-PL-V022A	3	ESF	2 wks	M
Limit Switch	VES-PL-V022A-L	3	PAMS	2 wks	E
Solenoid Valve	VES-PL-V022A-S	3	ESF	2 wks	E
Relief Isolation Valve B	VES-PL-V022B	3	ESF	2 wks	M
Limit Switch	VES-PL-V022B-L	3	PAMS	2 wks	E
Solenoid Valve	VES-PL-V022B-S	3	ESF	2 wks	E
Air Tank Relief A	VES-PL-V040A	7	ESF	2 wks	M
Air Tank Relief B	VES-PL-V040B	7	ESF	2 wks	M
Air Tank Relief A	VES-PL-V041A	7	ESF	2 wks	M
Air Tank Relief B	VES-PL-V041B	7	ESF	2 wks	M
Containment Purge Inlet Isolation	VFS-PL-V003	7	ESF	5 min	M S
Limit Switch	VFS-PL-V003-L	7	PAMS	2 wks	E
Solenoid Valve	VFS-PL-V003-S1	7	ESF	5 min	E
Containment Purge Inlet Isolation	VFS-PL-V004	1	ESF	5 min	M *
Limit Switch	VFS-PL-V004-L	1	PAMS	1 yr	E *
Solenoid Valve	VFS-PL-V004-S1	1	ESF	5 min	E *

Table 3.11-1 (Sheet 31 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Containment Purge Discharge Isolation	VFS-PL-V009	1	ESF	5 min	M *
Limit Switch	VFS-PL-V009-L	1	PAMS	1 yr	E *
Solenoid Valve	VFS-PL-V009-S1	1	ESF	5 min	E *
Containment Purge					
Discharge Isolation	VFS-PL-V010	6	ESF	5 min	M S **
Limit Switch	VFS-PL-V010-L	6	PAMS	2 wks	E **
Solenoid Valve	VFS-PL-V010-S1	6	ESF	5 min	E **
Fan Cooler Supply Isolation	VWS-PL-V058	2	ESF	5 min	M S
Limit Switch	VWS-PL-V058-L	2	PAMS	2 wks	E
Solenoid Valve	VWS-PL-V058-S	2	ESF	5 min	E
Fan Cooler Supply Isolation	VWS-PL-V062	1	ESF	5 min	M *
Fan Cooler Return Isolation	VWS-PL-V082	1	ESF	5 min	M *
Limit Switch	VWS-PL-V082-L	1	PAMS	1 yr	E *
Solenoid Valve	VWS-PL-V082-S	1	ESF	5 min	E *
Fan Cooler Return Isolation	VWS-PL-V086	2	ESF	5 min	M S
Limit Switch	VWS-PL-V086-L	2	PAMS	2 wks	E
Solenoid Valve	VWS-PL-V086-S	2	ESF	5 min	E
Sump Containment Isolation IRC	WLS-PL-V055	1	ESF	5 min	M *
Limit Switch	WLS-PL-V055-L	1	PAMS	1 yr	E *
Solenoid Valve	WLS-PL-V055-S1	1	ESF	5 min	E *
Sump Containment Isolation ORC	WLS-PL-V057	7	ESF	5 min	M S **
Limit Switch	WLS-PL-V057-L	7	PAMS	2 wks	E **
Solenoid Valve	WLS-PL-V057-S1	7	ESF	5 min	E **
RCDT Gas Containment Isolation	WLS-PL-V067	1	ESF	5 min	M *
Limit Switch	WLS-PL-V067-L	1	PAMS	1 yr	E *
Solenoid Valve	WLS-PL-V067-S	1	ESF	5 min	E *
RCDT Gas Containment Isolation	WLS-PL-V068	7	ESF	5 min	M S **
Limit Switch	WLS-PL-V068-L	7	PAMS	2 wks	E **
Solenoid Valve	WLS-PL-V068-S	7	ESF	5 min	E **
CVS To Sump	WLS-PL-V071 A	1	ESF	2 wks	M *
PXS A To Sump	WLS-PL-V071 B	1	ESF	2 wks	M *
PXS B To Sump	WLS-PL-V071 C	1	ESF	2 wks	M *
CVS To Sump	WLS-PL-V072 A	1	ESF	2 wks	M *
PXS A To Sump	WLS-PL-V072 B	1	ESF	2 wks	M *
PXS B To Sump	WLS-PL-V072 C	1	ESF	2 wks	M *

Table 3.11-1 (Sheet 32 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
MISCELLANEOUS					
Non-Active Valves					
Containment Penetration Test Connection Isolation	CAS-PL-V027	1	PB	1 yr	M*
Service Air Supply Outside Containment Isolation	CAS-PL-V204	2	PB	1 yr	M
Service Air Supply Inside Containment Isolation	CAS-PL-V205	1	PB	1 yr	M *
Containment Penetration Test Connection Isolation	CAS-PL-V219	1	PB	1 yr	M *
Containment Isolation Valve Test Connection – Outlet Line	CCS-PL-V209	1	PB	1 yr	M *
Containment Isolation Valve Test Connection – Inlet Line	CCS-PL-V257	2	PB	1 yr	M
Resin Flush IRC Isolation	CVS-PL-V040	1	PB	1 yr	M *
Resin Flush ORC Isolation	CVS-PL-V041	7	PB	1 yr	M **
Letdown PZR Instrument Root	CVS-PL-V046	7	PB	1 yr	M **
H2 Mkup Containment Isolation Thermal Relief Valve	CVS-PL-V065	1	PB	1 yr	M *
Hydrogen Add Cont Isolation Test Connection	CVS-Pl-V095	1	PB	1 yr	M *
Hydrogen Addition Containment Isolation Test Connection	CVS-PL-V096	1	PB	1 yr	M *
Demin Water Supply Containment Isolation – Outside	DWS-PL-V244	10	PB	1 yr	M *
Demin Water Supply Containment Isolation – Inside	DWS-PL-V245	1	PB	1 yr	M *
Containment Penetration Test Connection Isolation	DWS-PL-V248	10	PB	1 yr	M *
Fire Water Containment Test Connection Isolation	FPS-PL-V049	10	PB	1 yr	M *
Fire Water Containment Supply Isolation	FPS-PL-V050	10	PB	1 yr	M *
Fire Water Containment Test Connection Isolation	FPS-PL-V051	10	PB	1 yr	M *
Fire Water Containment Supply Isolation – Inside	FPS-PL-V052	1	PB	1 yr	M *

Table 3.11-1 (Sheet 33 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Flow Transmitter FT001 Root Valve	PCS-PL-V010A	9	PB	1 yr	M
Flow Transmitter FT001 Root Valve	PCS-PL-V010B	9	PB	1 yr	M
Flow Transmitter FT002 Root Valve	PCS-PL-V011A	9	PB	1 yr	M
Flow Transmitter FT001 Root Valve	PCS-PL-V011B	9	PB	1 yr	M
Flow Transmitter FT003 Root Valve	PCS-PL-V012A	9	PB	1 yr	M
Flow Transmitter FT003 Root Valve	PCS-PL-V012B	9	PB	1 yr	M
Flow Transmitter FT004 Root Valve	PCS-PL-V013A	9	PB	1 yr	M
Flow Transmitter FT004 Root Valve	PCS-PL-V013B	9	PB	1 yr	M
PCCWST Drain Isolation Valve	PCS-PL-V016	9	PB	1 yr	M
PCCWST Isolation Valve Leakage Detection Drain	PCS-PL-V029	9	PB	1 yr	M
PCCWST Isolation Valve Leakage Detection Crossconn	PCS-PL-V030	9	PB	1 yr	M
PCCWST Level Instrument Root Valve	PCS-PL-V031A	9	PB	1 yr	M
PCCWST Level Instrument Root Valve	PCS-PL-V031B	9	PB	1 yr	M
Recirculation Pump Suction from Long Term Makeup Isolation Valve	PCS-PL-V033	10	ESF	2 wks	M *
Hot Leg 1 Sample Isolation Limit Switch	PSS-PL-V001A PSS-PL-V001A-L	1 1	PB PAMS	1 yr 1 yr	M * E *
Hot Leg 2 Sample Isolation Limit Switch	PSS-PL-V001B PSS-PL-V001B-L	1 1	PB PAMS	1 yr 1 yr	M * E *
Pressurizer Sample Isolation	PSS-PL-V003	1	PB	1 yr	M *
PXS Accumulator Sample Isolation	PSS-PL-V004A	1	PB	1 yr	M *
PXS Accumulator Sample Isolation	PSS-PL-V004B	1	PB	1 yr	M *
PXS CMT A Sample Isolation	PSS-PL-V005A	1	PB	1 yr	M *
PXS CMT B Sample Isolation	PSS-PL-V005B	1	PB	1 yr	M *
PXC CMT A Sample Isolation	PSS-PL-V005C	1	PB	1 yr	M *
PXS CMT B Sample Isolation	PSS-PL-V005D	1	PB	1 yr	M *
Liquid Sample Check Valve	PSS-PL-V012A	1	PB	1 yr	M *
Liquid Sample Check Valve	PSS-PL-V012B	1	PB	1 yr	M *
Containment Testing Boundary Isolation Valve	PSS-PL-V076A	1	PB	1 yr	M *
Containment Testing Boundary Isolation Valve	PSS-PL-V076B	1	PB	1 yr	M *

Table 3.11-1 (Sheet 34 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Containment Isolation Test Connection Isolation Valve	PSS-PL-V082	1	PB	1 yr	M *
Containment Isolation Test Connection Isolation Valve	PSS-PL-V083	1	PB	1 yr	M *
Containment Isolation Test Connection Isolation Valve	PSS-PL-V085	1	PB	1 yr	M *
Containment Isolation Test Connection Isolation Valve	PSS-PL-V086	1	PB	1 yr	M *
MCR Potable Water Inlet Check Valve	PWS-PL-V418	3	PB	1 y	M
PWS MCR Isolation Valve	PWS-PL-V420	3	PB	1 yr	M
Core Makeup Tank A CL Inlet Isolation	PXS-PL-V002A	1	PB	1 yr	M *
Limit Switch	PXS-PL-V002A-L	1	PAMS	1 yr	E *
Motor Operator	PXS-PL-V002A-M	1	ESF	5 min	E *
Core Makeup Tank B CL Inlet Isolation	PXS-PL-V002B	1	PB	1 yr	M *
Limit Switch	PXS-PL-V002B-L	1	PAMS	1 yr	E *
Motor Operator	PXS-PL-V002B-M	1	ESF	5 min	E *
Core Makeup Tank A Upper Sample	PXS-PL-V010A	1	PB	1 yr	M *
Core Makeup Tank B Upper Sample	PXS-PL-V010B	1	PB	1 yr	M *
Core Makeup Tank A Lower Sample	PXS-PL-V011A	1	PB	1 yr	M *
Core Makeup Tank B Lower Sample	PXS-PL-V011B	1	PB	1 yr	M *
Core Makeup Tank A Drain	PXS-PL-V012A	1	PB	1 yr	M *
Core Makeup Tank B Drain	PXS-PL-V012B	1	PB	1 yr	M *
Core Makeup Tank Discharge Manual Isolation	PXS-PL-V013A	1	PB	1 yr	M *
Core Makeup Tank B Discharge Manual Isolation	PXS-PL-V013B	1	PB	1 yr	M *
Accumulator A N_2 Vent	PXS-PL-V021A	1	PB	1 yr	M *
Accumulator B N_2 Vent	PXS-PL-V021B	1	PB	1 yr	M *
Accumulator A PZR Transmitter Isolation	PXS-PL-V023A	1	PB	1 yr	M *
Accumulator B PZR Transmitter Isolation	PXS-PL-V023B	1	PB	1 yr	M *
Accumulator A PZR Transmitter Isolation	PXS-PL-V024A	1	PB	1 yr	M *
Accumulator B PZR Transmitter Isolation	PXS-PL-V024B	1	PB	1 yr	M *

Table 3.11-1 (Sheet 35 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Accumulator A Sample	PXS-PL-V025A	1	PB	1 yr	M *
Accumulator B Sample	PXS-PL-V025B	1	PB	1 yr	M *
Accumulator A Drain	PXS-PL-V026A	1	PB	1 yr	M *
Accumulator B Drain	PXS-PL-V026B	1	PB	1 yr	M *
Accumulator A Discharge Isolation	PXS-PL-V027A	1	PB	1 yr	M *
Accumulator B Discharge Isolation	PXS-PL-V027B	1	PB	1 yr	M *
Core Makeup Tank A Highpoint Vent	PXS-PL-V030A	1	PB	1 yr	M *
Core Makeup Tank B Highpoint Vent	PXS-PL-V030B	1	PB	1 yr	M *
Core Makeup Tank A Highpoint Vent	PXS-PL-V031A	1	PB	1 yr	M *
Core Makeup Tank B Highpoint Vent	PXS-PL-V031B	1	PB	1 yr	M *
Accumulator A Check Valve Drain	PXS-PL-V033A	1	PB	1 yr	M *
Accumulator B Check Valve Drain	PXS-PL-V033B	1	PB	1 yr	M *
Accumulator N_2 Containment Penetration Test Connection	PXS-PL-V052	1	PB	1 yr	M *
CMT A Wide Level Upper Root	PXS-PL-V080A	1	PB	1 yr	M *
CMT B Wide Level Upper Root	PXS-PL-V080B	1	PB	1 yr	M *
CMT A Wide Level Lower Root	PXS-PL-V081A	1	PB	1 yr	M *
CMT B Wide Level Lower Root	PXS-PL-V081B	1	PB	1 yr	M *
CMT A Upper Level A Isolation 1	PXS-PL-V082A	1	PB	1 yr	M *
CMT B Upper Level A Isolation 1	PXS-PL-V082B	1	PB	1 yr	M *
CMT A Upper Level A Isolation 2	PXS-PL-V083A	1	PB	1 yr	M *
CMT B Upper Level A Isolation 2	PXS-PL-V083B	1	PB	1 yr	M *
CMT A Upper Level A Vent	PXS-PL-V084A	1	PB	1 yr	M *
CMT B Upper Level A Vent	PXS-PL-V084B	1	PB	1 yr	M *
CMT A Upper Level A Drain	PXS-PL-V085A	1	PB	1 yr	M *
CMT B Upper Level A Drain	PXS-PL-V085B	1	PB	1 yr	M *
CMT A Upper Level B Isolation 1	PXS-PL-V086A	1	PB	1 yr	M *
CMT B Upper Level B Isolation 1	PXS-PL-V086B	1	PB	1 yr	M *
CMT A Upper Level B Isolation 2	PXS-PL-V087A	1	PB	1 yr	M *
CMT B Upper Level B Isolation 2	PXS-PL-V087B	1	PB	1 yr	M *
CMT A Upper Level B Vent	PXS-PL-V088A	1	PB	1 yr	M *
CMT B Upper Level B Vent	PXS-PL-V088B	1	PB	1 yr	M *
CMT A Upper Level B Drain	PXS-PL-V089A	1	PB	1 yr	M *
CMT B Upper Level B Drain	PXS-PL-V089B	1	PB	1 yr	M *
CMT A Lower Level A Isolation 1	PXS-PL-V092A	1	PB	1 yr	M *
CMT B Lower Level A Isolation 1	PXS-PL-V092B	1	PB	1 yr	M *

Table 3.11-1 (Sheet 36 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
CMT A Lower Level A Isolation 2	PXS-PL-V093A	1	PB	1 yr	M *
CMT B Lower Level A Isolation 2	PXS-PL-V093B	1	PB	1 yr	M *
CMT A Lower Level A Vent	PXS-PL-V094A	1	PB	1 yr	M *
CMT B Lower Level A Vent	PXS-PL-V094B	1	PB	1 yr	M *
CMT A Lower Level A Drain	PXS-PL-V095A	1	PB	1 yr	M *
CMT B Lower Level A Drain	PXS-PL-V095B	1	PB	1 yr	M *
CMT A Lower Level B Isolation 1	PXS-PL-V096A	1	PB	1 yr	M *
CMT B Lower Level B Isolation 1	PXS-PL-V096B	1	PB	1 yr	M *
CMT A Lower Level B Isolation 2	PXS-PL-V097A	1	PB	1 yr	M *
CMT B Lower Level B Isolation 2	PXS-PL-V097B	1	PB	1 yr	M *
CMT A Lower Level B Vent	PXS-PL-V098A	1	PB	1 yr	M *
CMT B Lower Level B Vent	PXS-PL-V098B	1	PB	1 yr	M *
CMT A Lower Level B Drain	PXS-PL-V099A	1	PB	1 yr	M *
CMT B Lower Level B Drain	PXS-PL-V099B	1	PB	1 yr	M *
PRHR HX Inlet Isolation	PXS-PL-V101	1	PB	1 yr	M *
Limit Switch	PXS-PL-V101-L	1	PAMS	1 yr	E *
Motor Operator	PXS-PL-V101-M	1	ESF	5 min	E *
PRHR HX Inlet Head Vent	PXS-PL-V102A	1	PB	1 yr	M *
PRHR HX Inlet Head Drain	PXS-PL-V102B	1	PB	1 yr	M *
PRHR HX Outlet Head Vent	PXS-PL-V103A	1	PB	1 yr	M *
PRHR HX Outlet Head Drain	PXS-PL-V103B	1	PB	1 yr	M *
PRHR HX Flow Transmitter A Isolation	PXS-PL-V104A	1	PB	1 yr	M *
PRHR HX Flow Transmitter B Isolation	PXS-PL-V104B	1	PB	1 yr	M *
PRHR HX Flow Transmitter A Isolation	PXS-PL-V105A	1	PB	1 yr	M *
PRHR HX Flow Transmitter B Isolation	PXS-PL-V105B	1	PB	1 yr	M *
PRHR HX/RCS Return Isolation	PXS-PL-V109	1	PB	1 yr	M *
PRHR HX Highpoint Vent	PXS-PL-V111A	1	PB	1 yr	M *
PRHR HX Highpoint Vent	PXS-PL-V111B	1	PB	1 yr	M *
PRHR HX PZR Transmitter Isolation	PXS-PL-V113	1	PB	1 yr	M *
IRWST Line A Isolation	PXS-PL-V121A	1	PB	1 yr	M *
IRWST Line B Isolation	PXS-PL-V121B	1	PB	1 yr	M *

Table 3.11-1 (Sheet 37 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
IRWST Injection Check Test	PXS-PL-V126A	1	PB	1 yr	M *
IRWST Injection Check Test	PXS-PL-V126B	1	PB	1 yr	M *
IRWST Injection Check Test	PXS-PL-V128A	1	PB	1 yr	M *
IRWST Injection Check Test	PXS-PL-V128B	1	PB	1 yr	M *
IRWST Injection Check Test	PXS-PL-V129A	1	PB	1 yr	M *
IRWST Injection Check Test	PXS-PL-V129B	1	PB	1 yr	M *
IRWST Level Transmitter A Isolation	PXS-PL-V150A	1	PB	1 yr	M *
IRWST Level Transmitter B Isolation	PXS-PL-V150B	1	PB	1 yr	M *
IRWST Level Transmitter C Isolation	PXS-PL-V150C	1	PB	1 yr	M *
IRWST Level Transmitter D Isolation	PXS-PL-V150D	1	PB	1 yr	M *
IRWST Level Transmitter A Isolation	PXS-PL-V151A	1	PB	1 yr	M *
IRWST Level Transmitter B Isolation	PXS-PL-V151B	1	PB	1 yr	M *
IRWST Level Transmitter C Isolation	PXS-PL-V151C	1	PB	1 yr	M *
IRWST Level Transmitter D Isolation	PXS-PL-V151D	1	PB	1 yr	M *
Accumulator A Leak Test	PXS-PL-V201A	1	PB	1 yr	M *
Accumulator B Leak Test	PXS-PL-V201B	1	PB	1 yr	M *
Accumulator A Leak Test	PXS-PL-V202A	1	PB	1 yr	M *
Accumulator B Leak Test	PXS-PL-V202B	1	PB	1 yr	M *
RNS Discharge Leak Test	PXS-PL-V205A	1	PB	1 yr	M *
RNS Discharge Leak Test	PXS-PL-V205B	1	PB	1 yr	M *
RNS Discharge Leak Test	PXS-PL-V206	1	PB	1 yr	M *
RNS Suction Leak Test	PXS-PL-V207A	1	PB	1 yr	M *
RNS Suction Leak Test	PXS-PL-V207B	1	PB	1 yr	M *
RNS Suction Leak Test	PXS-PL-V208A	1	PB	1 yr	M *
Core Makeup Tank A Fill Isolation	PXS-PL-V230A	1	PB	1 yr	M *
Core Makeup Tank B Fill Isolation	PXS-PL-V230B	1	PB	1 yr	M *
Core Makeup Tank A Fill Check	PXS-PL-V231A	1	PB	1 yr	M *
Core Makeup Tank B Fill Check	PXS-PL-V231B	1	PB	1 yr	M *

Table 3.11-1 (Sheet 38 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Accumulator A Fill/Drain Isolation	PXS-PL-V232A	1	PB	1 yr	M *
Accumulator B Fill/Drain Isolation	PXS-PL-V232B	1	PB	1 yr	M *
ADS Test Valve	RCS-PL-V007A	1	PB	1 yr	M *
ADS Test Valve	RCS-PL-V007B	1	PB	1 yr	M *
Fourth Stage ADS Isolation	RCS-PL-V014A	1	PB	1 yr	M *
Limit Switch	RCS-PL-V014A-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V014A-M	1	ESF	24 hr	E *
Fourth Stage ADS Isolation	RCS-PL-V014B	1	PB	1 yr	M *
Limit Switch	RCS-PL-V014B-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V014B-M	1	ESF	24 hr	E *
Fourth Stage ADS Isolation	RCS-PL-V014C	1	PB	1 yr	M *
Limit Switch	RCS-PL-V014C-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V014C-M	1	ESF	24 hr	E *
Fourth Stage ADS Isolation	RCS-PL-V014D	1	PB	1 yr	M *
Limit Switch	RCS-PL-V014D-L	1	PAMS	1 yr	E *
Motor Operator	RCS-PL-V014D-M	1	ESF	24 hr	E *
Hot Leg 2 Level Instrument Root	RCS-PL-V095	1	PB	1 yr	M *
Hot Leg 2 Level Instrument Root	RCS-PL-V096	1	PB	1 yr	M *
Hot Leg 1 Level Instrument Root	RCS-PL-V097	1	PB	1 yr	M *
Hot Leg 1 Level Instrument Root	RCS-PL-V098	1	PB	1 yr	M *
Hot Leg 1 Flow Instrument Root	RCS-PL-V101A	1	PB	1 yr	M *
Hot Leg 1 Flow Instrument Root	RCS-PL-V101B	1	PB	1 yr	M *
Hot Leg 1 Flow Instrument Root	RCS-PL-V101C	1	PB	1 yr	M *
Hot Leg 1 Flow Instrument Root	RCS-PL-V101D	1	PB	1 yr	M *
Hot Leg 1 Flow Instrument Root	RCS-PL-V101E	1	PB	1 yr	M *
Hot Leg 1 Flow Instrument Root	RCS-PL-V101F	1	PB	1 yr	M *
Hot Leg 2 Flow Instrument Root	RCS-PL-V102A	1	PB	1 yr	M *
Hot Leg 2 Flow Instrument Root	RCS-PL-V102B	1	PB	1 yr	M *

Table 3.11-1 (Sheet 39 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Hot Leg 2 Flow Instrument Root	RCS-PL-V102C	1	PB	1 yr	M *
Hot Leg 2Flow Instrument Root	RCS-PL-V102D	1	PB	1 yr	M *
Hot Leg 2 Flow Instrument Root	RCS-PL-V102E	1	PB	1 yr	M *
Hot Leg 2 Flow Instrument Root	RCS-PL-V102F	1	PB	1 yr	M *
Hot Leg 1 Sample Isolation	RCS-PL-V108A	1	PB	1 yr	M *
Hot Leg 2 Sample Isolation	RCS-PL-V108B	1	PB	1 yr	M *
PZR Spray Valve	RCS-PL-V110A	1	PB	1 yr	M *
PZR Spray Valve	RCS-PL-V110B	1	PB	1 yr	M *
PZR Spray Block Valve	RCS-PL-V111A	1	PB	1 yr	M *
PZR Spray Block Valve	RCS-PL-V111B	1	PB	1 yr	M *
Cold Leg 1A Bend Instrument Root	RCS-PL-V171A	1	PB	1 yr	M *
Cold Leg 1A Bend Instrument Root	RCS-PL-V171B	1	PB	1 yr	M *
Cold Leg 1B Bend Instrument Root	RCS-PL-V172A	1	PB	1 yr	M *
Cold Leg 1B Bend Instrument Root	RCS-PL-V172B	1	PB	1 yr	M *
Cold Leg 2A Bend Instrument Root	RCS-PL-V173A	1	PB	1 yr	M *
Cold Leg 2A Bend Instrument Root	RCS-PL-V173B	1	PB	1 yr	M *
Cold Leg 2B Bend Instrument Root	RCS-PL-V174A	1	PB	1 yr	M *
Cold Leg 2B Bend Instrument Root	RCS-PL-V174B	1	PB	1 yr	M *
PZR Manual Vent	RCS-PL-V204	1	PB	1 yr	M *
PZR Manual Vent	RCS-PL-V205	1	PB	1 yr	M *
PZR Spray Bypass	RCS-PL-V210A	1	PB	1 yr	M *
PZR Spray Bypass	RCS-PL-V210B	1	PB	1 yr	M *
PZR Level Steam Space Instrument Root	RCS-PL-V225A	1	PB	1 yr	M *
PZR Level Steam Space Instrument Root	RCS-PL-V225B	1	PB	1 yr	M *
PZR Level Steam Space Instrument Root	RCS-PL-V225C	1	PB	1 yr	M *
PZR Level Steam Space Instrument Root	RCS-PL-V225D	1	PB	1 yr	M *
PZR Level Liquid Space Instrument Root	RCS-PL-V226A	1	PB	1 yr	M *

Table 3.11-1 (Sheet 40 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
PZR Level Liquid Space Instrument Root	RCS-PL-V226B	1	PB	1 yr	M *
PZR Level Liquid Space Instrument Root	RCS-PL-V226C	1	PB	1 yr	M *
PZR Level Liquid Space Instrument Root	RCS-PL-V226D	1	PB	1 yr	M *
Wide Range PZR Level Steam Space Instrument Root	RCS-PL-V228	1	PB	1 yr	M *
Wide Range PZR Level Liquid Space Instrument Root	RCS-PL-V229	1	PB	1 yr	M *
Manual Head Vent	RCS-PL-V232	1	PB	1 yr	M *
Head Vent Isolation	RCS-PL-V233	1	PB	1 yr	M *
ADS Valve Discharge Header Drain Isolation	RCS-PL-V241	1	PB	1 yr	M *
RCP 1A Flush	RCS-PL-V260A	1	PB	1 yr	M *
RCP 1B Flush	RCS-PL-V260B	1	PB	1 yr	M *
RCP 2A Flush	RCS-PL-V260C	1	PB	1 yr	M *
RCP 2B Flush	RCS-PL-V260D	1	PB	1 yr	M *
RCP 1A Drain	RCS-PL-V261A	1	PB	1 yr	M *
RCP 1B Drain	RCS-PL-V261B	1	PB	1 yr	M *
RCP 2A Drain	RCS-PL-V261C	1	PB	1 yr	M *
RCP 2B Drain	RCS-PL-V261D	1	PB	1 yr	M *
RCS Pressure Boundary Valve Thermal Relief Isolation	RNS-PL-V004A	1	PB	1 yr	M *
RCS Pressure Boundary Valve Thermal Relief Isolation	RNS-PL-V004B	1	PB	1 yr	M *
RNS Pump A Suction Isolation	RNS-PL-V005A	6	PB	1 yr	M **
RNS Pump B Suction Isolation	RNS-PL-V005B	6	PB	1 yr	M **
RNS HX A Outlet Flow Control	RNS-PL-V006A	6	PB	1 yr	M **
RNS HX B Outlet Flow Control	RNS-PL-V006B	6	PB	1 yr	M **
RNS Pump A Discharge Isolation	RNS-PL-V007A	6	PB	1 yr	M **
RNS Pump B Discharge Isolation	RNS-PL-V007B	6	PB	1 yr	M **
RNS HX A Bypass Flow Control	RNS-PL-V008A	6	PB	1 yr	M **
RNS HX B Bypass Flow Control	RNS-PL-V008B	6	PB	1 yr	M **
RNS Discharge Containment Isolation Valve Test	RNS-PL-V010	6	PB	1 yr	M **

Table 3.11-1 (Sheet 41 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
RNS Discharge Containment Isolation Valve Test Connection, ORC	RNS-PL-V012	6	PB	1 yr	M **
RNS Discharge Containment Isolation Valve Test Connection	RNS-PL-V014	1	PB	1 yr	M *
RNS Discharge Containment Penetration Isolation Valves Test	RNS-PL-V016	1	PB	1 yr	M *
RNS Discharge to IRWST Isolation	RNS-PL-V024	1	PB	1 yr	M *
RNS Discharge to CVS	RNS-PL-V029	1	PB	1 yr	M *
RNS Train A Discharge Flow Instrument Isolation	RNS-PL-V031A	6	PB	1 yr	M **
RNS Train B Discharge Flow Instrument Isolation	RNS-PL-V031B	6	PB	1 yr	M **
RNS Train A Discharge Flow Instrument Isolation	RNS-PL-V032A	6	PB	1 yr	M **
RNS Train B Discharge Flow Instrument Isolation	RNS-PL-V032B	6	PB	1 yr	M **
RNS Pump A Suction Pressure Instrument Isolation	RNS-PL-V033A	6	PB	1 yr	M **
RNS Pump B Suction Pressure Instrument Isolation	RNS-PL-V033B	6	PB	1 yr	M **
RNS Pump A Discharge Pressure Instrument Isolation	RNS-PL-V034A	6	PB	1 yr	M **
RNS Pump B Discharge Pressure Instrument Isolation	RNS-PL-V034B	6	PB	1 yr	M **
RNS Pump A Suction Piping Drain Isolation	RNS-PL-V036A	6	PB	1 yr	M **
RNS Pump B Suction Piping Drain Isolation	RNS-PL-V036B	6	PB	1 yr	M **
RNS Pump Discharge Relief	RNS-PL-V045	6	PB	1 yr	M **
RNS HX B Channel Head Drain Isolation	RNS-PL-V046B	6	PB	1 yr	M **
RNS Pump A Casing Drain Isolation	RNS-PL-V050	6	PB	1 yr	M **
RNS Pump B Casing Drain Isolation	RNS-PL-V051	6	PB	1 yr	M **
RNS Suction from SFP Isolation	RNS-PL-V052	6	PB	1 yr	M **
RNS Discharge to SFP Isolation	RNS-PL-V053	6	PB	1 yr	M **

Table 3.11-1 (Sheet 42 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
RNS Suction from Cask Loading Pit Isolation Valve	RNS-PL-V055	6	PB	1 yr	M **
RNS Pump Suction to Cask Loading Pit Isolation	RNS-PL-V056	6	PB	1 yr	M **
RNS Train A Miniflow Isolation Valve	RNS-PL-V057A	6	PB	1 yr	M **
RNS Train B Miniflow Isolation Valve	RNS-PL-V057B	6	PB	1 yr	M **
RNS Pump Suction Containment Isolation Test Connection	RNS-PL-V059	6	PB	1 yr	M **
LT019A Root Isolation Valve	SFS-PL-V024A	6	PB	1 yr	M **
LT019B Root Isolation Valve	SFS-PL-V024B	6	PB	1 yr	M **
LT019C Root Isolation Valve	SFS-PL-V024C	6	PB	1 yr	M **
LT020 Root Isolation Valve	SFS-PL-V028	6	PB	1 yr	M **
SFS Refueling Cavity Drain To SGS Compartment Isolation	SFS-PL-V031	1	PB	1 yr	M *
SFS Refueling Cavity Suction Isolation	SFS-PL-V032	1	PB	1 yr	M *
SFS Refueling Cavity Drain to Containment Sump Isolation	SFS-PL-V033	1	PB	1 yr	M *
SFS Suction Line from IRWST Isolation	SFS-PL-V039	1	PB	1 yr	M *
SFS Fuel Transfer Canal Suction Isolation	SFS-PL-V040	6	PB	1 yr	M **
SFS Cask Loading Pit Suction Isolation	SFS-PL-V041	6	PB	1 yr	M **
SFS Cask Loading Pit to Pumps Suction Isolation	SFS-PL-V042	6	PB	1 yr	M **
SFS CVS Makeup Reverse Flow Prevention	SFS-PL-V043	6	PB	1 yr	M **
SFS Discharge Line to Cask Loading Pit Isolation	SFS-PL-V045	6	PB	1 yr	M **
SFS Containment Penetration Test Connection	SFS-PL-V048	6	PB	1 yr	M **
SFS Cask Loading Pit Drain to WLS Isolation	SFS-PL-V049	6	PB	1 yr	M **
SFS Containment Penetration Test Connection Isolation	SFS-PL-V056	1	PB	1 yr	M *

Table 3.11-1 (Sheet 43 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
SFS Containment Isolation Valve V034 Test	SFS-PL-V058	1	PB	1 yr	M *
LT001 Root Isolation Valve	SGS-PL-V001A	1	PB	1 yr	M *
LT005 Root Isolation Valve	SGS-PL-V001B	1	PB	1 yr	M *
LT001 Root Isolation Valve	SGS-PL-V002A	1	PB	1 yr	M *
LT005 Root Isolation Valve	SGS-PL-V002B	1	PB	1 yr	M *
LT002 Root Isolation Valve	SGS-PL-V003A	1	PB	1 yr	M *
LT006 Root Isolation Valve	SGS-PL-V003B	1	PB	1 yr	M *
LT002 Root Isolation Valve	SGS-PL-V004A	1	PB	1 yr	M *
LT006 Root Isolation Valve	SGS-PL-V004B	1	PB	1 yr	M *
LT003 Root Isolation Valve	SGS-PL-V005A	1	PB	1 yr	M *
LT007 Root Isolation Valve	SGS-PL-V005B	1	PB	1 yr	M *
LT003 Root Isolation Valve	SGS-PL-V006A	1	PB	1 yr	M *
LT007 Root Isolation Valve	SGS-PL-V006B	1	PB	1 yr	M *
LT004 Root Isolation Valve	SGS-PL-V007A	1	PB	1 yr	M *
LT008 Root Isolation Valve	SGS-PL-V007B	1	PB	1 yr	M *
LT004 Root Isolation Valve	SGS-PL-V008A	1	PB	1 yr	M *
LT008 Root Isolation Valve	SGS-PL-V008B	1	PB	1 yr	M *
LT011 Root Isolation Valve	SGS-PL-V010A	1	PB	1 yr	M*
LT013 Root Isolation Valve	SGS-PL-V010B	1	PB	1 yr	M *
LT011 Root Isolation Valve	SGS-PL-V011A	1	PB	1 yr	M *
LT013 Root Isolation Valve	SGS-PL-V011B	1	PB	1 yr	M *
LT012 Root Isolation Valve	SGS-PL-V012A	1	PB	1 yr	M *
LT014 Root Isolation Valve	SGS-PL-V012B	1	PB	1 yr	M *
LT012 Root Isolation Valve	SGS-PL-V013A	1	PB	1 yr	M *
LT014 Root Isolation Valve	SGS-PL-V013B	1	PB	1 yr	M *
FT021 Root Isolation Valve	SGS-PL-V015A	1	PB	1 yr	M *
FT023 Root Isolation Valve	SGS-PL-V015B	1	PB	1 yr	M *
FT020 Root Isolation Valve	SGS-PL-V016A	1	PB	1 yr	M *
FT022 Root Isolation Valve	SGS-PL-V016B	1	PB	1 yr	M *
FT021 Root Isolation Valve	SGS-PL-V017A	1	PB	1 yr	M *
FT023 Root Isolation Valve	SGS-PL-V017B	1	PB	1 yr	M *
FT020 Root Isolation Valve	SGS-PL-V018A	1	PB	1 yr	M *
FT022 Root Isolation Valve	SGS-PL-V018B	1	PB	1 yr	M *
Main Steamline Vent Isolation	SGS-PL-V019A	1	PB	1 yr	M *
Main Steamline Vent Isolation	SGS-PL-V019B	1	PB	1 yr	M *

Table 3.11-1 (Sheet 44 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
PT030 Root Isolation Valve	SGS-PL-V022A	1	PB	1 yr	M *
PT034 Root Isolation Valve	SGS-PL-V022B	1	PB	1 yr	M *
PT031 Root Isolation Valve	SGS-PL-V023A	5	PB	1 yr	M *
PT035 Root Isolation Valve	SGS-PL-V023B	5	PB	1 yr	M *
PT032 Root Isolation Valve	SGS-PL-V024A	1	PB	1 yr	M *
PT036 Root Isolation Valve	SGS-PL-V024B	1	PB	1 yr	M *
PT033 Root Isolation Valve	SGS-PL-V025A	5	PB	1 yr	M *
PT037 Root Isolation Valve	SGS-PL-V025B	5	PB	1 yr	M *
Steamline 1 Nitrogen Supply Isolation	SGS-PL-V038A	5	PB	1 yr	M *
Steamline 2 Nitrogen Supply Isolation	SGS-PL-V038B	5	PB	1 yr	M *
MSIV Bypass Control Isolation	SGS-PL-V042A	5	PB	1 yr	M *
MSIV Bypass Control Isolation	SGS-PL-V042B	5	PB	1 yr	M *
MSIV Bypass Control Isolation	SGS-PL-V043A	5	PB	1 yr	M *
MSIV Bypass Control Isolation	SGS-PL-V043B	5	PB	1 yr	M *
SG1 Condensate Pipe Drain Valve	SGS-PL-V045A	5	PB	1 yr	M *
SG2 Condensate Pipe Drain Valve	SGS-PL-V045B	5	PB	1 yr	M *
LT015 Root Isolation Valve	SGS-PL-V046A	1	PB	1 yr	M *
LT017 Root Isolation Valve	SGS-PL-V046B	1	PB	1 yr	M *
LT015 Root Isolation Valve	SGS-PL-V047A	1	PB	1 yr	M *
LT017 Root Isolation Valve	SGS-PL-V047B	1	PB	1 yr	M *
LT016 Root Isolation Valve	SGS-PL-V048A	1	PB	1 yr	M *
LT018 Root Isolation Valve	SGS-PL-V048B	1	PB	1 yr	M *
LT016 Root Isolation Valve	SGS-PL-V049A	1	PB	1 yr	M *
LT018 Root Isolation Valve	SGS-PL-V049B	1	PB	1 yr	M *
LT044 Root Isolation Valve	SGS-PL-V050A	1	PB	1 yr	M *
LT046 Root Isolation Valve	SGS-PL-V050B	1	PB	1 yr	M *
LT044 Root Isolation Valve	SGS-PL-V051A	1	PB	1 yr	M *
LT046 Root Isolation Valve	SGS-PL-V051B	1	PB	1 yr	M *
LT045 Root Isolation Valve	SGS-PL-V052A	1	PB	1 yr	M *
LT047 Root Isolation Valve	SGS-PL-V052B	1	PB	1 yr	M *
LT045 Root Isolation Valve	SGS-PL-V053A	1	PB	1 yr	M *
LT047 Root Isolation Valve	SGS-PL-V053B	1	PB	1 yr	M *
PT062 Root Isolation Valve	SGS-PL-V056A	5	PB	1 yr	M *
PT063 Root Isolation Valve	SGS-PL-V056B	5	PB	1 yr	M *

Table 3.11-1 (Sheet 45 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Main Feedwater Check	SGS-PL-V058A	5	PB	1 yr	M *
Main Feedwater Check	SGS-PL-V058B	5	PB	1 yr	M *
FT055A Root Isolation Valve	SGS-PL-V062A	5	PB	1 yr	M *
FT056A Root Isolation Valve	SGS-PL-V062B	5	PB	1 yr	M *
FT055A Root Isolation Valve	SGS-PL-V063A	5	PB	1 yr	M *
FT056A Root Isolation Valve	SGS-PL-V063B	5	PB	1 yr	M *
FT055A Root Isolation Valve	SGS-PL-V064A	5	PB	1 yr	M *
FT056A Root Isolation Valve	SGS-PL-V064B	5	PB	1 yr	M *
FT055A Root Isolation Valve	SGS-PL-V065A	5	PB	1 yr	M *
FT056A Root Isolation Valve	SGS-PL-V065B	5	PB	1 yr	M *
SG1 Nitrogen Sparging Isolation	SGS-PL-V084A	1	PB	1 yr	M *
SG2 Nitrogen Sparging Isolation	SGS-PL-V084B	1	PB	1 yr	M *
Orifice Isolation Valve	SGS-PL-V093A	5	PB	1 yr	M *
Orifice Isolation Valve	SGS-PL-V093B	5	PB	1 yr	M *
Orifice Cleanout Line Isolation Valve	SGS-PL-V094A	5	PB	1 yr	M *
Orifice Cleanout Line Isolation Valve	SGS-PL-V094B	5	PB	1 yr	M *
Orifice Isolation Valve	SGS-PL-V095A	5	PB	1 yr	M *
Orifice Isolation Valve	SGS-PL-V095B	5	PB	1 yr	M *
Steamline Condensate Drain Level Isolation Valve	SGS-PL-V096A	5	PB	1 yr	M *
Steamline Condensate Drain Level Isolation Valve	SGS-PL-V096B	5	PB	1 yr	M *
Steamline Condensate Drain Level Isolation Valve	SGS-PL-V097A	5	PB	1 yr	M *
Steamline Condensate Drain Level Isolation Valve	SGS-PL-V097B	5	PB	1 yr	M *
Startup Feedwater Check Valve	SGS-PL-V256A	5	PB	1 yr	M *
Startup Feedwater Check Valve	SGS-PL-V256B	5	PB	1 yr	M *
Test Connection Shutoff for MCR Inlet Isolation Valve V186	VBS-PL-V164	3	PB	1 yr	M
Test Connection Shutoff for MCR Inlet Isolation Valve V187	VBS-PL-V165	3	PB	1 yr	M
Test Connection Shutoff for MCR Inlet Isolation Valve V188	VBS-PL-V166	3	PB	1 yr	M
Test Connection Shutoff for MCR Inlet Isolation Valve V189	VBS-PL-V167	3	PB	1 yr	M
Test Connection Shutoff for MCR Inlet Isolation Valve V190	VBS-PL-V168	3	PB	1 yr	M

Table 3.11-1 (Sheet 46 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Test Connection Shutoff for MCR Inlet Isolation Valve V191	VBS-PL-V169	3	PB	1 yr	M
Air Delivery Line Pressure Instrument Isolation Valve A	VES-PL-V006A	7	PB	1 yr	M
Air Delivery Line Pressure Instrument Isolation Valve B	VES-PL-V006B	7	PB	1 yr	M
Temporary Instrument Isolation Valve A	VES-PL-V016	7	PB	1 yr	M
Temporary Instrument Isolation Valve A	VES-PL-V018	7	PB	1 yr	M
Temporary Instrument Isolation Valve B	VES-PL-V019	7	PB	1 yr	M
Temporary Instrument Isolation Valve B	VES-PL-V020	7	PB	1 yr	M
Air Tank Isolation Valve A	VES-PL-V024A	7	PB	1 yr	M
Air Tank Isolation Valve B	VES-PL-V024B	7	PB	1 yr	M
Air Tank Isolation Valve A	VES-PL-V025A	7	PB	1 yr	M
Air Tank Isolation Valve B	VES-PL-V025B	7	PB	1 yr	M
Refill Line Isolation Valve	VES-PL-V038	7	PB	1 yr	M
DP Instrument Line Isolation Valve A	VES-PL-V043A	3	PB	1 yr	M
DP Instrument Line Isolation Valve B	VES-PL-V043B	3	PB	1 yr	M
Main Air Flow Path Isolation Valve	VES-PL-V044	3	PB	1 yr	M
Containment Isolation Test Connection	VFS-PL-V001	7	PB	1 yr	M
Containment Isolation Test Connection	VFS-PL-V002	1	PB	1 yr	M *
Containment Isolation Test Connection	VFS-PL-V006	1	PB	1 yr	M *
Containment Isolation Test Connection	VFS-PL-V007	6	PB	1 yr	M **
Containment Isolation Test Connection	VFS-PL-V008	6	PB	1 yr	M **
Containment Isolation Test Connection	VFS-PL-V012	1	PB	1 yr	M *
Containment Isolation Test Connection	VFS-PL-V015	1	PB	1 yr	M *
Main Equipment Hatch Test Connection	VUS-PL-V015	7	PB	1 yr	M
Maintenance Equipment Hatch Test Connection	VUS-PL-V016	7	PB	1 yr	M
Personnel Hatch Test Connection	VUS-PL-V017	7	PB	1 yr	M
Personnel Hatch Test Connection	VUS-PL-V018	7	PB	1 yr	M
Personnel Hatch Test Connection	VUS-PL-V019	7	PB	1 yr	M
Personnel Hatch Test Connection	VUS-PL-V020	7	PB	1 yr	M

Table 3.11-1 (Sheet 47 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Personnel Hatch Test Connection	VUS-PL-V021	7	PB	1 yr	M
Personnel Hatch Test Connection	VUS-PL-V022	7	PB	1 yr	M
Fuel Transfer Tube Test Connection	VUS-PL-V023	7	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V101	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V102	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V103	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V104	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V105	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V106	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V107	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V108	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V109	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V110	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V111	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V112	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V113	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V114	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V115	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V116	4	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V117	4	PB	1 yr	M

Table 3.11-1 (Sheet 48 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Electrical Penetration Test Isolation Valve	VUS-PL-V118	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V119	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V120	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V121	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V122	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V123	2	PB	1 yr	M
Electrical Penetration Test Isolation Valve	VUS-PL-V124	4	PB	1 yr	M
Spare Penetration Test Connection	VUS-PL-V140	6	PB	1 yr	M **
Spare Penetration Test Connection	VUS-PL-V141	6	PB	1 yr	M **
Spare Penetration Test Connection	VUS-PL-V142	6	PB	1 yr	M **
VWS Supply Containment Penetration IRC Test Connection/Vent	VWS-PL-V424	1	PB	1 yr	M *
VWS Return Containment Penetration ORC Test Connection/Vent	VWS-PL-V425	2	PB	1 yr	M
Heat Exchangers					
Normal Residual Heat Removal Heat Exchanger A	RNS-ME-01A	6	PB	1 yr	M **
Normal Residual Heat Removal Heat Exchanger B	RNS-ME-01B	6	PB	1 yr	M **
Tanks					
Spent Fuel Pool	FHS-MT-01	11	ESF	1 yr	M **
Fuel Transfer Canal	FHS-MT-02	11	ESF	1 yr	M **
Spent Fuel Cask Loading Pit	FHS-MT-05	6	ESF	1 yr	M **
Passive Containment Cooling Water Storage Tank	PCS-MT-01	9	ESF	1 yr	M
Water Distribution Bucket	PCS-MT-03	9	ESF	1 yr	M
Water Collection Troughs	PCS-MT-04	9	ESF	1 yr	M
Passive RHR Heat Exchanger	PXS-ME-01	1	ESF	1 yr	M *

Table 3.11-1 (Sheet 49 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Accumulator Tank A	PXS-MT-01A	1	ESF	1 yr	M *
Accumulator Tank B	PXS-MT-01B	1	ESF	1 yr	M *
Core Makeup Tank A	PXS-MT-02A	1	ESF	1 yr	M *
Core Makeup Tank B	PXS-MT-02B	1	ESF	1 yr	M *
In-Containment Refueling Water Storage Tank	PXS-MT-03	1	ESF	1 yr	M *
Emergency Air Storage Tank 01	VES-MT-01	7	ESF	1 yr	M
Emergency Air Storage Tank 02	VES-MT-02	7	ESF	1 yr	M
Emergency Air Storage Tank 03	VES-MT-03	7	ESF	1 yr	M
Emergency Air Storage Tank 04	VES-MT-04	7	ESF	1 yr	M
Emergency Air Storage Tank 05	VES-MT-05	7	ESF	1 yr	M
Emergency Air Storage Tank 06	VES-MT-06	7	ESF	1 yr	M
Emergency Air Storage Tank 07	VES-MT-07	7	ESF	1 yr	M
Emergency Air Storage Tank 08	VES-MT-08	7	ESF	1 yr	M
Emergency Air Storage Tank 09	VES-MT-09	7	ESF	1 yr	M
Emergency Air Storage Tank 10	VES-MT-10	7	ESF	1 yr	M
Emergency Air Storage Tank 11	VES-MT-11	7	ESF	1 yr	M
Emergency Air Storage Tank 12	VES-MT-12	7	ESF	1 yr	M
Emergency Air Storage Tank 13	VES-MT-13	7	ESF	1 yr	M
Emergency Air Storage Tank 14	VES-MT-14	7	ESF	1 yr	M
Emergency Air Storage Tank 15	VES-MT-15	7	ESF	1 yr	M
Emergency Air Storage Tank 16	VES-MT-16	7	ESF	1 yr	M
Emergency Air Storage Tank 17	VES-MT-17	7	ESF	1 yr	M
Emergency Air Storage Tank 18	VES-MT-18	7	ESF	1 yr	M
Emergency Air Storage Tank 19	VES-MT-19	7	ESF	1 yr	M
Emergency Air Storage Tank 20	VES-MT-20	7	ESF	1 yr	M
Emergency Air Storage Tank 21	VES-MT-21	7	ESF	1 yr	M
Emergency Air Storage Tank 22	VES-MT-22	7	ESF	1 yr	M
Emergency Air Storage Tank 23	VES-MT-23	7	ESF	1 yr	M
Emergency Air Storage Tank 24	VES-MT-24	7	ESF	1 yr	M
Emergency Air Storage Tank 25	VES-MT-25	7	ESF	1 yr	M
Emergency Air Storage Tank 26	VES-MT-26	7	ESF	1 yr	M
Emergency Air Storage Tank 27	VES-MT-27	7	ESF	1 yr	M
Emergency Air Storage Tank 28	VES-MT-28	7	ESF	1 yr	M
Emergency Air Storage Tank 29	VES-MT-29	7	ESF	1 yr	M
Emergency Air Storage Tank 30	VES-MT-30	7	ESF	1 yr	M

Table 3.11-1 (Sheet 50 of 50)

ENVIRONMENTALLY QUALIFIED ELECTRICAL AND MECHANICAL EQUIPMENT

Description	AP1000 Tag No.	Envir. Zone (Note 2)	Function (Note 1)	Operating Time Required (Note 5)	Qualification Program (Note 6)
Emergency Air Storage Tank 31	VES-MT-31	7	ESF	1 yr	M
Emergency Air Storage Tank 32	VES-MT-32	7	ESF	1 yr	M
Main Feed Pump A Status	ECS-ES-3-XXX	8	PAMS	2 wks	E +
Main Feed Pump B Status	ECS-ES-4-XXX	8	PAMS	2 wks	E +
Main Feed Pump C Status	ECS-ES-5-XXX	8	PAMS	2 wks	E+

Notes:

1. RT (Reactor Trip), ESF (Engineered Safeguards Feature), PAMS (Post-Accident Monitoring), ISOL (Isolation), PB (Pressure Boundary); all active valves in this table have "PB-1 yr" in addition to any other requirements.
2. Zones identified in Table 3D.5-1
3. Not required post-accident
4. Note deleted
5. Reference Table 3D.4-2
6. E = Electrical Equipment Program
   M = Mechanical Equipment Program
   * = Harsh Environment
   ** = Radiation-Harsh Environment (See Appendix 3D, Section 3D.4.3.)
   + = Seismic Qualification not required
   S = Qualified for operation with spray from a moderate-energy pipe crack or spray from a cold high energy pipe crack.
7. The Protection and Safety Monitoring Cabinets will be qualified to meet the function operating times identified in this table.