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TITLE: EMERGENCY POST ACCIDENT SAMPLING AND DETERMINATION OF FUEL FAILURE USING DOSE RATES

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Procedure No EI-7.0
Revision 8
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PALISADES NUCLEAR PLANT
EMERGENCY IMPLEMENTING PROCEDURE

TITLE: EMERGENCY POST ACCIDENT SAMPLING AND DETERMINATION OF FUEL FAILURE USING DOSE RATES

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User Reviewer Date

TITLE: EMERGENCY POST ACCIDENT SAMPLING AND DETERMINATION OF FUEL FAILURE USING DOSE RATES

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ATTACHMENTS

TITLE: EMERGENCY POST ACCIDENT SAMPLING AND DETERMINATION OF FUEL FAILURE USING DOSE RATES

USER ALERT
REFERENCE USE PROCEDURE

Refer to the procedure periodically to confirm that all procedure segments of an activity will be or are being performed. Where required, sign appropriate sign-off blanks to certify that all segments are complete.

1.0 PERSONNEL RESPONSIBILITY

The Operations Support Group Leader shall implement this procedure. The Technical Support Center (TSC) Chemistry Support Team and the Operations Support Center (OSC) Chemistry Supervisor shall provide support. In the absence of the Operations Support Group Leader, the Site Emergency Director shall delegate this responsibility.

2.0 PURPOSE

To determine if fuel failure is less than or greater than 5% through the use of Primary Coolant System (PCS) sample line dose rate correlations.

To specify PCS sampling requirements if fuel failure is equal to or less than 5% and a sample has been requested. If fuel failure is greater than 5%, PCS sampling will not be performed.

3.0 REFERENCES

3.1 SOURCE DOCUMENTS

3.1.1 Reg Guide 1.97

3.1.2 EA-JBB-01-04, "Failed Fuel Rates on NSSS Piping"

3.1.3 Palisades Site Emergency Plan, Section 7, "Emergency Facilities and Equipment"

3.1.4 Combustion Engineering Report, "Technical Justification for the Elimination of the Post-Accident Sampling System from the Plant Design and Licensing Basis for CEOG Utilities," CE NPSD-1157, Revision 1

3.2 REFERENCE DOCUMENTS

3.2.1 Emergency Implementing Procedure EI-1, "Emergency Classification and Actions"

3.2.2 Emergency Implementing Procedure EI-7.10, "Post Accident Sampling, Radioactive Gaseous Effluent Monitoring"

3.2.3 Palisades Administrative Procedure 9.31, "Temporary Modification Control"

3.2.4 Emergency Implementing Procedure EI-11, "Determination of Extent of Core Damage"

3.2.5 Palisades Administrative Procedure 1.15, "Performance of Job Briefings"

3.2.6 System Operating Procedure SOP-16, "Component Cooling Water System"

3.2.7 Palisades Administrative Procedure 10.41, "Procedure Initiation and Revision"

3.2.8 Emergency Implementing Procedure EI 4.2, "Operational Support Center Activation"

3.2.9 Palisades Administrative Procedure 10.46, "Plant Records"

4.0 INITIAL CONDITIONS AND/OR REQUIREMENTS

This procedure shall be implemented as a result of Emergency Implementing Procedure EI-1, "Emergency Classification and Actions."

The Site Emergency Director (SED) reviews the above procedure to categorize the emergency into one of the Site Emergency Plan Classifications and to determine the required actions.

At Primary Coolant System pressures of <150 psi, CV-1903, PCS hot leg sample valve, may not be capable of opening. This procedure should be performed at PCS pressures >150 psi. If PCS pressure is <150 psi, this procedure should not be performed.

4.1 PRELIMINARY INDICATORS

If any of the following Plant conditions are present, it is possible that clad failure has occurred. The Palisades Plant Computer (PPC) can be used to find many of the following monitor readings. TSC Chemistry and Reactor Engineering can review appropriate trends to determine if any of these preliminary indicators of clad failure are present.

a. Off Gas Monitor (RIA-0631) high radiation indication or alarm.

b. Charging Pump Entrance Monitor (RIA-2301) high radiation indication or alarm.

c. Waste Gas Monitor (RIA-1113) high radiation indication or alarm.

d. Containment High Range Monitors (RA-2321/-2322) high radiation alarm.

e. Containment Isolation Monitors (RIA-1805, 1806, 1807, and 1808) high radiation indication.

f. Containment Radiation Monitor (RIA-2315) high radiation indication.

g. Containment Noble Gas Monitor (RIA-1817) high radiation alarm.

h. Containment Hydrogen Monitors indicate high concentration.

i. Core Exit Thermocouples indicate high temperature.

j. Primary Coolant System analysis indicates high activity.

k. Abnormally high radiation levels in vicinity of letdown line, NSSS panel, etc.

l. Containment Building Sump Level increasing level indication.

High radiation indications on radiation monitors should be discussed with Health Physics personnel. Emergency Implementing Procedure EI-11, "Determination of Extent of Core Damage," may be useable in determining core damage using containment radiation monitor readings.

4.2 PRELIMINARY DOSE RATE SURVEYS

4.2.1 OSC Chemistry Supervisor requests OSC Health Physics (HP) Supervisor for performance of dose rates and/or air sample surveys of the following areas:

a. NSSS Sample Panel Room

b. Hall to Chemistry Hot Lab

c. Chemistry Hot Lab

d. Count Room

e. Chemistry Grey Lab

4.2.2 OSC HP Supervisor shall ensure:

a. Stay times are computed for ALL individuals required to work in High Radiation areas as surveyed in previous step.

b. HP coverage at sample panel and in labs is commensurate with dose rates and may include:

1. Monitoring dose rates at and around sample panel during all sample acquisition activities.

2. Continuous air sampling at sample panel and in labs during sample analysis.

c. Dosimetry requirements and anti-contamination clothing requirements shall be dictated by the OSC Health Physics Supervisor.

Emergency Implementing Procedure EI-2.1, "Site Emergency Director," contains guidance on Dose Limits and provides for a dose limit of 5 Rem/hr. The Health Physics Supervisor will determine the dose rate and decide if sampling should be performed.

5.0 PROCEDURE

USER ALERT
REFERENCE USE PROCEDURE

Refer to the procedure periodically to confirm that all procedure segments of an activity will be or are being performed. Where required, sign appropriate sign-off blanks to certify that all segments are complete.

5.1 PRIMARY COOLANT SYSTEM SAMPLE LINE RECIRCULATION FOR FAILED FUEL CLASSIFICATION

5.1.1 OSC Chemistry Supervisor shall conduct a pre-job brief in accordance with Palisades Administrative Procedure 1.15, "Performance of Job Briefings" or Emergency Implementing Procedure EI 4.2, "Operational Support Center Activation."

a. The OSC Chemistry Supervisor shall determine the PCS pressure from Operations.

PCS Pressure _____ psig

b The OSC Chemistry Supervisor telephone number _____.

TITLE: EMERGENCY POST ACCIDENT SAMPLING AND DETERMINATION OF FUEL FAILURE USING DOSE RATES

CAUTION

This flush will result in transferring sample water from the reactor or containment sump to the VCT or Chemistry lab drain tank. This may result in increased dose rates in these areas.

5.1.2

IF	THEN
Containment Isolation Signal (CIS) is received	1. OSC Chemistry Supervisor shall request I&C to jumper CV-1910 and CV-1911 per the directions found in Attachment 1. 2. OSC Chemistry Supervisor shall request Operations to reopen CCW Valve CV-944A so that cooling is supplied to the sample coolers per System Operating Procedure SOP-16," Component Cooling Water System." 3 OSC Chemistry Supervisor shall a. Request Operations to open CV-1910 and CV-1911 b. Inform Operations that PCS sample flow will be routed to the Volume Control Tank c. Inform Operations that manipulation of TIS-1901 may cause an alarm in the Control Room.
Containment Isolation Signal (CIS) is not received	OSC Chemistry Supervisor shall a. Request Operations to open CV-1910 and CV-1911 b. Inform Operations that PCS sample flow will be routed to the Volume Control Tank c. Inform Operations that manipulation of TIS-1901 may cause an alarm in the Control Room.

5.1.3 Chemistry Technician shall check or place HS-1912 (Reactor Coolant or Low Pressure Safety Injection (LPSI) selector switch) in the OFF position, to block flow to the EC-168 Control Panel. Switch is located at EC-168 Control Panel.

5.1.4 Chemistry Technician shall verify CV-1912 (Reactor Coolant Sample block valve) CLOSED (green indicator light).Switch is located at EC-168 Control Panel.

5.1.5 Chemistry Technician shall place SS-0210 (selector switch for continuous sample) in the ON position. Switch is located at EC-168 Control Panel.

5.1.6 Chemistry Technician shall place SS-0211 (selector switch for continuous sample) in the ON position. Switch is located at EC-168 Control Panel.

NOTE: Manipulation of the following alarm function may cause an alarm at the panel and in the Control Room.

5.1.7 Chemistry Technician shall verify that temperature indicating switch TIS-1901 is in service. If the Green LED is ON (unit in Manual Mode), enable the alarm function by pushing A/M touch pad. This enters Auto Mode with Green LED off. The lower display will now show SP 0.0. Switch is located at EC-168 Control Panel.

5.1.8

IF	THEN
HI-HI Sample Temp Alarm on C-168 panel exists.	Place HS-1919 to MANUAL.
HI-HI Sample Temp Alarm on C-168 panel does not exist.	Place HS-1919 in AUTO.

5.1.9 Chemistry Technician shall place HS-1916 (Reactor Coolant sample flush switch) in the SAMPLE position.

5.1.10 Chemistry Technician shall verify SV-1917 CLOSED (green indicator light).

5.1.11 Chemistry Technician shall verify SV-1916 OPEN (red indicator light).

5.1.12 Chemistry Technician shall verify CLOSED MV-V37 (gas collection bomb vent)

5.1.13 Chemistry Technician shall verify CLOSED MV-V17 (PCS sx to sink)

5.1.14 Chemistry Technician shall verify CLOSED MV-V41 (gas collection bomb inlet)

5.1.15 Chemistry Technician shall verify CLOSED MV-V42 (gas collection bomb outlet).

5.1.16 Chemistry Technician shall verify OPEN MV-V38 (NSSS to gas collection bomb isolation)

5.1.17 Chemistry Technician shall verify OPEN MV-V39 (gas collection bomb bypass).

5.1.18 Chemistry Technician shall verify OPEN MV-V40 (discharge to VCT).

5.1.19

IF	THEN
PCS pressure is < 2000 psig	Fully Open MV-PC606
PCS pressure is > 2000 psig	No action needed.

5.1.20 At the C-32 panel,

IF	THEN
HS-1901 (NSSS panel C-32 sample selector switch) is in Position 3.	No adjustment is necessary. Proceed to next step.
HS-1901 is not in Position 3.	1. Ensure air control switch CS-5057 in the OFF position. 2. Place the selector hand switch HS-1901 to Position 3. 3. Open the bottom of the C-32 panel and verify position of the solenoid valve as follows: a. OPEN MV-PC163 (SV-1909 isolation) to open discharge from SV-1909. b. CLOSE MV-PC161 (SV-1906 isolation) to close discharge c. CLOSE MV-PC162 (SV-1908 isolation) to close discharge from SV-1908.

5.1.21 Chemistry Technician shall place air control switch CS-5057 in the ON position.

5.1.22 At the C-168 panel, Chemistry Technician shall verify OPEN CV-1910 (Red Indicator Light On).

5.1.23 At the C-168 panel, Chemistry Technician shall verify OPEN CV-1911 (Red Light On).

5.1.24 At the C-168 panel, Chemistry Technician shall verify OPEN CV-1903 (primary coolant loop 2 hot leg sample point) open.

5.1.25 All personnel move to a low dose area.

5.1.26 Allow system to purge for 3 minutes.

5.1.27 Radiation Protection Technician shall take a dose rate at the sample panel door and the NSSS sample panel.

IF	THEN
Dose rate at the NSSS door or panel >5 Rem/hr.	1. SECURE sample flow by placing SV-1916 OFF. 2. SECURE sample flow by placing CS-5057 OFF. 3. Report dose reading to OSC Chemistry Supervisor and OSC HP Supervisor. Elevated dose rates will occur in the Auxiliary Building if sample flow dose rates exceed this value. 4. OSC Chemistry Supervisor shall request Operations to secure CV-1910 and CV-1911. 5. Technicians shall report to OSC. 6. END Procedure
Dose rate at the NSSS panel ≤ 5 Rem/hr when sample flow is initiated.	Proceed to next step.

5.1.28

IF	THEN
HI-HI Temperature Alarm is Clear.	Place HS-1919 to AUTO.
HI-HI Temperature Alarm is not Clear.	1. Verify or place MV-CC175 OPEN. 2. Verify or place MV-CC176 OPEN. 3. Contact OSC Chemistry Supervisor if alarm still does not clear. He will need to contact Operations to determine cause.

5.1.29 All personnel move to a low dose area.

5.1.30 Allow sample flow and discharge to the VCT for a minimum of 20 minutes.

5.1.31 Radiation Protection Technician shall measure the dose rate on contact at the Failed Fuel Survey Point on the PCS sample line.

Dose rate _____ mR/hr Dose Rate Date/Time_____

5.1.32 Chemistry Technician shall place CS-5057 (C-32 panel air control switch) in the OFF position.

5.1.33 At the C-168 panel, Chemistry Technician shall place HS-1916 (reactor coolant sample/flush switch) in the OFF position.

NOTE: The following steps will cause a "PASM Panel Trouble" alarm.

5.1.34 Chemistry Technician shall place SS-0210 (selector switch for continuous sample) in the OFF position.

5.1.35 Chemistry Technician place SS-0211 (selector switch for continuous sample) in the OFF position.

5.1.36 To disable the alarm function for TIS-1901, perform the following:

a. If the Green LED is not lit, push A/M touch pad to enter the Manual Mode (Green LED on).

b. Push the down-arrow pad until output equals 0.0. The display will read OUT 0.0. The Red LED labeled AL1 will remain "ON" if sample temperature is ≥ 90°F.

5.1.37 Chemistry Technician and Radiation Protection Technician shall move to a low dose area and report the dose rate reading to the OSC Chemistry Supervisor.

5.1.38 The OSC and/or TSC Chemistry Supervisor(s) shall use the "NSSS Sample Panel Piping Dose Rates" graph in Attachment 2 to determine fuel failure. Fuel Failure should be defined as <1%, 1-5%, or >5%.

Shutdown Date/Time_____

Hours since shutdown_____

Fuel Failure _____%

Determined By: _____
Signature

5.1.39

IF	THEN
Fuel failure > 5%	A PCS sample will not be obtained due to high dose rates. TSC Chemistry Supervisor shall report results to the Operations Support Group Leader. Refer to EI-1, "Emergency Classification and Actions," Section Fission Product Barriers/Fuel Damage. EI-1, "Emergency Classification and Actions," does not discriminate between 1-5% and >5%. OSC Chemistry Supervisor shall request Operations to CLOSE CV-1910 and CV-1911. Chemistry Technician shall secure: 1. SV-1916 2. CS-5057 **NOTE:** Closing the following valves may cause an alarm. 3. SS-0210 4. SS-0211 Technicians shall report to the OSC. END Procedure
Fuel failure ≤ 5%	TSC Chemistry Supervisor shall report results to the Operations Support Group Leader. Refer to EI-1, "Emergency Classification and Actions," Section Fission Product Barriers/Fuel Damage.

5.1.40

IF	THEN
If PCS sample will not be required	OSC Chemistry shall request Operations to close CV-1910 and CV-1911. Chemistry Technician shall secure: 1. SV-1916 2. CS-5057 **NOTE:** Closing the following valves may cause an alarm. 3. SS-0210 4. SS-0211 Technicians shall report to the OSC.
If PCS sample is required	OSC Supervisor determines which analyses need to be performed. Chemistry Technician determines sample volume based upon required analyses.

5.1.41 Chemistry Technician shall OPEN Valve MV-V17 (PCS sx to sink).

5.1.42 Chemistry Technician shall CLOSE Valve MV-V40 (Discharge to VCT).

5.1.43 All personnel move to a low dose area.

5.1.44 Flush sample line for 5 minutes.

5.1.45 Chemistry Technician shall obtain appropriate volume of PCS sample.

5.1.46 Chemistry Technician shall OPEN valve MV-V40 (discharge to VCT).

5.1.47 Chemistry Technician shall CLOSE Valve MV-V17 (PCS sx to sink).

5.1.48 Chemistry Technician shall place the C-32 panel air control switch CS-5057 in the OFF position.

5.1.49 At the C-168 panel, Chemistry Technician shall place HS-1916 (reactor coolant sample/flush switch) in the OFF position.

NOTE: The following steps may cause an alarm at the panel and in the Control Room.

5.1.50 Chemistry Technician shall Place SS-0210 (selector switch for continuous sample) in the OFF position.

5.1.51 Chemistry Technician shall Place SS-0211 (selector switch for continuous sample) in the OFF position.

5.1.52 To disable the alarm function for TIS-1901 perform the following:

a. If the Green LED is not lit, push A/M touch pad to enter the Manual Mode (Green LED on).

b. Push the down-arrow pad until output equals 0.0. The display will read OUT 0.0. The Red LED labeled AL1 will remain "ON" if sample temperature is ≥ 90° F.

5.1.53 OSC Chemistry Supervisor shall request Operations to close CV-1910 and CV-1911.

5.1.54 Chemistry Technicians shall perform sample and analysis preparation in the Hot Lab Hood. Use sample shield in the Hot Lab as necessary.

5.1.55 Chemistry will perform analyses in accordance with the appropriate analytical procedures. Dilutions may be done to ensure sample dose rates are reduced.

5.1.56 Chemistry Technician shall report results to OSC and TSC Chemistry Supervisors.

5.1.57 OSC Chemistry Supervisor shall request I&C to remove jumpers for CV-1910 and CV-1911, if applicable.

5.2 SUBSEQUENT POST ACCIDENT SAMPLING

Post accident sampling may be performed at the NSSS sample panel or in other areas of the plant using normal or evaluated sample points.

5.2.1 OSC Chemistry Supervisor shall conduct a pre-job brief in accordance with Palisades Administrative Procedure 1.15, "Performance of Job Briefings" or Emergency Implementing Procedure EI 4.2, "Operational Support Center Activation."

a. The OSC Chemistry Supervisor shall determine the PCS pressure from Operations.

PCS Pressure _____ psig

b The OSC Chemistry Supervisor telephone number _____.

5.2.2 Chemistry Supervision shall ensure pre-determined storage and disposal sites of used and unused portions of the sample are specified. Consider returning sample to the containment building if possible.

TITLE: EMERGENCY POST ACCIDENT SAMPLING AND DETERMINATION OF FUEL FAILURE USING DOSE RATES

CAUTION

This sampling will result in transferring sample water from the reactor or containment sump to the VCT or Chemistry lab drain tank. This may result in increased dose rates in these areas.

5.2.3

IF	THEN
Containment Isolation Signal (CIS) is received	1. OSC Chemistry Supervisor shall request I&C to jumper CV-1910 and CV-1911 per the directions found in Attachment 1. 2. OSC Chemistry Supervisor shall request Operations to reopen CCW Valve CV-944A so that cooling is supplied to the sample coolers per System Operating Procedure SOP-16," Component Cooling Water System." 3. OSC Chemistry Supervisor shall a. Request Operations to open CV-1910 and CV-1911 b. Inform Operations that PCS sample flow will be routed to the Volume Control Tank c. Inform Operations that manipulation of TIS-1901 may cause an alarm in the Control Room.
Containment Isolation Signal (CIS) is not received	OSC Chemistry Supervisor shall a. Request Operations to open CV-1910 and CV-1911 b. Inform Operations that PCS sample flow will be routed to the Volume Control Tank c. Inform Operations that manipulation of TIS-1901 may cause an alarm in the Control Room.

5.2.4 Chemistry Technician shall check or place HS-1912 (Reactor Coolant (RC) or Low Pressure Safety Injection (LPSI) selector switch) in the OFF position, to block flow to the EC-168 Control Panel. Switch is located at EC-168 Control Panel.

5.2.5 Chemistry Technician shall verify CV-1912 (Reactor Coolant Sample block valve) CLOSED (green indicator light). Switch is located at EC-168 Control Panel.

5.2.6 Chemistry Technician shall place SS-0210 (selector switch for continuous sample) in the ON position. Switch is located at EC-168 Control Panel.

5.2.7 Chemistry Technician shall place SS-0211 (selector switch for continuous sample) in the ON position. Switch is located at EC-168 Control Panel.

NOTE: Manipulation of the following alarm function may cause an alarm at the panel and in the Control Room.

5.2.8 Chemistry Technician shall verify that temperature indicating switch TIS-1901 is in service. If the Green LED is ON (unit in Manual Mode), enable the alarm function by pushing A/M touch pad. This enters Auto Mode with Green LED off. The lower display will now show SP 0.0.

5.2.9

IF	THEN
HI-HI Sample Temp Alarm on C-168 panel exists.	Place HS-1919 to MANUAL.
HI-HI Sample Temp Alarm on C-168 panel does not exist.	Check that HS-1919 is in AUTO.

5.2.10 Chemistry Technician shall place HS-1916 (Reactor Coolant sample flush switch) in the SAMPLE position.

5.2.11 Chemistry Technician shall verify SV-1917 CLOSED (green indicator light)

5.2.12 Chemistry Technician shall verify SV-1916 OPEN (red indicator light).

5.2.13 Chemistry Technician shall verify CLOSED MV-V37 (gas collection bomb vent)

5.2.14 Chemistry Technician shall verify CLOSED MV-V17 (PCS sx to sink)

5.2.15 Chemistry Technician shall verify CLOSED MV-V41 (gas collection bomb inlet)

5.2.16 Chemistry Technician shall verify CLOSED MV-V42 (gas collection bomb outlet).

5.2.17 Chemistry Technician shall verify OPEN MV-V38 (NSSS to gas collection bomb isolation).

5.2.18 Chemistry Technician shall verify OPEN MV-V39 (gas collection bomb bypass).

5.2.19 Chemistry Technician shall verify OPEN MV-V40 (discharge to VCT).

5.2.20

IF	THEN
PCS pressure is < 2000 psig	Fully Open MV-PC606
PCS pressure is > 2000 psig	No action required.

5.2.21 At the C-32 panel:

IF	THEN
HS-1901 (NSSS panel C-32 sample selector switch) is in Position 3.	No adjustment is necessary. Proceed to next step.
HS-1901 (NSSS panel C-32 sample selector switch) is not in Position 3.	1. Ensure or place air control switch CS-5057 in the OFF position. 2. Place the selector hand switch HS-1901 to Position 3. 3. Open the bottom of the C-32 panel. 4. Verify position of the solenoid valve as follows: a. OPEN MV-PC163 (SV-1909 isolation) to open discharge from SV-1909. b. CLOSE MV-PC161 (SV-1906 isolation) to close discharge from SV-1906. c. CLOSE MV-PC162 (SV-1908 isolation) to close discharge from SV-1908.

5.2.22 Chemistry Technician shall place air control switch CS-5057 in the ON position.

5.2.23 At the C-168 panel, Chemistry Technician shall verify OPEN CV-1910 (Red Indicator Light On).

5.2.24 At the C-168 panel, Chemistry Technician shall verify OPEN CV-1911 (Red Light On).

5.2.25 At the C-168 panel, Chemistry Technician shall verify OPEN CV-1903 (primary coolant loop 2 hot leg sample point) open.

5.2.26 All personnel move to a low dose area.

5.2.27 Allow system to purge for 3 minutes.

5.2.28 Radiation Protection Technician shall take a dose reading at the sample panel door and at the NSSS sample panel.

IF	THEN
Dose rate at the NSSS door or panel> 5 Rem/hr.	Sample will not be obtained. 1. SECURE sample flow by placing SV-1916 OFF. 2. SECURE sample flow by placing CS-5057 OFF. 3. Report dose reading to OSC Chemistry Supervisor and OSC HP Supervisor. Elevated dose rates will occur in the Auxiliary Building if sample flow dose rates exceed this value. 4. OSC Chemistry Supervisor shall request Operations to secure CV-1910 and CV-1911. 5. Technicians shall report to OSC. 6. END procedure.
Dose rate at the NSSS panel ≤ 5 Rem/hr when sample flow is initiated.	Proceed to next step.

5.2.29

IF	THEN
HI-HI Temperature Alarm is Clear.	Place HS-1919 to AUTO.
HI-HI Temperature Alarm is not Clear.	1. Verify or place MV-CC175 OPEN 2. Verify or place MV-CC176 OPEN. 3. Contact OSC Chemistry Supervisor if alarm still does not clear. He will need to contact Operations to determine cause.

5.2.30 All personnel move to a low dose area.

5.2.31 Allow sample flow and discharge to the VCT for a minimum of 20 minutes.

5.2.32 Chemistry Technician shall OPEN Valve MV-V17 (PCS sx to sink).

5.2.33 Chemistry Technician shall CLOSE Valve MV-V40 (Discharge to VCT).

5.2.34 All personnel move to a low dose area.

5.2.35 Flush sample line for 5 minutes.

NOTE: PCS sample volume collected depends on the analyses that will be performed. At the very least, boron and gamma spectroscopy analyses will be done.

5.2.36 Chemistry Technician shall obtain appropriate volume of PCS sample.

5.2.37 Chemistry Technician shall OPEN valve MV-V40 (discharge to VCT).

5.2.38 Chemistry Technician shall CLOSE Valve MV-V17 (PCS sx to sink).

5.2.39 Chemistry Technician shall Place the C-32 panel air control switch CS-5057 in the OFF position.

5.2.40 At the C-168 panel, place HS-1916 (reactor coolant sample/flush switch) in the OFF position.

5.2.41 Chemistry Technician shall place SS-0210 (selector switch for continuous sample) in the OFF position.

5.2.42 Chemistry Technician shall place SS-0211 (selector switch for continuous sample) in the OFF position.

5.2.43 To disable the alarm function for TIS-1901 perform the following:

a. If the Green LED is not lit, push A/M touch pad to enter the Manual Mode (Green LED on).

b. Push the down-arrow pad until output equals 0.0. The display will read out 0.0. The Red LED labeled AL1 will remain "ON" if sample temperature is ≥ 90° F.

5.2.44 OSC Chemistry shall request Operations to close CV-1910 and CV-1911.

5.2.45 Chemistry Technicians shall perform sample and analysis preparation in the Hot Lab Hood. Use sample shield in the Hot Lab as necessary.

5.2.46 Chemistry Technicians shall perform analyses in accordance with the appropriate analytical procedures. Dilutions may be done to ensure sample dose rates are reduced.

5.2.47 Chemistry Technician shall report results to OSC and TSC Chemistry Supervisors.

5.2.48 OSC Chemistry Supervisor shall request I&C to remove jumpers for CV-1910 and CV-1911.

6.0 ATTACHMENTS AND RECORDS

6.1 ATTACHMENTS

6.1.1 Attachment 1, "Jumpering CV-1910 and CV-1911 for PCS Sample or Sample Line Flush"

6.1.2 Attachment 2, "NSSS Sample Panel Piping Dose Rates"

6.2 RECORDS

Records generated by this procedure shall be filed in accordance with Palisades Administrative Procedure 10.46, "Plant Records."

7.0 SPECIAL REVIEWS

The scope of this procedure does include activities that require a 50.59 review per Palisades Administrative Procedure 10.41, "Procedure Initiation and Revision." Therefore, changes to this procedure do require a 50.59 review.

The scope of this procedure does include activities that require a PRC review per Palisades Administrative Procedure 10.41, "Procedure Initiation and Revision." Therefore, changes to this procedure do require a PRC review.

JUMPERING CV-1910 AND CV-1911 FOR PCS SAMPLE OR SAMPLE LINE FLUSH

NOTE: This Attachment cannot be performed if instrument air is not available.

1.0 PURPOSE

This attachment describes the method to be used to jumper containment isolation valves CV-1910 and CV-1911 should they become closed during accident conditions (Containment Isolation). In order to sample the Primary Coolant System (PCS), CV-1910 and CV-1911 must be open.

2.0 REFERENCES

2.1 Palisades Administrative Procedure 9.31, "Temporary Modification Control"

3.0 INITIAL CONDITIONS AND/OR REQUIREMENTS

3.1 CV-1910 and CV-1911 are the containment isolation valves on the PCS chemistry sample lines. In the event of a containment isolation signal due to Containment High Pressure (CHP) and/or Containment High Radiation (CHR), CV-1910 and CV-1911 will close.

3.2 To obtain a sample of the PCS under accident conditions using the NSSS panel, it will be necessary to bypass the CHP and/or CHR relay contacts to open these valves.

4.0 PROCEDURE

4.1 I&C shall verify availability of instrument air before starting Jumpering. This Jumpering can only be performed if instrument air is available. .

4.2 I&C or Electrical Maintenance may obtain jumper set and #10 link nuts from Emergency Maintenance Kit 9 in the Operations Support Center (OSC).

4.3 Request Operations to place HS-1910 and HS-1911 in the open position (CV-1910 and CV-1911 should remain shut.) Advise Operations that while jumpers are being placed, they will lose valve indications. Valve indications will be restored after jumpers are in place.

JUMPERING CV-1910 AND CV-1911 FOR PCS SAMPLE OR SAMPLE LINE FLUSH

4.4 Inside C-13 Panel

NOTE: Circuits involved labeled P1 are 125 VDC positive supply to valve position indication.

a. Locate 13TV4-28 (P1) scheme S-21 (M201, Sheet 40) and open link.

b. Attach appropriate end of jumper to P1 side to link using #10 nut and link wrench.

c. Locate 13TV6C-19 (91) scheme S-21 (M201, Sheet 113), string jumper so that it is out of the way so as not to be pulled apart, and attach other end of jumper using #10 nut and link wrench.

d. Close link at 13TV4-28 (P1) scheme S-21 (opened in a). Verify position indication restored and CV-1910 still closed.

e. Locate 13TV11-112 (P1) scheme S-22 (M201, Sheet 35) and open link.

f. Attach appropriate end of jumper to P1 side of link using #10 nut and link wrench.

g. Locate 13TV8C-24 (91) scheme S-22 (M201, Sheet 113), string jumper along floor under grating so it is out of the way and attach other end of the jumper using #10 nut and link wrench.

h. Close link at 13TV11-112 (P1) scheme S-22 (opened in e). Verify position indication restored and CV-1911 still closed.

4.5 Inform Operations that jumpering operation is complete and to place HS-1910 and HS-1911 in the closed position. Returning either hand switch back to the open position will now cause valves to open.

JUMPERING CV-1910 AND CV-1911 FOR PCS SAMPLE OR SAMPLE LINE FLUSH

WARNING

Once sampling valves are open, a potential exists for High Radiation Fields to be created at the NSSS Panel.

4.6 Request Operations to caution tag HS-1910 and HS-1911 indicating that CHP and CHR relay contacts are jumpered out for CV-1910 and CV-1911.

4.6.1 If the valves remain jumpered open for longer than one shift, then caution tags shall be required.

4.7 **Removal of Jumpers**

4.7.1 I&C or Electrical Maintenance obtain permission from Shift Supervisor to remove jumpers on CV-1910 and CV-1911.

4.7.2 Inside C-13 Panel

NOTE: Circuits involved labeled P1 are 125 VDC positive supply to valve position indication.

a. Locate 13TV11-112 (P1) scheme S-22 and open link.

b. Remove appropriate end of jumper using a link wrench.

c. Locate 13TV8C-24 (91) scheme S-22 (M201, Sheet 113) and remove jumper using a link wrench.

d. Locate 13TV11-112 (P1) scheme S-22 (M201, Sheet 35) and close link.

e. Locate 13TV4-28 (P1) scheme S-21 and open link.

f. Remove appropriate end of jumper using a link wrench.

g. Locate 13TV6C-19 (91) scheme S-21 (M201, Sheet 113) and remove appropriate end of jumper using a link wrench.

h. Locate 13TV4-28 (P1) scheme S-21 (M201, Sheet 40) and close link.

4.7.3 Inform Operations that removal of jumpers is complete.

NSSS SAMPLE PANEL PIPING DOSE RATES