Sargent & Lundy LLC

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Northeast Nuclear Energy Company
Millstone Nuclear Power Station, Unit No. 3
Independent Corrective Action Verification Program

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

As required by the Communications Protocol PI-MP3-01, Sargent & Lundy is responsible for providing meeting summaries for those public meetings in which its personnel are participants. Enclosed for your use are the meeting summaries for the NRC Staff / S&L meeting on June 12 and 13, 1997, and for the NRC Staff / NU / S&L meeting on June 19, 1997. I have also enclosed two sets of color coded drawings from the June 19, 1997 meeting with Mr. Imbro's copy only.

You may direct any questions to me at (312) 269-6078.

Yours very truly,

D. K. Schopfer
Vice President and ICAVP Manager

Copies:
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Meeting Summary
Millstone Unit 3 ICAVP
Nuclear Regulatory Commission/Sargent & Lundy
June 12 and 13, 1997

PURPOSE: This meeting was held to discuss the proposed boundary definitions developed by S&L for the first two systems selected for the Millstone Unit 3 ICAVP. This meeting was open to the public for observation.

LOCATION: S&L Offices, Chicago, IL.

SUMMARY OF DISCUSSION:

1. Sargent & Lundy presented its proposed system boundary definition for both the Service Water System (SWP) and the Quench Spray System and Recirculation Spray System (QSS/RSS) using color coded Piping & Instrument Diagram (P&IDs) and electrical single-line diagrams. This discussion focused on the depth of the review on the interfacing systems and components by the Mechanical, Electrical and I&C discipline reviewers in the System Review Group and by the Operation and Maintenance and Testing Review Group.

   The NRC staff asked for clarification and provided comments on the methodology provided by S&L. Significant input was provided in the area of I&C interfacing systems and components. [The revised methodology for the review process as a result of these discussions is now contained in Revision 3 of the Audit Plan and Revision 3 of Project Instruction PI-MP3-02.] S&L was requested to revise the boundary definition P&IDs and be prepared to present them to the NRC staff and NU at a meeting on June 19, 1997, at the Millstone site.

2. The cutoff date of the first two system reviews was discussed, and it was confirmed that only information dated on or prior to May 27, 1997 would be used in the SWP and QSS/RSS reviews.

3. The NRC staff provided S&L with additional input (names, addresses, e-mail, phone numbers, etc) for the communications protocol. The NRC staff also requested that interim S&L responses to Discrepancy Report (DR) resolutions provided by NU be placed on the ICAVP Website. [These changes have been reflected in Revision 2 of PI-MP3-01 and Revision 3 of PI-MP3-11].

Note: Copies of the final boundary definition P&IDs and the tabulation of interfaces is included with Meeting Summary for the NRC/NU/S&L meeting on June 19, 1997.

Meeting Summary
Millstone Unit 3 ICAVP
Nuclear Regulatory Commission/Northeast Utilities/Sargent & Lundy
June 19, 1997

PURPOSE: This meeting was held for NRC staff and S&L to notify NU of the system boundary definitions and the extent of review for interfacing systems associated with the first two systems selected for the Millstone Unit 3 ICAVP. This meeting was open to the public for observation.

LOCATION: NU Training and Simulator Building at Millstone Site; Waterford, CT.

SUMMARY OF DISCUSSION:

Sargent & Lundy distributed two sets of documents to the attendees at the meeting. The first was a set presentation slides and a spreadsheet for each selected system (SWP and QSS/RSS). The second was a set of Millstone Unit 3 P&IDs and electrical single-line drawings, color coded to show the boundaries of the selected systems and the interfacing systems. The presentation slides provide the text of the discussion during the meeting and explain the color coding and other workings on the drawings. The spreadsheet provides a tabular listing of the interface systems and components and indicates the depth of review S&L will perform by each discipline for these interfaces. (These documents slides and drawings are available in the Public Document Rooms).

S&L personnel went through this material the meeting. NU personnel in attendance identified for S&L those interfacing systems and components which were in Wave 2 and Wave 3 systems for which the NU Configuration Management Program will be completed approximately July 14, 1997.

SYSTEM BOUNDARY REVIEW

Service Water System(SWP)

Mechanical/Structural Boundaries

SYSTEM BOUNDARIES

- Shown in yellow
- Shown on EM-133A,B,C,&D
- Includes all SR SWP components
- NSR SWP components excluded

EM-133A

- SWP PUMPS
- SWP STRAINERS

EM-133D

- EGS HX
- CONTROL BLDG AC WATER CHILLER
- EMERGENCY MAKE UP TO CONT BLDG HVAC
- SUPPLY TO CWS PUMP BEARINGS/BOUNDARY@ SR/NSR ISOL VALVES

EM-133B

- MCC & ROD CONTROL AREA BOOSTER PUMP &AC UNITS
- CCE CHARGING PUMP COOLING &CCP COMP COOLING HX
- FUEL POOL EMERGENCY MAKEUP
- CONTAINMENT RECIRC COOLERS
- EMERGENCY FEED TO AUX FW
- RSS/RHS PUMP AREA HVAC UNITS

EM-133B(CONT)

- SAFETY INJECTION PUMP COOLER
- EXCLUDES TURBINE PLANT COMPONENT COOLIG HX/BOUNDARY @ NSR/SR ISOL VALVES

EM-133C

- EXCLUDES CARRIER WATER FOR CHLORINATION OF SWP PUMP BAY/BOUNDARY @ NSR/SR ISOL VALVES

INTERFACE BOUNDARIES

- HIGHLIGHTED IN BLUE ON EM-133A,B,C&D
- CONNECTING P&ID ALSO HIGHLIGHTED IN BLUE
- 59 TOTAL MECH/STRUCT INTERFACES
- 12 INTERFACE GROUPS

MISC SYSTEM HX'S

- Points not numbered
- SWP removes heat from various HX's
- SWP side of HX's will be treated as part of SWP boundary
- Will verify struct integrity(calc review)
- Walkdown to verify nameplate/mounting
- Tier 1 will verify SWP capable of cooling requirement specified in sizing calcs

PLANT DRAINAGE SYSTEM

- Point SWP-01,04,08-24,27-30,48,49
- Plant Drainage System collects SWP equipment,vent,relief vlv discharge
- SWP drain piping to drains is SWP and included in tier 1 review
- No further review proposed

CIRCULATING WATER

- Point SWP-31thru 34,46,47
- CWS tunnel/flume functions as SWP return path
- No interface review proposed
- Structural integrity of piping interface verified as part of tier 1 stress calc review
- Structural integrity of tunnel if needed to support SWP safety functions

AUX FEEDWATER

- Points SWP-35,36,37
- SWP provides emegency makeup to Aux FW
- Interface review will verify SWP calcs support this mode
- Structural integrity of piping interface will be verified by tier 1 SWP stress calc review

SPENT FUEL POOL COOLING

- Point SWP-39
- SWP provides emergency makeup to fuel pool
- Interface review will ensure SWP calcs support this mode
- Structural integrity of piping interface will be verified by tier 1 pipe stress review

CONTROL BLDG HVAC

- Point SWP-50 thru 55
- SWP provides emergency backup for Control Bldg HVAC
- Interface review will ensure SWP calcs support this mode
- Structural integrity of piping will be verified by tier 1 stress calc review

POST ACCIDENT SAMPLING

- Point SWP-76
- SWP drain on PASS cooler
- Interface review will verify structural integrity of piping interface

CHLORINATION SYSTEM

- Point SWP-77
- SWP supplies carrier water for SWP pump bay chlorination
- Verify SWP calcs support carrier water requirements
- Structural integrity of SR/NSR interface will be verified as part of tier 1 stress calc review

CIRC WATER PUMP

- Point SWP-78,79
- SWP supplies lube water for CWS pump bearings
- Verify SWP calcs support flow requirements
- Structural integrity of SR/NSR interface included in tier 1 stress calc review

TURBINE PLANT COMP COOLING

- Point SWP-80
- SWP supplies cooling to CCP HX
- Verify SWP calcs support CCP cooling requirements
- Structural integrity of SR/NSR interface will be verified as part of tier 1 stress calc review

SWP PUMP CUBICLE VENTILATION(HVY)

- Point SWP-83
- Provides SR Ventilation To Maintain Environmental Conditions In SWP Pump Cubicles
- HVY Sizing Calcs Will Be Reviewed To Confirm Appropriate SWP Heat Loads

CB CHILLER EQUIP SPACE VENTILATION(HVC)

- Point SWP-84
- Provides SR Ventilation To Maintain Environmental Conditions In SWP Booster Pump Area
- HVC Sizing Calcs Will Be Reviewed To Confirm Appropriate SWP Booster Pump Heat Loads

CHARGING PUMP &COMP COOLING PUMP AREA VENTILATION(HVR)

- Point SWP-85
- Provides SR Ventilation To Maintain Environmental Conditions In Pump Area
- HVC Sizing Calcs Will Be Reviewed To Confirm Appropriate Pump Heat Loads

I&C Interfaces

- Two types
  - Input

    Signals from another system
  - Output

    Signals to another system

Input signals

- Two general configurations
  - Those that input directly from another system
  - Those that input indirectly via another system
    - For example, Reactor Protection System

Output signals

- Those that output to another system
  - For examples: Plant Computer, Valve position interlock

Input Signal Scope of Review - Indirect Inputs

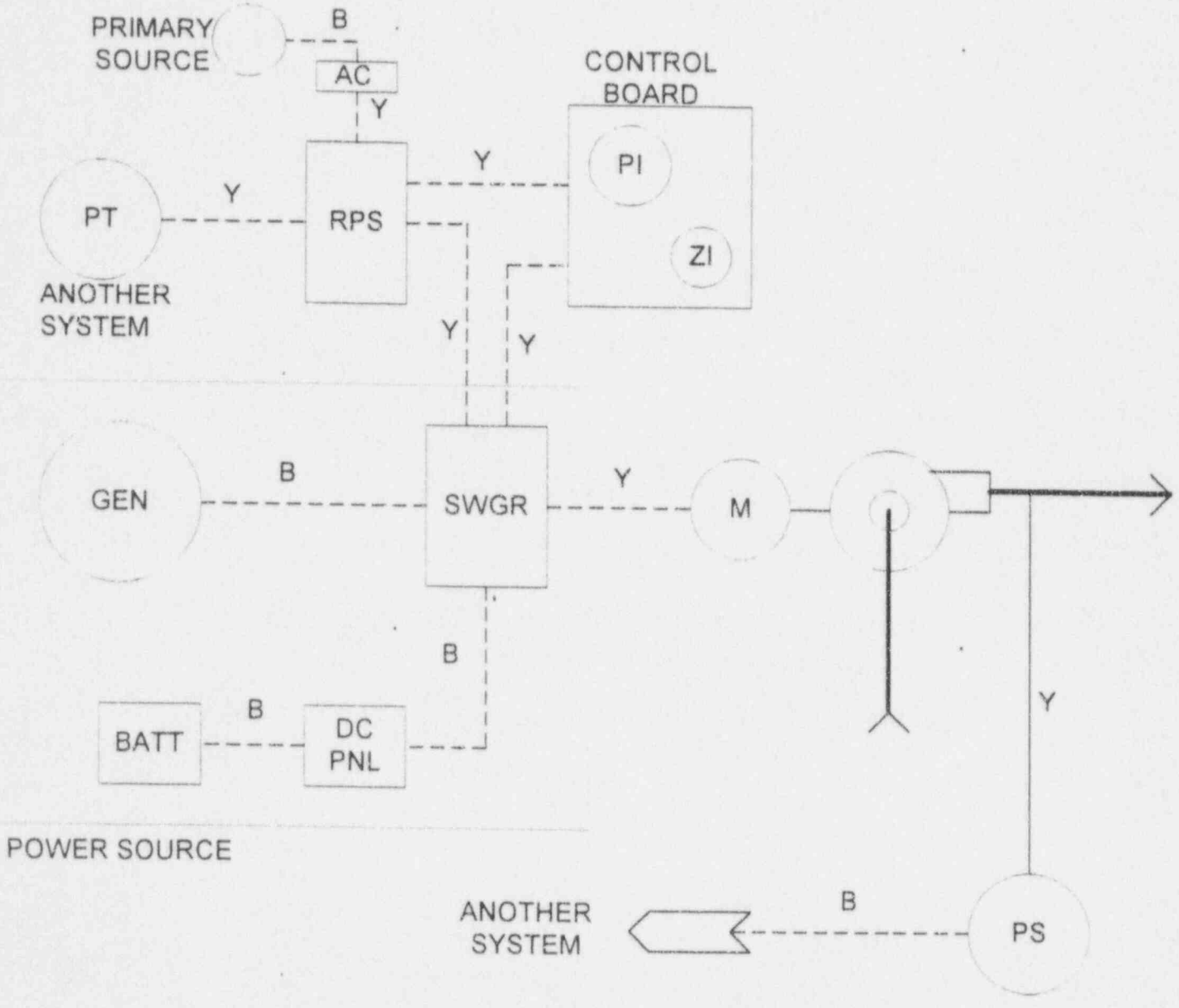
- Review signal path from input sensor of dissimilar channels in other system to system under review
  - Review Logic Sketch, Schematic Sketch, wiring diagrams (except RPS), and setpoints, if applicable
- Walkdown of all channels for one selected process variable

Input Signal Scope of Review - Direct Inputs

- Review signal path from input sensor in other system to system under review
  - Review Logic Sketch, Schematic Sketch, wiring diagrams, and setpoints, if applicable

Output Signal Scope of Review

- Review signal path from output device of the vertical slice system to input point (signal isolator) or logic relay in other system



BOUNDARY DEFINITION SKETCH

•Service Water System

SRG/I&C Scope of Review

- I&C Interfaces
  - 16 Input Interface Numbers
    - Interface numbers used in multiple locations
    - Signals from SSS, CDA, RP Vent, Cnmt Recirc Vent, IA, SIS, EGS, SW
  - 6 Output Interface Numbers
    - Interface numbers used in multiple locations
    - Signals to Plant Computer, Rad Mon, Cnmt Bldg Vent

Acronyms

- CDA - Containment Depressurization Actuation
- EGS - Emergency Generator System
- IA - Instrument Air
- LOP - Loss of Offsite Power
- RHS - Residual Heat System
- RSS - Recirculation Spray System
- QSS - Quench Spray System
- SIL - Low Pressure Safety Injection
- SIS - Safety Injection Signal
- SSS - Sequenced Safeguard Signal
- SW - Service Water

Electrical Interface System Review

Electrical Interface System Review

- Determine Mech. System electrical components bus connections to electrical source
  - Safety Diesel-generator of same division
  - Battery of same division, and Charger (to Safety Diesel-generator)
- Evaluate Appendix R/Safe Shutdown path requirements for Mech. System support
  - Includes selecting one sample fire zone for reviewing associated circuits (in enclosures) for one Mech. System
- Evaluate distribution system equipment and connections to Mech. System electrical circuits and instrument power supplies for direct and indirect inputs as follows:

Electrical Interface System Review

- Interfacing Breaker (or Fuse) Panel, Motor Control Center (i.e. MCC), LV Switchgear
  - Mech. System electrical loading included correctly in bus loading
  - Main Feed connection sized for bus loading
  - Bus continuous and short term loading within Main Feed device rating
  - Thermal and short circuit coordination of Main Feed protective device with Mech. System electrical circuits (including ground faults)
  - Thermal and short circuit coordination of Main Feed device with largest circuit on bus (including ground faults)
  - Sufficient voltage available at bus to support Mech. System electrical circuits at degraded voltage relay setpoint

Electrical Interface System Review

- Intermediate Buses and Connections
  - Interface bus loading included correctly in intermediate bus loading
  - Intermediate bus Main Feed connection sized for bus loading
  - Intermediate bus continuous and short term loading within Main Feed protective device rating
  - Thermal and short circuit coordination of Main Feed protective device with interface bus circuit (including ground faults)
  - Thermal and short circuit coordination of Main Feed device with largest circuit on intermediate bus (including ground faults)

Electrical Interface System Review

- 4160V Switchgear
  - Mech. System electrical loading included correctly in bus loading
  - Interface (or intermediate) bus loading included correctly in bus loading
  - Thermal and short circuit coordination of Safety Diesel-generator protective device with Mech. System and interface or intermediate bus circuits (including ground faults)
  - Thermal and short circuit coordination of Safety Diesel-generator protective device with largest circuit on bus (including ground faults)
  - Sufficient voltage available at bus to support Mech. System electrical circuits at degraded voltage relay setpoint

Electrical Interface System Review

- Safety Diesel-generator
  - Mech. System electrical loading included correctly for continuous and short term loading
  - Mech. System electrical loading included correctly for starting KVA loading including voltage droop and recovery
  - Continuous and short term overall loading within generator and connection ratings
  - Continuous and short term loading within Safety Diesel-generator overcurrent protective device settings

Electrical Interface System Review

- Battery
  - Mech. System electrical loading included correctly for continuous and short term loading including operating times
  - Mech. System electrical loading included correctly for starting (or pickup) loading including voltage
  - Continuous and short term overall loading within ratings
  - Continuous and short term loading within battery bus overcurrent protective device settings

Electrical Interface System Review

- Battery Charger
  - Mech. System electrical loading included correctly for continuous and short term loading including operating times
  - Continuous overall loading within ratings including recharging current within required recharge time
  - AC power connection and coordination within charger ratings
  - AC power bus addresses charger loading

System Boundary Review
---ORG Scope of Review---

Service Water System

--Mech / I&C--

Service Water System
--ORG Scope--

- Mechanical / I&C Interfaces
- 83 Interfaces identified
- 5 Groupings of actions
  - Verify procedure exists for periodic perf tests --Pts 83-85.
  - No action-Drains/Vents-Pts 01-55,64-68,76-80.(100% review for items in selected system)
  - Computer input points--numerous--Pt 56

    -if for EOP / Perf Calc--confirm point exists/ data is recorded/trended as req'd by proceds

    -if not--no action

Service Water System(cont'd)
--ORG Scope--

– Interlock Signals

-Inputs to selected system--Pts 57-62,69-71, 74-75.

Identify logic test requirements

Confirm requirements included in procedure

Confirm procedure / tests were performed

Confirm sensors included in calib. program

-Outputs from selected system--Pts 59-60, 63, 72-73,81-82.

Confirm procedure to test / control / verify interface

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
XXXX X	Various	M	S	SWP to and from Various Heat Exchangers	SWP functional capability and structural integrity of piping interface	None
SWP-01	Plant Drainage	M	N	Service Water Pump Equipment Drain	None-(NOTE: drain piping to equipment drain is part of SWP)	None
SWP-02	Plant Drainage	M	N	Service Water Pump Equipment Drain	None-(NOTE: drain piping to equipment drain is part of SWP)	None
SWP-03	Plant Drainage	M	N	Service Water Pump Equipment Drain	None-(NOTE: drain piping to equipment drain is part of SWP)	None
SWP-04	Plant Drainage	M	N	Service Water Pump Equipment Drain	None-(NOTE: drain piping to equipment drain is part of SWP)	None
SWP-05	Deleted from Scope					None
SWP-06	Deleted from Scope					None
SWP-07	Deleted from Scope					None
SWP-08	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-09	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-10	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-11	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-12	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-13	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-14	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-15	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-16	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-17	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-18	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
SWP-19	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-20	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping to floor drain is part of SWP)	None
SWP-21	Plant Drainage	M	N	Floor Drain from SWP High Point Vent - ESF Bldg Roof	None-(NOTE: vent piping to floor drain is part of SWP)	None
SWP-22	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: vent piping to floor drain is part of SWP)	None
SWP-23	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: vent piping to floor drain is part of SWP)	None
SWP-24	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: vent piping to floor drain is part of SWP)	None
SWP-25	Plant Drainage	M	N	Equipment Drain from SWP Strainers - Lube Water to CWS	None-(NOTE: drain piping to equipment drain is part of SWP)	None
SWP-26	Plant Drainage	M	N	Equipment Drain from SWP Strainers - Lube Water to CWS	None-(NOTE: drain piping to equipment drain is part of SWP)	None
SWP-27	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping is part of SWP)	None
SWP-28	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping is part of SWP)	None
SWP-29	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping is part of SWP)	None
SWP-30	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: relief valve discharge piping is part of SWP)	None
SWP-31	Circ Water	M	N	SWP Discharge to CW Tunnel/Flume	None	None
SWP-32	Circ Water	M	N	SWP Discharge to CW Tunnel/Flume	None	None
SWP-33	Circ Water	M	N	SWP Discharge to CW Tunnel/Flume	None	None
SWP-34	Circ Water	M	N	SWP Discharge to CW Tunnel/Flume	None	None
SWP-35	Aux Feedwater	M	S	SWP Emergency Crosstie to Aux Feedwater	SWP functional capability and structural integrity of piping interface	None--Control of spool-piece included in selected system
SWP-36	Aux Feedwater	M	S	SWP Emergency Crosstie to Aux Feedwater	SWP functional capability and structural integrity of piping interface	None--Control of spool-piece included in selected system
SWP-37	Aux Feedwater	M	S	SWP Emergency Crosstie to Aux Feedwater	SWP functional capability and structural integrity of piping interface	None--Control of spool-piece included in selected system

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
SWP-38	Circ Water	M	N	SWP Discharge to CW Tunnel/Flume	None	None
SWP-39	Fuel Pool	M	N	SWP Emergency Makeup to Fuel Pool	SWP functional capability and structural integrity of piping interface	None
SWP-40	Circ Water	M	N	SWP Lube Water Supply to CW Pump Bearings	SWP functional capability and structural integrity of piping interface	None
SWP-41	Circ Water	M	N	SWP Lube Water Supply to CW Pump Bearings	SWP functional capability and structural integrity of piping interface	None
SWP-42	Circ Water	M	N	SWP Lube Water Supply to CW Pump Bearings	SWP functional capability and structural integrity of piping interface	None
SWP-43	Circ Water	M	N	SWP Lube Water Supply to CW Pump Bearings	SWP functional capability and structural integrity of piping interface	None
SWP-44	Circ Water	M	N	SWP Lube Water Supply to CW Pump Bearings	SWP functional capability and structural integrity of piping interface	None
SWP-45	Circ Water	M	N	SWP Lube Water Supply to CW Pump Bearings	SWP functional capability and structural integrity of piping interface	None
SWP-46	Circ Water	M	N	SWP Discharge to CW Tunnel/Flume	None	None
SWP-47	Circ Water	M	N	SWP Discharge to CW Tunnel/Flume	None	None
SWP-48	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: vent piping to floor drain is part of SWP)	None
SWP-49	Plant Drainage	M	N	Floor Drain from SWP Relief Valve Discharge	None-(NOTE: vent piping to floor drain is part of SWP)	None
SWP-50	Ctrl Bldg HVAC	M	S	Emergency Backup Cooling Water Return from Ctrl Bldg HVAC	SWP functional capability and structural integrity of piping interface	None--Review of interface included with selected system
SWP-51	Ctrl Bldg HVAC	M	S	Emergency Backup Cooling Water Supply to Ctrl Bldg HVAC	SWP functional capability and structural integrity of piping interface	None--Review of interface included with selected system
SWP-52	Ctrl Bldg HVAC	M	S	Emergency Backup Cooling Water Return from Ctrl Bldg HVAC	SWP functional capability and structural integrity of piping interface	None--Review of interface included with selected system
SWP-53	Ctrl Bldg HVAC	M	S	Emergency Backup Cooling Water Supply to Ctrl Bldg HVAC	SWP functional capability and structural integrity of piping interface	None--Review of interface included with selected system
SWP-54	Ctrl Bldg HVAC	M	S	Emergency Backup Cooling Water Return from Ctrl Bldg HVAC	SWP functional capability and structural integrity of piping interface	None--Review of interface included with selected system

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
SWP-55	Ctrl Bldg HVAC	M	S	Emergency Backup Cooling Water Supply to Ctrl Bldg HVAC	SWP functional capability and structural integrity of piping interface	None--Review of interface included with selected system
SWP-56	Plant Computer	I	N	Typical; listed only once. Monitor system operation, logging, and trending.	By documentation, verify that **outputs** to the computer system are as identified on the P&ID, and that their process range and signal range are consistent with the monitored point.	IF EOP/Performance Calc. - confirm point exists, data is taken and trended per procedures; IF not EOP - No Action.
SWP-57	Sequence Safeguard Signal Train A	I	S	Input lead/follow to interlock logic for control of 3SWP-P1A and 3SWP-P1C.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device [to RPS and from RPS] through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program.
SWP-58	Sequence Safeguard Signal Train B	I	S	Input lead/follow to interlock logic for control of 3SWP-P1B.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device [to RPS and from RPS] through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program.

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
SWP-59	Loss of Power Signal	I	S	Actuation signal to close or open a valve or start a pump.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program. "Output" Verify that a procedure for functional testing exists.
SWP-60	Containment Depressurization Actuation (CDA)	I	S	Actuation signal to close or open a valve.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device [to RPS and from RPS] through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program. "Output" Verify that a procedure for functional testing exists.

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
SWP-61	Reactor Plant Ventilation	I	S	Actuate pump 3SWP-P3B to start on high temperature.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program.
SWP-62	Reactor Plant Ventilation	I	S	Actuate pump 3SWP-P3A to start on high temperature.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program.
SWP-63	Radiation Monitoring	I	S	Monitor Service Water discharge to Circulating Water System.	By documentation, verify that the system provides an **input** signal/contact to the monitoring circuit of the monitored/actuated component, that the signal/contact is shown in the associated schematic, and that the wiring diagrams shows its connection points.	"Output" Verify that a procedure for functional testing exists.
SWP-64	ESF & MSV Bldgs Ventilation	I	S	Control Service Water to Residual Heat Removal Pump Vent Unit.	By documentation, verify that the system receives the (freon) signal **input** necessary to control the actuated component, and that components from the sensing device through to the signal input are functionally adequate.	None - Valve and valve operation reviewed as part of selected system.

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
SWP-65	ESF & MSV Bldgs Ventilation	I	S	Control Service Water to Residual Heat Removal Pump Vent Unit.	By documentation, verify that the system receives the (freon) signal **input** necessary to control the actuated component, and that components from the sensing device through to the signal input are functionally adequate.	None - Valve and valve operation reviewed as part of selected system.
SWP-66	ESF & MSV Bldgs Ventilation	I	S	Control Service Water to Contam Recirc Pump Vent Unit.	By documentation, verify that the system receives the (freon) signal **input** necessary to control the actuated component, and that components from the sensing device through to the signal input are functionally adequate.	None - Valve and valve operation reviewed as part of selected system.
SWP-67	ESF & MSV Bldgs Ventilation	I	S	Control Service Water to Contam Recirc Pump Vent Unit.	By documentation, verify that the system receives the (freon) signal **input** necessary to control the actuated component, and that components from the sensing device through to the signal input are functionally adequate.	None - Valve and valve operation reviewed as part of selected system.
SWP-68	Instrument Air	I	N	Supply air to Air Operated Valves.	By documentation, verify that the Instrument Air system identifies the AOV or SOV in the selected system as an air user. (**input**)	None - Valve and valve operation reviewed as part of selected system.
SWP-69	Safety Injection System	I	S	Safety Injection Signal to open valve.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device [to RPS and from RPS] through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program.

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
SWP-70	Emergency Generator System	I	S	Interlock for Service Water flow alarm.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations..	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program.
SWP-71	Emergency Generator System	I	S	Interlock for Service Water flow alarm.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program.
SWP-72	Control Bldg HVAC	I	S	Interlock logic for Control Bldg Water Chiller.	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagrams shows its connection points.	"Output" Verify that a procedure for functional testing exists.
SWP-73	Control Bldg HVAC	I	S	Interlock logic for Control Bldg Water Chiller.	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagrams shows its connection points.	"Output" Verify that a procedure for functional testing exists.

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
SWP-74	Control Bldg HVAC	I	S	Logic control transfer for Control Bldg Air Conditioning Booster Pump 3SWP-P2A.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including logics, schematics, and wiring diagrams.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program.
SWP-75	Control Bldg HVAC	I	S	Logic control transfer for Control Bldg Air Conditioning Booster Pump 3SWP-P2B.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including logics, schematics, and wiring diagrams.	"Input" Identify periodic logic test requirements and logic test procedure; confirm requirements are included in procedure. Confirm procedure/tests were performed. Confirm sensors are included in calibration program.
SWP-76	Post Acc. Sampling	M	N	SWP Side Equipment Drain from PASS Cooler	Structural integrity of piping interface	None
SWP-77	Chlorination	M	N	[illegible] water for SWP chlorination	SWP functional capability	None
SWP-78	Circ Water	M	N	Lube Water Supply to Circ Water Pump Bearings	SWP functional capability and structural integrity of piping interface	None
SWP-79	Circ Water	M	N	Lube Water Supply to Circ Water Pump Bearings	SWP functional capability and structural integrity of piping interface	None
SWP-80	Service Water	M	N	Service Water Supply to Turbine Plant Component Cooling Water Heat Exchangers	SWP functional capability and structural integrity of piping interface	None

Point #	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
SWP-81	Service Water	I	N	Interlock logic for start/stop of Strainer 2B	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagrams shows its connection points.	Output--Confirm procedure exists to check MOV position on control board.
SWP-82	Service Water	I	N	Interlock logic for start/stop of Strainer 2A	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagrams shows its connection points.	Output--Confirm procedure exists to check MOV position on control board.
SWP-83	SW Pump Cubicle Ventillation System [HVY]	M	Y	Maintain environmental conditions in SW pump cubicles	Review calculation sfor sizing 3HVY*FN2A/B to confirm appropriate heat loads were considered.	Verify procedure exists for periodic performance test [switching between summer and winter operation].
SWP-84	Control Building Chiller Equipment Space Ventillation System [HVC]	M	Y	Maintain environmental conditions in area of Control Building A-C Booster pumps	Review calculation sfor sizing 3HVC*FN2A/B and 3HVC*FN7A/B to confirm appropriate heat loads were considered.	Verify procedure exists for periodic performance test.
SWP-85	Charging Pump & Component Cooling Water Pump Area Ventillation System [HVR]	M	Y	Maintain environmental conditions in area of the MCC and Control Rod Drive Area A-C Booster pumps.	Review calculation sfor sizing 3HVR*FN13A/B and 3HVR*FN14A/B to confirm appropriate heat loads were considered.	Verify procedure exists for periodic performance test.

SYSTEM BOUNDARY REVIEW

Quench Spray System (QSS)/ Containment Recirculation System (RSS) Mechanical/Structural Boundaries

SYSTEM BOUNDARIES

- System Boundaries (Yellow)
  - Shown on EM-115A (QSS)
  - Shown on EM-112C (RSS)
  - Includes All QSS/RSS Components

EM-115A (QSS)

- RWST
- Quench Spray Pump
- Quench Spray Headers
- Chemical Addition Subsystem (Abandoned)/Not in Scope,Mod Review Only
- RWST Cooling Subsystem/Not in Scope

EM-112C (RSS)

- Containment Sump
- RSS Pumps
- RSS Cooler
- RSS Spray Headers

INTERFACE BOUNDARIES

- Highlighted in blue on EM-115A & EM-112C
- Connecting P&IDs also highlighted in blue
- 20 Total Mech/Struct Interfaces
- 8 Groups of Interfaces

LOW & HIGH PRESSURE SAFETY INJECTION

- Point QSS/RSS-10
- RWST supplies water to high & low safety injection pumps
- Verification that RWST capacity is sufficient for both QSS and SIL is part of Tier 1 Review
- Structural integrity of interface is part of Tier 1 Review

SERVICE WATER SYSTEM

- Point QSS/RSS-11 to 18
- SWP removes heat from containment recirculation fluid during RSS operation
- SWP is Tier 1 System and will be reviewed

POST ACCIDENT SAMPLING

- Point QSS/RSS-19, 20
- Provides sample point for PASS
- Structural integrity of interface included in Tier 1 Review
- Functional capability to retrieve sample included in review

PRIMARY GRADE WATER

- Point QSS/RSS-21, 22
- Primary grade water is used for manual fill of RSS pump seal head tank
- No interface review/not normally connected to RSS

LOW & HIGH PRESSURE SAFETY INJECTION SYSTEM

- Point QSS/RSS-23, 24
- RSS pump supplies containment sump water to SIL
- Ability to supply SIL will be verified as part of RSS Tier 1 Review
- Structural integrity of piping interface will be verified as part of RSS Tier 1 Review

MISC. RWST INTERFACES

- Point QSS/RSS-56,57,58
- Chilled Wtr For RWST Heat Removal
- Reactor Plant Sampling
- FPC For RWST Purification
- CHS For RWST Makeup
- SIL/RHS For QSS Test Path To RWST
- Structural Integrity of Interface to RWST Included in Tier 1 Review

ESF BLDG EMERGENCY VENTILATION(HVQ)

- Point QSS/RSS-60,61
- Provides SR Ventilation To Maintain Environmental Conditions In QSS/RSS Equipment Areas
- HVQ Sizing Calcs Will Be Reviewed To Confirm Appropriate QSS/RSS Heat Loads

•QSS/RSS System

SRG/I&C Scope of Review

- I&C Interfaces
  - 16 Input Interface Numbers
    - Interface numbers used in multiple locations
    - Signals from SSS, CDA, IA, SIS, RHS
  - 16 Output Interface Numbers
    - Interface numbers used in multiple locations
    - Signals to Plant Computer, RP Chilled Wtr, SIL, QSS/RSS Non-safety

System Boundary Review
---ORG Scope of Review---

Quench Spray / Recirc Spray System

--Mech / I&C--

QSS / RSS Systems
--ORG Scope--

- Mechanical / I&C Interfaces
- 52 Interfaces Identified
- 5 Groupings of actions
  - Verify procedure exists for periodic perf tests
    --Pts 10, 19-22, 26, 56-58, 60-61.
  - No action--Drains/Vents--Pts 11-18, 23-24
    (100% review for items in selected system)
  - Computer input points--numerous--Pt 25
    -If for EOP / Perf Calc--confirm point exists/
    data is recorded/trended as req'd by proceds
    -If not--no action

QSS / RSS Systems (cont'd)
--ORG Scope--

– Interlock Signals--

-Inputs to selected system--Pts 28-29, 31-32, 45-55.

Identify periodic logic test requirements

Confirm requirements included in procedure

Confirm procedure / tests were performed

Confirm sensors included in calib program

-Outputs from selected system--Pts 27, 30, 33-44, 59

Confirm procedure to test / control interface

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-01	Deleted from Scope					
QSS/RSS-02	Deleted from Scope					
QSS/RSS-03	Deleted from Scope					
QSS/RSS-04	Deleted from Scope					
QSS/RSS-05	Deleted from Scope					
QSS/RSS-06	Deleted from Scope					
QSS/RSS-07	Deleted from Scope					
QSS/RSS-08	Deleted from Scope					
QSS/RSS-09	Deleted from Scope					
QSS/RSS-10	Low & High Pressure Safety Injection (SIL)	M	Y	RWST supply to low and high pressure safety injection pumps	Structural integrity of interface, tank capacity for support of QSS is part of QSS review	Verify procedure for periodic performance test. (for control or valve lineup).
QSS/RSS-11	Service Water (SWP)	M	Y	Remove heat from containment recirculation fluid being pumped from the sump to the spray header at Cntmt Recirc Cooler *EID(D-1)	Included as part of SWP Tier 1 review	None.
QSS/RSS-12	Service Water (SWP)	M	Y	Remove heat from containment recirculation fluid being pumped from the sump to the spray header at Cntmt Recirc Cooler *EID(D-1)	Included as part of SWP Tier 1 review	None.
QSS/RSS-13	Service Water (SWP)	M	Y	Remove heat from containment recirculation fluid being pumped from the sump to the spray header at Cntmt Recirc Cooler *EIB(B-1)	Included as part of SWP Tier 1 review	None.

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-14	Service Water (SWP)	M	Y	Remove heat from containment recirculation fluid being pumped from the sump to the spray header at Cntmt Recirc Cooler *EIB(B-1)	Included as part of SWP Tier 1 review	None.
QSS/RSS-15	Service Water (SWP)	M	Y	Remove heat from containment recirculation fluid being pumped from the sump to the spray header at Cntmt Recirc Cooler *EIC(C-1)	Included as part of SWP Tier 1 review	None.
QSS/RSS-16	Service Water (SWP)	M	Y	Remove heat from containment recirculation fluid being pumped from the sump to the spray header at Cntmt Recirc Cooler *EIC(C-1)	Included as part of SWP Tier 1 review	None.
QSS/RSS-17	Service Water (SWP)	M	Y	Remove heat from containment recirculation fluid being pumped from the sump to the spray header at Cntmt Recirc Cooler *EIA(A-1)	Included as part of SWP Tier 1 review	None.
QSS/RSS-18	Service Water (SWP)	M	Y	Remove heat from containment recirculation fluid being pumped from the sump to the spray header at Cntmt Recirc Cooler *EIA(A-1)	Included as part of SWP Tier 1 review	None.
QSS/RSS-19	Post Accident Sample System (SSP)	M	Y	Provide flow path for post accident remote sampling of containment sump in accordance with NUREG 0737	None	"Verify procedure for periodic performance test. (Maintenance awareness. Check maintenance histroy, solenoids)."
QSS/RSS-20	Post Accident Sample System (SSP)	M	Y	Provide flow path for post accident remote sampling of containment sump in accordance with NUREG 0737	None	"Verify procedure for periodic performance test. (Maintenance awareness. Check maintenance history, solenoids)"
QSS/RSS-21	Primary Grade Water (PGS)	M	N	Hose connection to supply makeup to Containment Recirculation Pump Seal Head Tank (four seal tanks)	None	Verify procedure for periodic performance test. (Control of hose connections)..

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-22	Primary Grade Water (PGS)	M	N	Hose connection to supply makeup to Containment Recirculation Pump Seal Head Tank (four seal tanks)	None	Verify procedure for periodic performance test. (Control of hose connections).
QSS/RSS-23	Low & High Pressure Safety Injection (RHS)	M	Y	Provide flow path to the reactor core from the containment sump via the Cntmt Recirculation Pumps during safety injection mode	Structural integrity of interface, RSS capability to support SIL is part of RSS scope	None.
QSS/RSS-24	Low & High Pressure Safety Injection (SIL)	M	Y	Provide flow path to the reactor core from the containment sump via the Cntmt Recirculation Pumps during safety injection mode	Structural integrity of interface, RSS capability to support SIL is part of RSS scope	None.
QSS/RSS-25	Plant Computer	I	N	Typical; listed only once. Monitor system operation, logging, and trending.	By documentation, verify that **outputs** to the computer system are as identified on the P&ID, and that their process range and signal range are consistent with the monitored point.	Confirm that the computer point exists and confirm that the data point is recorded consistent with requirements.
QSS/RSS-26	Air System	I	N	Provide motive force for valve operation.	By documentation, verify that the Instrument Air system identifies the AOV or SOV in the selected system as an air user. (**input**)	Verify procedure for periodic performance test. (Valve line ups).
QSS/RSS-27	Reactor Plant Chilled Water System	I	N	Interlock to close/open 3CDS-TV26.	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-28	Containment Depressurizatio n Actuation	I	S	Interlock to open or close respective QSS valve, as applicable.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device [to RPS and from RPS] through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-29	Sequenced Safeguard Signal	I	S	Interlock for auto after start of respective Quench Spray Pump.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device [to RPS and from RPS] through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-30	Low Pressure Safety Injection (SIL)	I	S	Interlock to turn RHS pump off at RWST Lo-Lo Level.	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points, and setpoint is per setpoint calculations.	""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-31	Containment Depressurizatio n Actuation	I	S	Interlock to open or close respective RSS valve, as applicable.	By documenation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device [to RPS and from RPS] through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-32	Sequenced Safeguard Signal	I	S	Interlock to start respective RSS pump.	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device [to RPS and from RPS] through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-33	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to open 3SIL*MV8804B	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-34	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to close 3SIL*MV8812B	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-35	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to close 3SIL*MV8704A,B	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-36	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to open 3SIL*MV8804B	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-37	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to close 3SIL*MV8812B	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-38	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to close 3SIL*MV8702A,B	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-39	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to open 3SIL*MV8804A	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-40	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to close 3SIL*MV8812A	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-41	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to close 3SIL*MV8702A,B	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-42	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to open 3SIL*MV8804A	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-43	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to close 3SIL*MV8812A	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-44	Low Pressure Safety Injection (SIL)	I	S	Interlock/Permissive to close 3SIL*MV8701A,B	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points.	"""Output signal"" Verify procedure exists for functional testing."
QSS/RSS-45	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8837B	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-46	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8838B	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-47	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8837B,8838B	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-48	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8837B,8838B	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-49	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8837A,8838A	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-50	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8837B,8838B	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-51	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8837A,8838A	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-52	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8837A,8838A	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-53	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8837A	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-54	Residual Heat Removal (RHS)	I	S	Interlock/Permissive to open 3RSS*MV8838A	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device through to the contact input are functionally adequate, including schematics, logics, and wiring diagrams.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-55	Safety Injection System	I	S	Actuate to close RWST isolation valve	By documentation, verify that the system receives the contact **input** necessary to meet logic requirements of the actuated component, and that components from the sensing device [to RPS and from RPS] through to the contact input are functionally adequate, including schematics, logics, wiring diagrams, and setpoint calculations.	"""Input signal"" Identify periodic logic test requirements and test procedure, confirm requirements are included in the procedure. Confirm procedure/tests were performed. Confirm sensors are included in the calibration program."
QSS/RSS-56	Quench Spray System	M	N	Remove heat from RWST contents,provide grab sample location to facilitate lab analysis of RWST contents, purify/calrify RWST contents, makeup to RWST & provide flow path for QSS/RSS pump testing.	Structural integrity of interface	Verify procedure for periodic performance test. (Chilled water temperature and flow, RWST purification, or make-up to the RWST from the CHS.)
QSS/RSS-57	Quench Spray System	M	N	Remove heat from RWST contents,provide grab sample location to facilitate lab analysis of RWST contents, purify/calrify RWST contents, makeup to RWST & provide flow path for QSS/RSS pump testing.	Structural integrity of interface	Verify procedure for periodic performance test. (Chilled water temperature and flow, RWST purification, or make-up to the RWST from the CHS.)
QSS/RSS-58	Quench Spray System	M	N	Remove heat from RWST contents,provide grab sample location to facilitate lab analysis of RWST contents, purify/calrify RWST contents, makeup to RWST & provide flow path for QSS/RSS pump testing.	Structural integrity of interface	Verify procedure for periodic performance test. (Chilled water temperature and flow, RWST purification, or make-up to the RWST from the CHS.)
QSS/RSS-59	Quench Spray System	I	N	Interlock for stop of Refueling Water Recirculation pumps on RWST low temperature	By documentation, verify that the system provides the contact **output** to the control logic relay of the actuated component, that the contact is shown in the associated schematic, and that the wiring diagram shows its connection points, and setpoint is per setpoint calculations.	"Output Signal" - Verify procedure exists for functional testing.

Point Number	Interface System	TYPE	Safety Class	Function	SRG Interface Review Scope	ORG Interface Review Scope
QSS/RSS-60	ESF Building Emergency Ventillation System [HVQ]	M	Y	Maintain environmental conditions in Safety Injection and Quench Spray pump areas.	Review calculations for sizing of 3HVQ*ACUS1A/B to confirm appropriate QSS heat loads were used.	Verify procedure for periodic performance test.
QSS/RSS-61	ESF Building Emergency Ventillation System [HVQ]	M	Y	Maintain environmental conditions in Containment Recirculation pump and cooler areas.	Review calculations for sizing of 3HVQ*ACUS2A/B to confirm appropriate RSS heat loads were used.	Verify procedure for periodic performance test.