

CAMP 701

SECONDARY SYSTEM AND WATER TREATMENT PLANT SAMPLE POINTS

*Two → after article
to be examined*

DOCUMENT TYPE: Technical

CLASSIFICATION: NNSR

REVISION: 17

EFFECTIVE DATE: May 7, 2002

REVIEWER: N/A

APPROVAL AUTHORITY: Manager of Chemistry

PROCEDURE OWNER (title): Manager of Chemistry

OWNER GROUP: Chemistry

Verified Current Copy: _____
Signature Date Time

List pages used for Partial Performance

Controlling Work Document Numbers

A/176

SECONDARY SYSTEM AND WATER TREATMENT
PLANT SAMPLE POINTS

1.0 PURPOSE

This procedure provides a list of approved sample points, their location, minimum purge volumes for secondary sample collection, and additional sampling guidance as appropriate for secondary water chemistry and water treatment.

2.0 PREREQUISITES

Appropriate collection bottles

3.0 PRECAUTIONS AND LIMITATIONS

NOTE: Sample points not included in this procedure require Chemistry lab supervisor approval prior to use.

- 3.1 In certain instances, alternate sample points may be required to determine the effects, if any, of sample tubing runs.
- 3.2 Care should be taken when sampling at points other than the sample panels. These points will not have gone through a heat exchanger and may be hot. They may also be under pressure.
- 3.3 Sampling in the primary sample room requires the technician to work under a standing RWP. All steps shall be taken to comply with the standing RWP procedure (NP 4.2.21).
- 3.4 When samples have activity greater than $1.00 \text{ E-3 } \mu\text{Ci/cc}$ Beta/Gamma or, $1.00 \text{ E-3 } \mu\text{Ci/cc } {}^1\text{H}^3$, the handling precautions of CAMP 602 shall be followed.
- 3.5 Secondary samples collected in the primary sample room are to be considered contaminated until verified not to be contaminated.
- 3.6 The discharge of sink sample hoses shall always be directed away from the sampler when first opening any sink sample valve.
- 3.7 Wear heavy gloves to protect hands from possible burns when obtaining steam generator blowdown filter outlet samples.
- 3.8 Samples for anion analysis may be grabbed on the discharge of a thoroughly flushed cation column if the cations present in the sample cause matrix problems.
- 3.9 Sampling and handling shall be done in accordance with NP 3.2.1.

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NOTE: Steps 5.2.3 and 5.2.4 can be completed concurrently if sampling both steam generators.

5.2.3 IF sampling the A S/G in the Primary Sample Sink,
THEN perform the following:

NOTE: RE-219 might alarm in the control room due to low flow.

- a. Inform the control room that RE-219 might alarm due to low flow.
- b. Open SS-148 and SS-151.
- c. Purge the line per Attachment A for "A" Steam Generator Controlled Side Sample Room.
- d. Shut SS-148 and SS-151.
- e. Open SS-146 and SS-152.
- f. Collect appropriate sample volume.
- g. Shut SS-146 and SS-152.
- h. IF RE-219 alarmed,
THEN contact the control room to see if you should reset the alarm.

5.2.4 IF sampling the B S/G in the Primary Sample Sink,
THEN perform the following:

NOTE: RE-219 might alarm in the control room due to low flow.

- a. Inform the control room that RE-219 might alarm due to low flow.
- b. Open SS-149 and SS-151.
- c. Purge the line per Attachment A for "A" Steam Generator Controlled Side Sample Room.
- d. Shut SS-149 and SS-151.
- e. Open SS-147 and SS-153.
- f. Collect appropriate sample volume.
- g. Shut SS-147 and SS-153.

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ATTACHMENT A
TABLE OF PURGE VOLUMES FOR SECONDARY SYSTEM

NOTE: Hotwell conductivity verification to be sampled at outlet of installed conductivity cell.

Unit 1 Grab Samples			
Sample	Valve Number	Location	Min. Purge Volume (ml)
Condensate Pump Discharge ⁴	1SS-68	Sample Panel Turbine Hall 8'	6600 ¹
Steam Generator Feed Pump Suction	1SS-69	Sample Panel Turbine Hall 8'	11100 ¹
5B Feedwater Heater Outlet ⁴	1SS-70	Sample Panel Turbine Hall 8'	13700 ¹
Heater Drain Tank ¹	1SS-71	Sample Panel Turbine Hall 8'	8800 ¹
Auxiliary Feed	1SS-72	Sample Panel Turbine Hall 8'	4000 ¹
Main Steam	1SS-73	Sample Panel Turbine Hall 8'	36300 ¹
Hotwell 1, 2, 3, 4	1CS84F 1CS84G	8' Level U1 Turbine Hall	3200 ¹ N/A
"A" Steam Generator ⁵	1FI-4251A	SGBD Panel Turbine Hall 8'	145000
"B" Steam Generator ⁵	1FI-4253A	SGBD Panel Turbine Hall 8'	137000 ¹
"A" Steam Generator	1SS-152	U1 Controlled Side Sample Room	300 ²
"B" Steam Generator	1SS-153	U1 Controlled Side Sample Room	300 ³
Steam Generator Blowdown Filter Out	1-MS-310	Aux. Bldg. 8' Level South	200
Steam Generator Blowdown Filter Inlet	1-MS-302	Aux. Bldg. 8' Level South	1700
Steam Generator Blowdown Filter Inlet	1-MS-306	Aux. Bldg. 8' Level South	1600
Radwaste Steam Condensate Return	RW-7	8' U1 Turbine Hall	2300

¹ Samples that have continuous flow.

² Minimum purge volume when there is continuous flow through FI-04251A (minimum purge volume when NOT continuous is 72900ml).

³ Minimum purge volume when there is continuous flow through FI-04253A (minimum purge volume when NOT continuous is 65900 ml).

⁴ Integrated samples for condensate pump discharge, 5B feedwater heater outlet, and heater drain tank are taken from 1SS-38, 1SS-40, and 1SS-41, respectively.

⁵ Anion samples for SG1A and SG1B are taken from 1FI-4251C and 1FI-4253C, respectively.

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ATTACHMENT B
TABLE OF COMMON GRAB SAMPLES FOR SECONDARY SYSTEM

Sample	Valve Number	Location	Min. Purge Volume (ml)
"A" Condensate Storage Tank	AF-13B	26' Turbine Hall	100
"B" Condensate Storage Tank	AF-14B	26' Turbine Hall	100
Heating Boiler Feed/Condensate	AF-68B	8' U2 Turbine Hall (SW corner)	300
"A" House Heating Boiler	HV-757	26' U2 Turbine Hall	600
"B" House Heating Boiler	HV-771	26' U2 Turbine Hall	1000
1P29 Auxiliary Feed Pump Suction	1AF25	8' Level Turbine Hall	100
1P29 Auxiliary Feed Pump Leakoff	Local	8' Level Turbine Hall	900 ¹
P38A Auxiliary Feed Pump Suction	AF38	8' Level Turbine Hall	100
P38A Auxiliary Feed Pump Leakoff	Local	8' Level Turbine Hall	900 ¹
P38B Auxiliary Feed Pump Suction	AF51	8' Level Turbine Hall	100
P38B Auxiliary Feed Pump Leakoff	Local	8' Level Turbine Hall	1500 ¹
2P29 Auxiliary Feed Pump Suction	2AF63	8' Level Turbine Hall	100
2P29 Auxiliary Feed Pump Leakoff	Local	8' Level Turbine Hall	900 ¹
Unit 1 Service Water Overboard	SW-146H	8' Level U1 Control Side	500 ²
Unit 2 Service Water Overboard	SW-104H	8' Level Turbine Hall	500 ³

- ¹ Samples that have a continuous drip or flow.
- ² Minimum purge volume when service water return header pump is running (minimum purge volume when NOT running is 3000 ml).
- ³ Minimum purge volume when service water return header pump is running (minimum purge volume when NOT running is 9800 ml).

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ATTACHMENT C
WATER TREATMENT GRAB SAMPLES (continued)

Sample	Valve Number	Location	Root Valve	Min. Purge Volume(ml)
"C" Reverse Osmosis Feedwater	WT-651C	U2 TH 8'/U17C	WT-650C	100
"C" Manual Feedwater SDI Sample	WT-654C	U2 TH 8'/U17C	WT-650C	200
F-225C First Stage "A" Membrane Outlet	WT-665C	U2 TH 8'/U17C	WT-650C	100
F-226C First Stage "B" Membrane Outlet	WT-666C	U2 TH 8'/U17C	WT-650C	100
F-227C First Stage "C" Membrane Outlet	WT-667C	U2 TH 8'/U17C	WT-650C	100
F-228C Second Stage "A" Membrane Outlet	WT-668C	U2 TH 8'/U17C	WT-650C	100
F-229C Second Stage "B" Membrane Outlet	WT-669C	U2 TH 8'/U17C	WT-650C	100
F-230C Third Stage "A" Membrane Outlet	WT-670C	U2 TH 8'/U17C	WT-650C	100
F-231C Third Stage "B" Membrane Outlet	WT-671C	U2 TH 8'/U17C	WT-650C	100
F-232C Fourth Stage "A" Membrane Outlet	WT-672C	U2 TH 8'/U17C	WT-650C	100
F-233C Fourth Stage "B" Membrane Outlet	WT-673C	U2 TH 8'/U17C	WT-650C	100
"C" Reverse Osmosis Product	WT-662C	U2 TH 8'/U17C	WT-650C	100
"C" Reverse Osmosis Reject	WT-660C	U2 TH 8'/U17C	WT-650C	100
"A" Cation Inlet	WT-303A	U10A	WT-300A	100
"B" Cation Inlet	WT-303B	U10B	WT-300B	100
"C" Cation Inlet	WT-303C	U10C	WT-300C	100
"A" Cation Outlet	FI-9354A	WT Sample Panel	WT 312A	16000
"B" Cation Outlet	FI-9354B	WT Sample Panel	WT 312B	14500
"C" Cation Outlet	FI-9354C	WT Sample Panel	WT 312C	13000
Deaerator Outlet ²				
"A" Anion Inlet	WT 403A	U14A	WT 402A	600
"B" Anion Inlet	WT 403B	U14B	WT 402B	600
"C" Anion Inlet	WT 403C	U14C	WT 402C	600
"A" Anion 2/3	FI-9363A	WT Sample Panel	WT 413A	15400
"B" Anion 2/3	FI-9363B	WT Sample Panel	WT 413B	15100
"C" Anion 2/3	FI-9363C	WT Sample Panel	WT 413C	16500
"A" Anion Outlet	FI-9369A	WT Sample Panel	WT 412A	14200
"B" Anion Outlet	FI-9369B	WT Sample Panel	WT 412B	13900
"C" Anion Outlet	FI-9369C	WT Sample Panel	WT 412C	15300
"A" Mixed Bed Outlet	FI-9378A	WT Sample Panel	WT 512A	9200
"B" Mixed Bed Outlet	FI-9378B	WT Sample Panel	WT 512B	9200
Water Treatment Reverse Osmosis Reject	WT-688	U2 TH 8' Sample Panel	WT-687	14000
Neutralizing Tank Sample	WT-58	WT Bench Sink	WT-57	500

² Sample the deaerator outlet at the online anion inlet listed below.