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*	0001	MP	PROC	CH	CP 3804AC LIQUID WASTE SAMPLE SINK		002 02			P	01

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Procedure Action Request

Document No.: CP3804AC	Writer: Mike Fenton Initiator T. Morris	Rev. No. 002	Minor Rev. 02

Title: Liquid Rad Waste Sample Sink

For New Documents: Document is QA ☐ DH Title:

☐ Revision ☑ Minor Revision ☐ Cleanup Revision ☐ Biennial Review

☐ Cancel ☐ Void (Do Not Use) ☐ Expire ☐ Superceded By: ____

Comments: ☒ Administrative Correction FLS: [illegible]

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Approval Date: 7/27/04 Effective Date: 7/29/04

MILLSTON POWER STATION
CHEMISTRY PROCEDURE

STOP THINK ACT REVIEW

Liquid Waste Sample Sink

CP 3804AC

Rev. 002–02

Approval Date: 07/27/04

Effective Date: 07/29/04

Level of Use
General

Liquid Waste Sample Sink

TABLE OF CONTENTS

1. PURPOSE

1.1 Objective

Provide instructions for obtaining the following samples:

- Liquid waste grab samples and low pressure vessel samples from 3SSR–SAS2, liquid waste sample sink ①
- Liquid waste grab samples from alternate sample points

1.2 Discussion

The Sections of this procedure are distinct Sections which can be performed independently of each other.

2. PREREQUISITES

2.1 General

2.1.1 Ventilation is operating at the liquid waste sample sink hood.

2.1.2 Tank being sampled has recirculated for at least the amount of time listed in Attachment 1, "Recirculation Times, Liquid Waste Tanks and Sumps" prior to sampling.

2.2 Tools and Consumables

- Sample bottles
- Lab coat
- Disposable lab gloves
- Demineralized water
- Low pressure sample vessel

Sections 4.19 through 4.22 also require:

- 9/16″ wrench or adjustable wrench ①
- Purge bottle (minimum volume 1.5 liter)

3. PRECAUTIONS

3.1 Samples may be radioactive. Proper Health Physics practices and the RWP must be followed to prevent the spread of contamination.

3.2 Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4. INSTRUCTIONS

4.1 Low Level Waste Drain Tank A Grab Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.1.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

① ①

b. NOTIFY MCRO OR SM/US that low level waste drain tank A sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.1.2 VERIFY open 3SSR–V897, low level waste drain tank 4A sample isolation.

4.1.3 OPEN 3SSR–V230, low level waste drain tank 4A grab valve.

4.1.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI252A
- MEASURE flowrate at outlet of 3SSR–V230, low level waste drain tank 4A grab valve

b. DIVIDE 6 by sample flow rate in lpm to obtain purge time in minutes.

4.1.5 WHEN purge time has elapsed, COLLECT sample.

4.1.6 CLOSE 3SSR–V230, low level waste drain tank 4A grab valve.

– End of Section 4.1 –

4.2 Low Level Waste Drain Tank B Grab Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.2.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that low level waste drain tank B sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.2.2 VERIFY open 3SSR–V896, low level waste drain tank 4B sample isolation.

4.2.3 OPEN 3SSR–V232, low level waste drain tank 4B grab valve.

4.2.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI252B
- MEASURE flowrate at outlet of 3SSR–V232, low level waste drain tank 4B grab valve

b. DIVIDE 6 by sample flow rate in lpm to obtain purge time in minutes.

4.2.5 WHEN purge time has elapsed, COLLECT sample.

4.2.6 CLOSE 3SSR–V232, low level waste drain tank 4B grab valve.

– End of Section 4.2 –

4.3 Waste Test Tank A Grab Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.3.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry ①
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material ①

b. NOTIFY MCRO OR SM/US that waste test tank A sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.3.2 START 3LWS–P8A, waste test tank heating pump, in service as follows: ①

a. PLACE "WASTE TEST TANK HEATING PUMP P8A" pump control switch in "START."

b. WAIT 30 seconds.

4.3.3 VERIFY open 3SSR–V898, waste test tank 3A sample isolation.

4.3.4 OPEN 3SSR–V228, waste test tank 3A grab valve.

4.3.5 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI137
- MEASURE flowrate at outlet of 3SSR–V228, waste test tank 3A grab valve

b. DIVIDE 17 by sample flow rate in lpm to obtain purge time in minutes.

4.3.6 WHEN purge time has elapsed, COLLECT sample.

4.3.7 CLOSE 3SSR–V228, waste test tank 3A grab valve.

4.3.8 PLACE "WASTE TEST TANK HEATING PUMP P8A" pump control switch in "STOP." ①

– End of Section 4.3 –

4.4 Waste Test Tank B Grab Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.4.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

①

①

b. NOTIFY MCRO OR SM/US that waste test tank B sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.4.2 VERIFY open 3SSR–V871, waste test tank 3B sample isolation.

4.4.3 START 3LWS–P8B, waste test tank heating pump, in service as follows: ①

a. PLACE "WASTE TEST TANK HEATING PUMP P8B" pump control switch in "START." ②

b. WAIT 30 seconds. ①

4.4.4 OPEN 3SSR–V856, waste test tank 3B sample grab valve.

4.4.5 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI259
- MEASURE flowrate at outlet of 3SSR–V856, waste test tank 3B sample grab valve

b. DIVIDE 17 by sample flow rate in lpm to obtain purge time in minutes.

4.4.6 WHEN purge time has elapsed, COLLECT sample.

4.4.7 CLOSE 3SSR–V856, waste test tank 3B sample grab valve.

4.4.8 PLACE "WASTE TEST TANK HEATING PUMP P8B" pump control switch in "STOP." ① 10

– End of Section 4.4 –

4.5 High Level Waste Drain Tank A Grab Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.5.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

① ①

b. NOTIFY MCRO OR SM/US that high level waste drain tank A sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.5.2 VERIFY open 3SSR–V900, high level waste drain tank 1A sample isolation.

4.5.3 OPEN 3SSR–V224, high level waste drain tank 1A grab valve.

4.5.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI250A
- MEASURE flowrate at outlet of 3SSR–V224, high level waste drain tank 1A grab valve

b. DIVIDE 5 by sample flow rate in lpm to obtain purge time in minutes.

4.5.5 WHEN purge time has elapsed, COLLECT sample.

4.5.6 CLOSE 3SSR–V224, high level waste drain tank 1A grab valve.

– End of Section 4.5 –

4.6 High Level Waste Drain Tank B Grab Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.6.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that high level waste drain tank B sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.6.2 VERIFY open 3SSR–V899, high level waste drain tank 1B sample isolation.

4.6.3 OPEN 3SSR–V226, high level waste drain tank 1B grab valve.

4.6.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI250B
- MEASURE flowrate at outlet of 3SSR–V226, high level waste drain tank 1B grab valve

b. DIVIDE 5 by sample flow rate in lpm to obtain purge time in minutes.

4.6.5 WHEN purge time has elapsed, COLLECT sample.

4.6.6 CLOSE 3SSR–V226, high level waste drain tank 1B grab valve.

– End of Section 4.6 –

4.7 Waste Demineralizer Effluent Grab Sample

ALARA

Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.7.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that waste demineralizer effluent sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.7.2 VERIFY open 3SSR–V895, waste demineralizer effluent sample isolation.

4.7.3 OPEN 3SSR–V234, waste demineralizer effluent grab valve.

4.7.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI253
- MEASURE flowrate at outlet of 3SSR–V234, waste demineralizer effluent grab valve

b. DIVIDE 4 by sample flow rate in lpm to obtain purge time in minutes.

4.7.5 WHEN purge time has elapsed, COLLECT sample.

4.7.6 CLOSE 3SSR–V234, waste demineralizer effluent grab valve.

– End of Section 4.7 –

4.8 Containment Drains Sump Grab Sample

ALARA

Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.8.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that containment drains sump sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

NOTE

A containment sump sample is routinely collected to monitor the "normal" concentrations of various parameters in the containment drains sump. This information is useful when attempting to identify the possible sources of leakage into the sump when a leak occurs inside containment.

4.8.2 COORDINATE with SM/US to allow containment drains sump level to increase prior to starting 3DAS–P2A or 3DAS–P2B.

4.8.3 OPEN 3SSR–V713, containment sump liquid sample isolation.

4.8.4 OPEN 3SSR–V779, containment sump liquid sample grab valve.

4.8.5 REQUEST SM/US start 3DAS–P2A or 3DAS–P2B.

NOTE

The containment drains sump sample line purge volume is 6.240 liters. Due to the size of the sump and the capacity of the sump pumps, the pumps typically run for less than 1 minute when sump pumpdown is initiated. This short runtime does not allow for sufficient purge and sample collection. Because the containment drains sump pump discharge is the only input into this sample line, any sample collected from this point is representative of the contents of this sump at some time in the past. If desired, this section can be repeated several times to determine the present contents of the sump.

4.8.6 COLLECT containment drains sump sample.

4.8.7 CLOSE 3SSR–V779, containment sump liquid sample grab valve.

4.8.8 CLOSE 3SSR–V713, containment sump liquid sample isolation.

4.8.9 NOTIFY SM/US that you have completed sampling containment drains sump.

– End of Section 4.8 –

4.9 Waste Bottom Holding Tank Liquid Grab Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.9.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that waste bottom holding tank liquid sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.9.2 REQUEST Chemistry Supervision provide purge volume.

4.9.3 VERIFY open 3SSR–V782, waste bottom sample isolation.

4.9.4 OPEN 3SSR–V777, waste bottom sample grab valve.

4.9.5 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI296
- MEASURE flowrate at outlet of 3SSR–V777, waste bottom sample grab valve

b. DIVIDE purge volume provided by Chemistry Supervision by sample flow rate in lpm to obtain purge time in minutes.

4.9.6 WHEN purge time has elapsed, COLLECT sample.

4.9.7 CLOSE 3SSR–V777, waste bottom sample grab valve.

– End of Section 4.9 –

4.10 Low Level Waste Drain Tank A Low Pressure Vessel Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.10.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that low level waste drain tank A sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.10.2 VERIFY open 3SSR–V897, low level waste drain tank 4A sample isolation.

4.10.3 OPEN 3SSR–V230, low level waste drain tank 4A grab valve.

4.10.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI252A
- MEASURE flowrate at outlet of 3SSR–V230, low level waste drain tank 4A grab valve

b. DIVIDE 6 by sample flow rate in lpm to obtain purge time in minutes.

4.10.5 WHEN purge time has elapsed, INSERT sample vessel into quick connects inside sample sink.

4.10.6 CLOSE 3SSR–V230, low level waste drain tank 4A grab valve.

4.10.7 OPEN sample vessel inlet valve.

4.10.8 OPEN sample vessel outlet valve.

4.10.9 CLOSE sample vessel outlet valve.

4.10.10 VERIFY sample vessel does not leak.

4.10.11 OPEN sample vessel outlet valve.

4.10.12 CALCULATE sample vessel purge time as follows:

NOTE

The sample vessel volume is normally stamped on the sample vessel.

a. MULTIPLY sample vessel volume in liters by 5 to obtain purge volume in liters.

_____ liters • 5 = _____ purge volume

b. OBSERVE flow rate on 3SSR–FI252A.

c. DIVIDE purge volume in liters by sample flow rate in lpm to obtain sample vessel purge time in minutes.

4.10.13 WHEN sample vessel purge time has elapsed, CLOSE sample vessel outlet valve.

4.10.14 CLOSE sample vessel inlet valve.

4.10.15 OPEN 3SSR–V230, low level waste drain tank 4A grab valve.

4.10.16 REMOVE sample vessel from sample sink quick connects.

4.10.17 CLOSE 3SSR–V230, low level waste drain tank 4A grab valve.

– End of Section 4.10 –

4.11 Low Level Waste Drain Tank B Low Pressure Vessel Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.11.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that low level waste drain tank B sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.11.2 VERIFY open 3SSR–V896, low level waste drain tank 4B sample isolation.

4.11.3 OPEN 3SSR–V232, low level waste drain tank 4B grab valve.

4.11.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI252B
- MEASURE flowrate at outlet of 3SSR–V232, low level waste drain tank 4B grab valve

b. DIVIDE 6 by sample flow rate in lpm to obtain purge time in minutes.

4.11.5 WHEN purge time has elapsed, INSERT sample vessel into quick connects inside sample sink.

4.11.6 CLOSE 3SSR–V232, low level waste drain tank 4B grab valve.

4.11.7 OPEN sample vessel inlet valve.

4.11.8 OPEN sample vessel outlet valve.

4.11.9 CLOSE sample vessel outlet valve.

4.11.10 VERIFY sample vessel does not leak.

4.11.11 OPEN sample vessel outlet valve.

4.11.12 CALCULATE sample vessel purge time as follows:

NOTE

The sample vessel volume is normally stamped on the sample vessel.

a. MULTIPLY sample vessel volume in liters by 5 to obtain purge volume in liters.

_____ liters • 5 = _____ purge volume

b. OBSERVE flow rate on 3SSR–FI252B.

c. DIVIDE purge volume in liters by sample flow rate in lpm to obtain sample vessel purge time in minutes.

4.11.13 WHEN sample vessel purge time has elapsed, CLOSE sample vessel outlet valve.

4.11.14 CLOSE sample vessel inlet valve.

4.11.15 OPEN 3SSR–V232, low level waste drain tank 4B grab valve.

4.11.16 REMOVE sample vessel from sample sink quick connects.

4.11.17 CLOSE 3SSR–V232, low level waste drain tank 4B grab valve.

– End of Section 4.11 –

4.12 Waste Test Tank A Low Pressure Vessel Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.12.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

① ①

b. NOTIFY MCRO OR SM/US that waste test tank A sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.12.2 VERIFY open 3SSR–V898, waste test tank 3A sample isolation.

4.12.3 OPEN 3SSR–V228, waste test tank 3A grab valve.

4.12.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI137
- MEASURE flowrate at outlet of 3SSR–V228, waste test tank 3A grab valve

b. DIVIDE 17 by sample flow rate in lpm to obtain purge time in minutes.

4.12.5 WHEN purge time has elapsed, INSERT sample vessel into quick connects inside sample sink.

4.12.6 CLOSE 3SSR–V228, waste test tank 3A grab valve.

4.12.7 OPEN sample vessel inlet valve.

4.12.8 OPEN sample vessel outlet valve.

4.12.9 CLOSE sample vessel outlet valve.

4.12.10 VERIFY sample vessel does not leak.

4.12.11 OPEN sample vessel outlet valve.

4.12.12 CALCULATE sample vessel purge time as follows:

NOTE

The sample vessel volume is normally stamped on the sample vessel.

a. MULTIPLY sample vessel volume in liters by 5 to obtain purge volume in liters.

_____ liters • 5 = _____ purge volume

b. OBSERVE flow rate on 3SSR–FI137.

c. DIVIDE purge volume in liters by sample flow rate in lpm to obtain sample vessel purge time in minutes.

4.12.13 WHEN sample vessel purge time has elapsed, CLOSE sample vessel outlet valve.

4.12.14 CLOSE sample vessel inlet valve.

4.12.15 OPEN 3SSR–V228, waste test tank 3A grab valve.

4.12.16 REMOVE sample vessel from sample sink quick connects.

4.12.17 CLOSE 3SSR–V228, waste test tank 3A grab valve.

– End of Section 4.12 –

4.13 Waste Test Tank B Low Pressure Vessel Sample

ALARA

Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.13.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

①

①

b. NOTIFY MCRO OR SM/US that waste test tank B sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.13.2 VERIFY open 3SSR–V871, waste test tank 3B sample isolation.

4.13.3 OPEN 3SSR–V856, waste test tank 3B sample grab valve.

4.13.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI259
- MEASURE flowrate at outlet of 3SSR–V856, waste test tank 3B sample grab valve

b. DIVIDE 17 by sample flow rate in lpm to obtain purge time in minutes.

4.13.5 WHEN purge time has elapsed, INSERT sample vessel into quick connects inside sample sink.

4.13.6 CLOSE 3SSR–V856, waste test tank 3B sample grab valve.

4.13.7 OPEN sample vessel inlet valve.

4.13.8 OPEN sample vessel outlet valve.

4.13.9 CLOSE sample vessel outlet valve.

4.13.10 VERIFY sample vessel does not leak.

4.13.11 OPEN sample vessel outlet valve.

4.13.12 CALCULATE sample vessel purge time as follows:

NOTE

The sample vessel volume is normally stamped on the sample vessel.

a. MULTIPLY sample vessel volume in liters by 5 to obtain purge volume in liters.

_____ liters • 5 = _____ purge volume

b. OBSERVE flow rate on 3SSR–FI259.

c. DIVIDE purge volume in liters by sample flow rate in lpm to obtain sample vessel purge time in minutes.

4.13.13 WHEN sample vessel purge time has elapsed, CLOSE sample vessel outlet valve.

4.13.14 CLOSE sample vessel inlet valve.

4.13.15 OPEN 3SSR–V856, waste test tank 3B sample grab valve.

4.13.16 REMOVE sample vessel from sample sink quick connects.

4.13.17 CLOSE 3SSR–V856, waste test tank 3B sample grab valve.

– End of Section 4.13 –

4.14 High Level Waste Drain Tank A Low Pressure Vessel Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.14.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that high level waste drain tank A sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.14.2 VERIFY open 3SSR–V900, high level waste drain tank 1A sample isolation.

4.14.3 OPEN 3SSR–V224, high level waste drain tank 1A grab valve.

4.14.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI250A
- MEASURE flowrate at outlet of 3SSR–V224, high level waste drain tank 1A grab valve

b. DIVIDE 5 by sample flow rate in lpm to obtain purge time in minutes.

4.14.5 WHEN purge time has elapsed, INSERT sample vessel into quick connects inside sample sink.

4.14.6 CLOSE 3SSR–V224, high level waste drain tank 1A grab valve.

4.14.7 OPEN sample vessel inlet valve.

4.14.8 OPEN sample vessel outlet valve.

4.14.9 CLOSE sample vessel outlet valve.

4.14.10 VERIFY sample vessel does not leak.

4.14.11 OPEN sample vessel outlet valve.

4.14.12 CALCULATE sample vessel purge time as follows:

NOTE

The sample vessel volume is normally stamped on the sample vessel.

a. MULTIPLY sample vessel volume in liters by 5 to obtain purge volume in liters.

_____ liters • 5 = _____ purge volume

b. OBSERVE flow rate on 3SSR–FI250A.

c. DIVIDE purge volume in liters by sample flow rate in lpm to obtain sample vessel purge time in minutes.

4.14.13 WHEN sample vessel purge time has elapsed, CLOSE sample vessel outlet valve.

4.14.14 CLOSE sample vessel inlet valve.

4.14.15 OPEN 3SSR–V224, high level waste drain tank 1A grab valve.

4.14.16 REMOVE sample vessel from sample sink quick connects.

4.14.17 CLOSE 3SSR–V224, high level waste drain tank 1A grab valve.

– End of Section 4.14 –

4.15 High Level Waste Drain Tank B Low Pressure Vessel Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.15.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that high level waste drain tank B sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.15.2 VERIFY open 3SSR–V899, high level waste drain tank 1B sample isolation.

4.15.3 OPEN 3SSR–V226, high level waste drain tank 1B grab valve.

4.15.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI250B
- MEASURE flowrate at outlet of 3SSR–V226, high level waste drain tank 1B grab valve

b. DIVIDE 5 by sample flow rate in lpm to obtain purge time in minutes.

4.15.5 WHEN purge time has elapsed, INSERT sample vessel into quick connects inside sample sink.

4.15.6 CLOSE 3SSR–V226, high level waste drain tank 1B grab valve.

4.15.7 OPEN sample vessel inlet valve.

4.15.8 OPEN sample vessel outlet valve.

4.15.9 CLOSE sample vessel outlet valve.

4.15.10 VERIFY sample vessel does not leak.

4.15.11 OPEN sample vessel outlet valve.

4.15.12 CALCULATE sample vessel purge time as follows:

NOTE

The sample vessel volume is normally stamped on the sample vessel.

a. MULTIPLY sample vessel volume in liters by 5 to obtain purge volume in liters.

_____ liters • 5 = _____ purge volume

b. OBSERVE flow rate on 3SSR–FI250B.

c. DIVIDE purge volume in liters by sample flow rate in lpm to obtain sample vessel purge time in minutes.

4.15.13 WHEN sample vessel purge time has elapsed, CLOSE sample vessel outlet valve.

4.15.14 CLOSE sample vessel inlet valve.

4.15.15 OPEN 3SSR–V226, high level waste drain tank 1B grab valve.

4.15.16 REMOVE sample vessel from sample sink quick connects.

4.15.17 CLOSE 3SSR–V226, high level waste drain tank 1B grab valve.

– End of Section 4.15 –

4.16 Waste Demineralizer Effluent Low Pressure Vessel Sample

ALARA

Radiological conditions may be more severe following an accident.
Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.16.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that waste demineralizer effluent sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.16.2 VERIFY open 3SSR–V895, waste demineralizer effluent sample isolation.

4.16.3 OPEN 3SSR–V234, waste demineralizer effluent grab valve.

4.16.4 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI253
- MEASURE flowrate at outlet of 3SSR–V234, waste demineralizer effluent grab valve

b. DIVIDE 4 by sample flow rate in lpm to obtain purge time in minutes.

4.16.5 WHEN purge time has elapsed, INSERT sample vessel into quick connects inside sample sink.

4.16.6 CLOSE 3SSR–V234, waste demineralizer effluent grab valve.

4.16.7 OPEN sample vessel inlet valve.

4.16.8 OPEN sample vessel outlet valve.

4.16.9 CLOSE sample vessel outlet valve.

4.16.10 VERIFY sample vessel does not leak.

4.16.11 OPEN sample vessel outlet valve.

4.16.12 CALCULATE sample vessel purge time as follows:

NOTE

The sample vessel volume is normally stamped on the sample vessel.

a. MULTIPLY sample vessel volume in liters by 5 to obtain purge volume in liters.

_____ liters • 5 = _____ purge volume

b. OBSERVE flow rate on 3SSR–FI253.

c. DIVIDE purge volume in liters by sample flow rate in lpm to obtain sample vessel purge time in minutes.

4.16.13 WHEN sample vessel purge time has elapsed, CLOSE sample vessel outlet valve.

4.16.14 CLOSE sample vessel inlet valve.

4.16.15 OPEN 3SSR–V234, waste demineralizer effluent grab valve.

4.16.16 REMOVE sample vessel from sample sink quick connects.

4.16.17 CLOSE 3SSR–V234, waste demineralizer effluent grab valve.

– End of Section 4.16 –

4.17 Containment Drains Sump Low Pressure Vessel Sample

ALARA

Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.17.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that containment drains sump sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

NOTE

A containment sump sample is routinely collected to monitor the "normal" concentrations of various parameters in the containment drains sump. This information is useful when attempting to identify the possible sources of leakage into the sump when a leak occurs inside containment.

4.17.2 COORDINATE with SM/US to allow containment drains sump level to increase prior to starting 3DAS–P2A or 3DAS–P2B.

4.17.3 INSERT sample vessel into quick connects inside sample sink.

4.17.4 OPEN sample vessel inlet valve.

4.17.5 OPEN sample vessel outlet valve.

4.17.6 OPEN 3SSR–V713, containment sump liquid sample isolation.

4.17.7 REQUEST SM/US start 3DAS–P2A or 3DAS–P2B.

NOTE

The containment drains sump sample line purge volume is 6.240 liters. Due to the size of the sump and the capacity of the sump pumps, the pumps typically run for less than 1 minute when sump pumpdown is initiated. This short runtime does not allow for sufficient purge and sample collection. Because the containment drains sump pump discharge is the only input into this sample line, any sample collected from this point is representative of the contents of this sump at some time in the past. If desired, this section can be repeated several times to determine the present contents of the sump.

4.17.8 CALCULATE sample vessel purge time as follows:

NOTE

The sample vessel volume is normally stamped on the sample vessel.

a. MULTIPLY sample vessel volume in liters by 5 to obtain purge volume in liters.

_____ liters • 5 = _____ purge volume

b. OBSERVE flow rate on 3SSR–FI294.

c. DIVIDE purge volume in liters by sample flow rate in lpm to obtain sample vessel purge time in minutes.

4.17.9 WHEN sample vessel purge time has elapsed, CLOSE sample vessel outlet valve.

4.17.10 CLOSE sample vessel inlet valve.

4.17.11 OPEN 3SSR–V779, containment sump liquid sample grab valve.

4.17.12 REMOVE sample vessel from sample sink quick connects.

4.17.13 CLOSE 3SSR–V779, containment sump liquid sample grab valve.

4.17.14 CLOSE 3SSR–V713, containment sump liquid sample isolation.

4.17.15 NOTIFY SM/US that you have completed sampling containment drains sump.

– End of Section 4.17 –

4.18 Waste Bottom Holding Tank Low Pressure Vessel Sample

ALARA

Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.18.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from liquid waste sample sink
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that waste bottom holding tank sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.18.2 REQUEST Chemistry Supervision provide purge volume.

4.18.3 VERIFY open 3SSR–V782, waste bottom sample isolation.

4.18.4 OPEN 3SSR–V777, waste bottom sample grab valve.

4.18.5 CALCULATE purge time as follows:

NOTE

16 gallons/hour = 1 liter/minute

a. DETERMINE sample flow rate in lpm using one of the following methods:

- OBSERVE flow rate on 3SSR–FI296
- MEASURE flowrate at outlet of 3SSR–V777, waste bottom sample grab valve

b. DIVIDE purge volume provided by Chemistry Supervision by sample flow rate in lpm to obtain purge time in minutes.

4.18.6 WHEN purge time has elapsed, INSERT sample vessel into quick connects inside sample sink.

4.18.7 CLOSE 3SSR–V777, waste bottom sample grab valve.

4.18.8 OPEN sample vessel inlet valve.

4.18.9 OPEN sample vessel outlet valve.

4.18.10 CLOSE sample vessel outlet valve.

4.18.11 VERIFY sample vessel does not leak.

4.18.12 OPEN sample vessel outlet valve.

4.18.13 CALCULATE sample vessel purge time as follows:

NOTE

The sample vessel volume is normally stamped on the sample vessel.

a. MULTIPLY sample vessel volume in liters by 5 to obtain purge volume in liters.

_____ liters • 5 = _____ purge volume

b. OBSERVE flow rate on 3SSR–FI296.

c. DIVIDE purge volume in liters by sample flow rate in lpm to obtain sample vessel purge time in minutes.

4.18.14 WHEN sample vessel purge time has elapsed, CLOSE sample vessel outlet valve.

4.18.15 CLOSE sample vessel inlet valve.

4.18.16 OPEN 3SSR–V777, waste bottom sample grab valve.

4.18.17 REMOVE sample vessel from sample sink quick connects.

4.18.18 CLOSE 3SSR–V777, waste bottom sample grab valve.

– End of Section 4.18 –

4.19 Low Level Waste Drain Tank A Alternate Sample Point

ALARA

Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.19.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from sample point
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that low level waste drain tank A sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.19.2 PROCEED to 3LWS–PI68A, low level waste drain pump 3LWS–P7A discharge pressure instrument, with the following:

- 9/16″ wrench or adjustable wrench
- Purge bottle (minimum volume 1.5 liter)
- Sample bottle(s)

4.19.3 Refer To Attachment 2 and REMOVE cap from test connection.

4.19.4 OPEN test valve and PURGE at least 1.5 liters and CLOSE test valve. ①

4.19.5 OPEN test valve and COLLECT sample and CLOSE test valve.

4.19.6 REPEAT step 4.19.5 for additional samples.

4.19.7 CAP test connection.

– End of Section 4.19 –

4.20 Low Level Waste Drain Tank B Alternate Sample Point

ALARA

Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.20.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from sample point
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that low level waste drain tank B sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.20.2 PROCEED to 3LWS–PI68B, low level waste drain pump 3LWS–P7B discharge pressure instrument, with the following:

- 9/16″ wrench or adjustable wrench
- Purge bottle (minimum volume 1.5 liter)
- Sample bottle(s)

4.20.3 Refer To Attachment 2 and REMOVE cap from test connection.

4.20.4 OPEN test valve and PURGE at least 1.5 liters and CLOSE test valve. ①

4.20.5 OPEN test valve and COLLECT sample and CLOSE test valve.

4.20.6 REPEAT step 4.20.5 for additional samples.

4.20.7 CAP test connection.

– End of Section 4.20 –

4.21 Waste Test Tank A Alternate Sample Point

ALARA

Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.21.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from sample point
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that waste test tank A sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.21.2 PROCEED to 3LWS–PI55A, waste test tank pump 3LWS–P6A discharge pressure instrument, with the following:

- 9/16″ wrench or adjustable wrench
- Purge bottle (minimum volume 1.5 liter)
- Sample bottle(s)

4.21.3 Refer To Attachment 2 and REMOVE cap from test connection.

4.21.4 OPEN test valve and PURGE at least 1.5 liters and CLOSE test valve. ①

4.21.5 OPEN test valve and COLLECT sample and CLOSE test valve.

4.21.6 REPEAT step 4.21.5 for additional samples.

4.21.7 CAP test connection.

– End of Section 4.21 –

4.22 Waste Test Tank B Alternate Sample Point

ALARA

Radiological conditions may be more severe following an accident. Health Physics assessment and support is necessary when sampling during post–accident conditions.

4.22.1 IF sample is being collected during post–accident conditions, PERFORM the following:

a. CONSULT with Health Physics and DETERMINE the following:

- Protective clothing
- Respiratory protection
- Dosimetry
- Route to be followed to and from sample point
- Stay times
- Expected dose and dose rate
- Sample volume
- Sample handling precautions
- Any other Health Physics requirements needed to keep liquid PASS team personnel radiation exposure ALARA and to reduce the spread of radioactive material

b. NOTIFY MCRO OR SM/US that waste test tank A sample will be collected by a Liquid Waste PASS Team consisting of the following:

- At least one Chemistry Technician
- At least one Health Physics Technician

4.22.2 PROCEED to 3LWS–PI55B, waste test tank pump 3LWS–P6B discharge pressure instrument, with the following:

- 9/16″ wrench or adjustable wrench
- Purge bottle (minimum volume 1.5 liter)
- Sample bottle(s)

4.22.3 Refer To Attachment 2 and REMOVE cap from test connection.

4.22.4 OPEN test valve and PURGE at least 1.5 liters and CLOSE test valve. ①

4.22.5 OPEN test valve and COLLECT sample and CLOSE test valve.

4.22.6 REPEAT step 4.22.5 for additional samples.

4.22.7 CAP test connection.

– End of Section 4.22 –

5. REVIEW AND SIGNOFF

5.1 N/A

6. REFERENCES

6.1 Unit 3 FSAR

6.2 S & W DWG. No. 12179–EM–106A, "Radioactive Liquid Waste & Aerated Drains"

6.3 S & W DWG. No. 12179–EM–106B, "Radioactive Liquid Waste & Aerated Drains"

6.4 S & W DWG. No. 12179–EM–106C, "Radioactive Liquid Waste & Aerated Drains"

6.5 S & W DWG. No. 12179–EM–144D, "Reactor Plant Sampling"

6.6 Millstone Unit 3 "Technical Data Summary"

6.7 REMODCM, Section I, Table C–3, Note b

6.8 OPS Form 3311A–1, "Reactor Plant Sample Panel Pre–Start Lineup"

7. SUMMARY OF CHANGES

7.1 Incorporated the following previously approved changes:

- Change 1: Changed position of 3SSR–V783 and 3SSR–V713 to correspond with Ops valve line–up.

7.2 Added instructions for collecting liquid waste samples following an accident.

7.3 Added steps to calculate purge time instead of using a pre–established purge time.

7.4 Added steps to secure purge into sink while purging sample vessel to collect low pressure vessel sample.

Summary of Changes – Rev 002–01

- Added steps to allow collection of LLWDT samples from alternate sample point.
- Added basis reference to FSAR 11.5.2.5 which discusses the purging of sample lines prior to collecting a sample.
- Added steps to start Waste Test Tank Heating Pump P8A prior to sampling and to stop pump when sampling is complete.
- Deleted steps for sampling Liquid Waste Evaporator System
- Added steps to allow collection of WTT samples from alternate sample point.

Summary of Changes – Rev 002–02

- Editorial correction in section 4.4

Attachment 1
Recirculation Times, Liquid Waste Tanks and Sumps
(Sheet 1 of 1)

(1) MAXIMUM OPERATING VOLUME
(2) AVG PUMP FLOW RATE AT DISCHARGE HEAD

TANK SUMP ID	A(1) TANK SUMP CAPACITY	PUMP IDENTIFICATION	B(2) PUMP CAPACITY (GPM/HEAD)	EDUCTOR (✓) OR N/A	EDUCTOR RECIRC/ FLOW RATE	RECIRC TIMES (2 VOLUME)
WASTE EVAPORATOR 3LWS–EV1	6,800 gal	3LWS–P2	(4,000 gpm/head)	N/A	N/A	4 min
HIGH LEVEL WASTE DISTILLATE TANK 3LWS–TK1A/B	25,000 gal (each)	3LWS–P1A/B	(35 gpm/187 ft)	✓	140 gpm	357 min
WASTE DISTILLATE TANK 3LWS–TK2	500 gal	3LWS–P5	(50 gpm/212 ft)	N/A	N/A	20 min
WASTE TEST TANKS 3LWS–TK3A/3B	21,000 gal (each)	3LWS–P8A/8B	(60 gpm/97 ft)	✓	240 gpm	175 min
LOW LEVEL WASTE DRAINS TANK 3LWS–TK4A/4B	4,000 gal (each)	3LWS–P7A/7B	(50 gpm/97 ft)	✓	200 gpm	40 min
WASTE BOTTOMS HOLDING TANK 3LWS–TK5	3,000 gal	3LWS–P9	(50 gpm/65 ft)	N/A	N/A	120 min

NOTE: Taken from figure 6.1, "Recirculation Times, Liquid Waste Tanks and Sumps" of Millstone Unit 3 "Technical Data Summary"

Attachment 2
Instrument Valve Block Configuration
(Sheet 1 of 1)