

An Assessment of PWR Steam Generator Condensation at the Oregon State University APEX Facility

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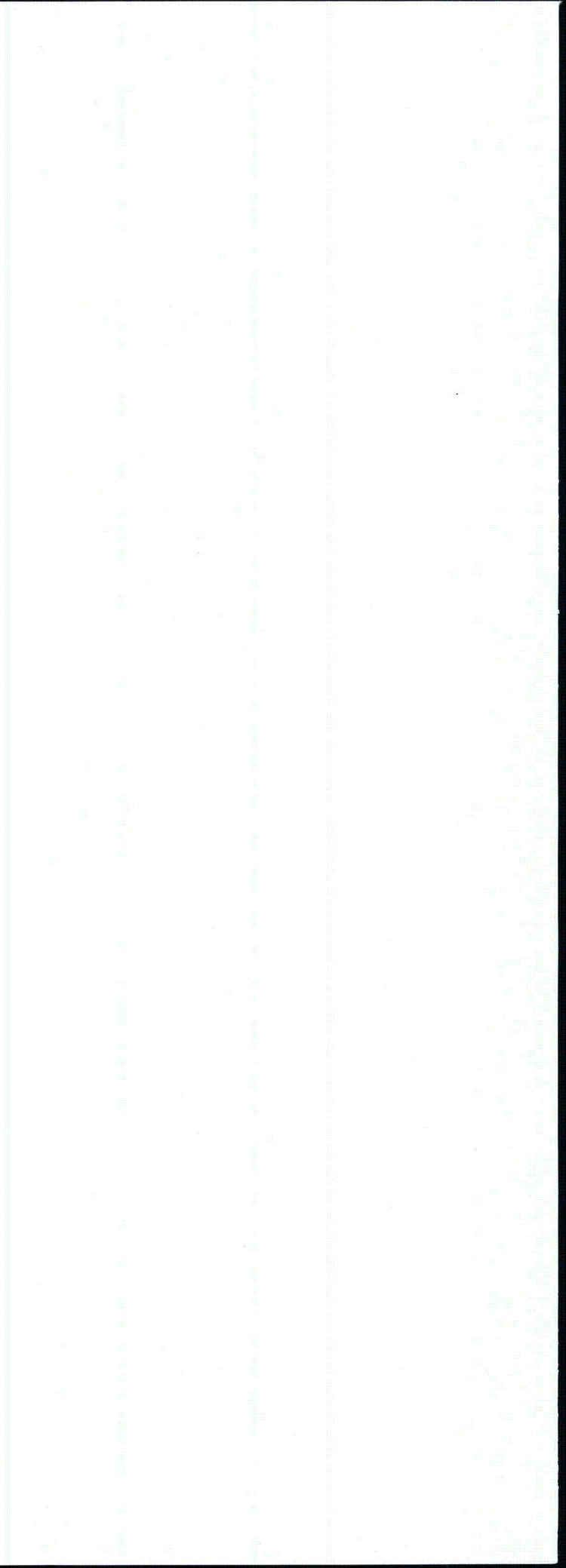
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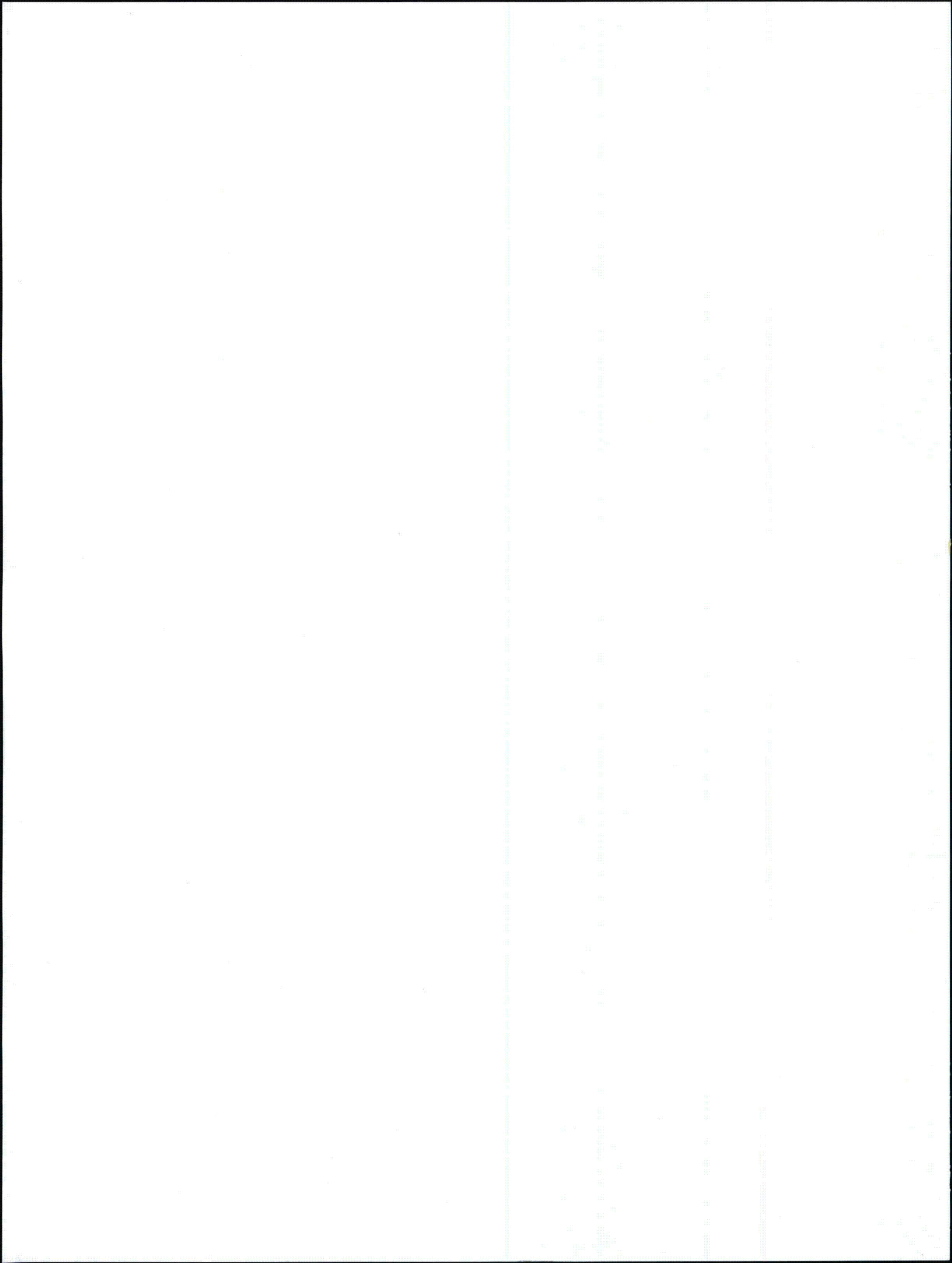
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ABSTRACT

This report describes the testing to assess steam generator U-tube steam condensation conducted at the Oregon State University Advanced Plant Experiment Test Facility from 2005 through 2007. Eight separate steam generator condensation tests were sponsored by the Nuclear Regulatory Commission and completed at the APEX test facility. These tests were designed to evaluate steam condensation rates in a scaled Pressurized Water Reactor steam generator at various primary and secondary side pressures and inlet steam mass flow rates. Two of the tests included the presence of non-condensable gases. The experimental data will provide a basis to assess TRACE steam generator modeling techniques and to assist in development of improved models for condensation and steam generator thermal-hydraulics.



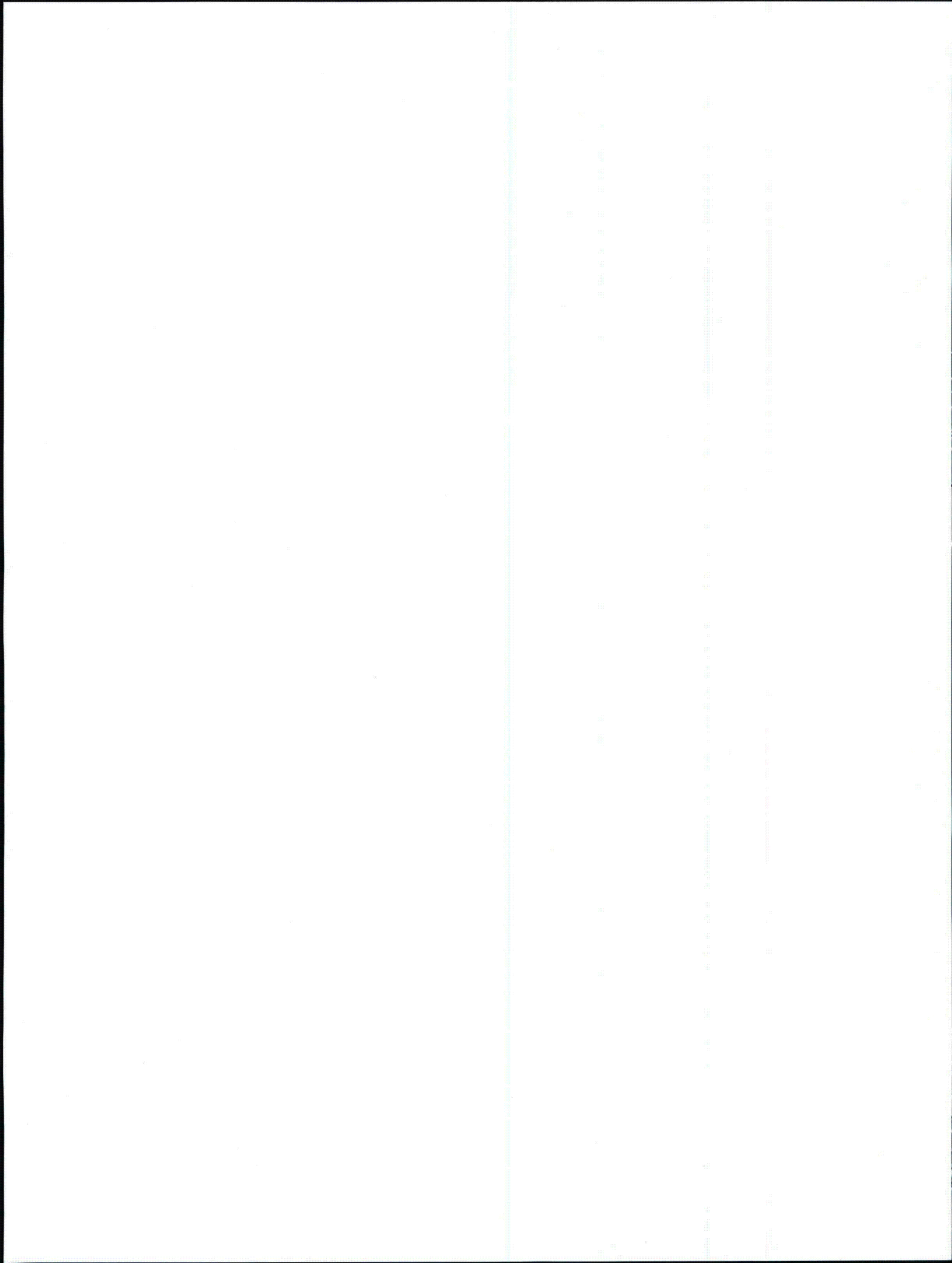
FOREWORD

Many pressurized water reactor (PWR) nuclear power plants use U-tube steam generators. When a significant amount of the coolant inventory is lost from the primary system of these plants during a small break loss-of-coolant accident (SBLOCA), natural circulation between the reactor vessel and steam generators via hot legs becomes one of the primary means of removing decay heat. Steam produced by the core condenses in the steam generator tubes, and drains back to the reactor vessel. Drainage back to the vessel can be impeded by the steam and, for high enough flow rates, held up within the steam generator tubes. Reactor safety analysis codes must be able to predict this phenomenon, referred to as reflux condensation, in order to accurately determine the vessel inventory and the possibility of core heat-up.

The U.S. Nuclear Regulatory Commission (NRC) has consolidated its thermal hydraulic computer codes into TRACE. The TRACE code is intended to analyze a broad range of postulated accidents and operational transients in different types of nuclear power plants. TRACE is the abbreviation of TRAC (Transient Reactor Analysis Code) and RELAP (Reactor Excursion and Leak Analysis Program) Advanced Computational Engine and is a best-estimate code designed to predict realistic plant behavior during an accident. In order to determine if TRACE is capable of predicting reflux condensation, it must be assessed against prototypic experimental data.

Only limited reflux condensation test data are available to the NRC for low pressure conditions. These conditions are of interest for some scenarios important in new reactor designs. To help overcome the shortcoming in the experimental database, the NRC sponsored a series of eight tests in the Advanced Plant Experiment (APEX) Facility at the Oregon State University. The assessment against these additional data from the APEX facility will strengthen the technical basis of applying the TRACE code for analyzing the reflux condensation phase of SBLOCAs in PWRs.

The APEX facility steam generator models the Westinghouse Delta-75 steam generator and contains 133 U-tubes of the prototypical diameter but a quarter length of full size steam generator tubes. The eight APEX tests provide data in the range of primary side pressures between 0.37 MPa (54 psia) and 2.19 MPa (318 psia) with the inlet steam flow Reynolds numbers between 2000 and 12,000.



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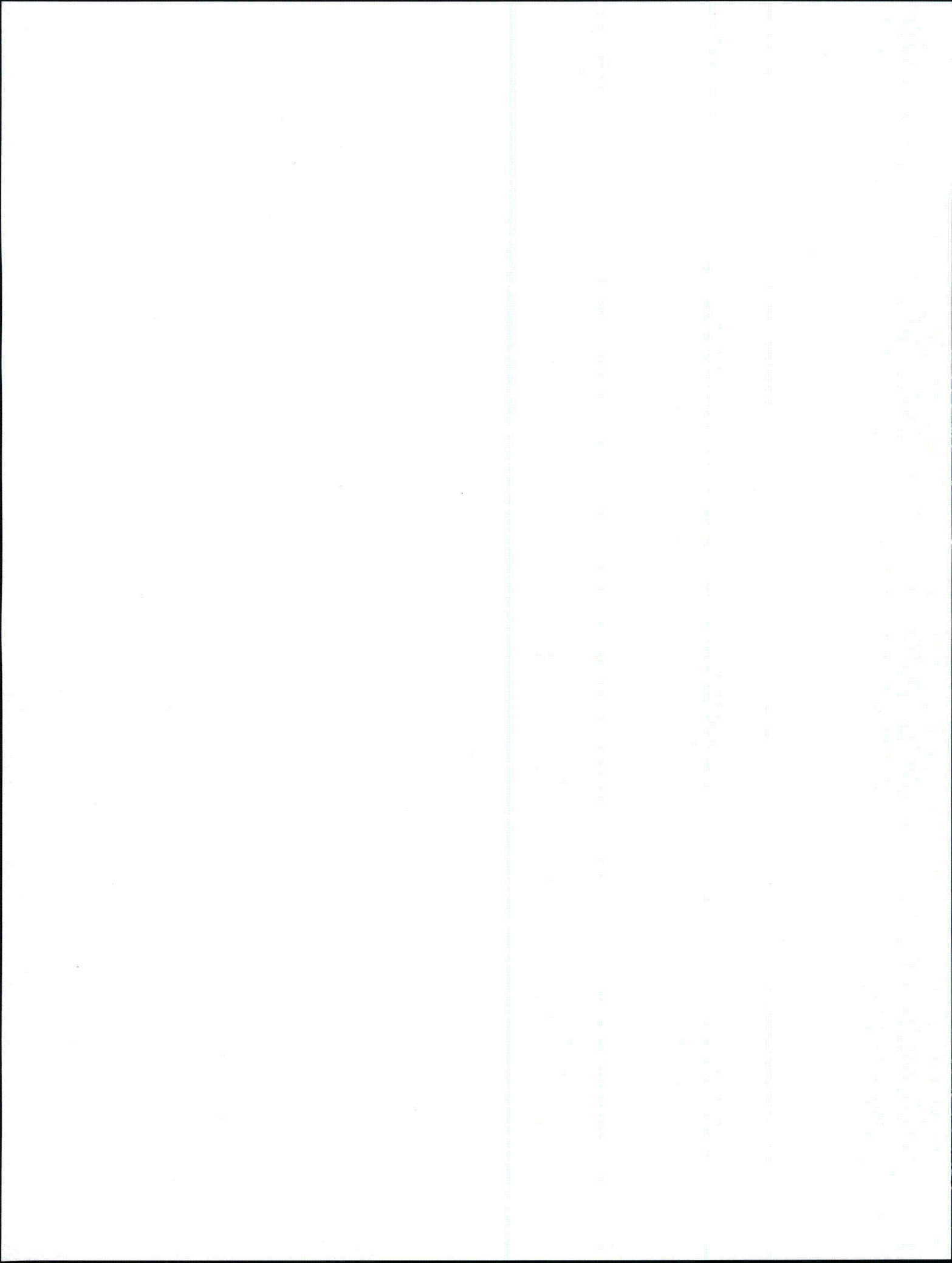
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EXECUTIVE SUMMARY

This report describes the results of Oregon State University (OSU) research conducted from 2005 through 2007 at the OSU Advanced Plant Experiment (APEX) test facility. The objective of this proposed work is to conduct a series of reflux condensation tests using the steam generators (SG) at the OSU APEX facility. The experimental data will provide a basis to assess the TRAC (Transient Reactor Analysis Code) RELAP (Reactor Excursion and Leak Analysis Program) Advanced Computational Engine (TRACE) steam generator modeling techniques and to assist in development of improved models for condensation and steam generator thermal-hydraulics.

Steam generator thermal-hydraulics plays an important role in small break LOCAs, and codes such as TRACE must be able to simulate those physical processes accurately. Reflux condensation, which refers to the processes of condensation within the steam generator tubes and the rate at which the condensate can flow back to the reactor vessel, is particularly difficult to model. Greater reliance on reflux condensation has been proposed as part of accident management in new and advanced reactors, by intentionally depressurizing the secondary side of the steam generator during a suspected small break LOCA. This test program was conducted to provide additional data at the lower range of pressures where this intentional secondary side depressurization will drive the primary side pressure.

Eight separate SG condensation tests were conducted as part of this test program. For tests -01 through -06, the nominal test pressure was varied between each test. These tests were conducted without the presence of a non-condensable gas. Tests -07 and -08 were conducted at the same test pressure as one another; however the percentage of non-condensable gas was varied between the two tests. For the test program, tube side inlet steam pressure varied between 0.37 MPa to 2.19 MPa.

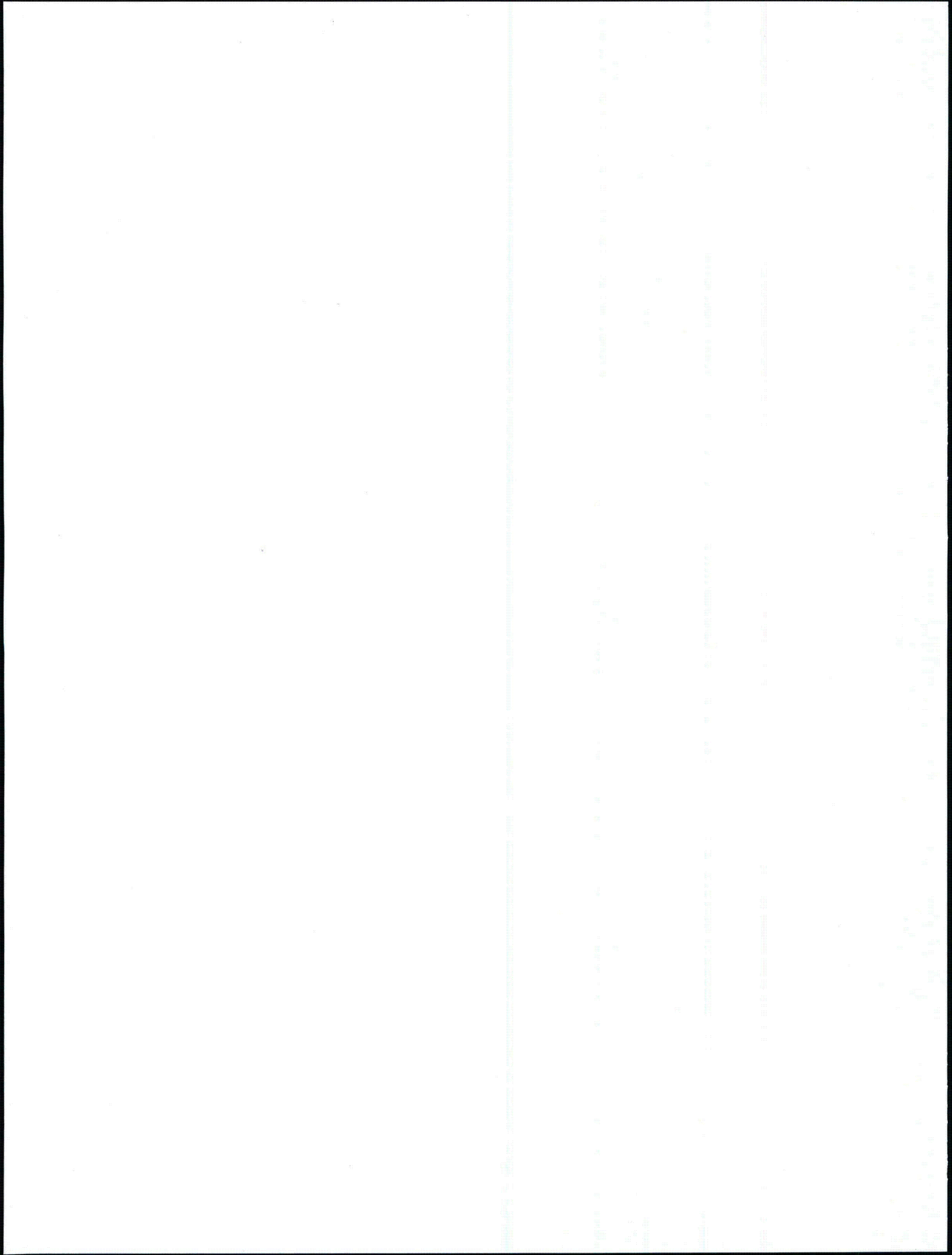
Based on the SG condensation experiments completed at the APEX test facility, the following conclusions can be made:

1. During these tests, with the exception on test 6-5, the condensation rates experienced in the CL and HL sides of the SG tubes are approximately equal with no distinctive pattern emerging.
2. The condensate flow for the test steps above a Re_{film} of approximately 60, exhibited characteristics indicative of turbulent flow in the condensate film. This represented the majority of the test steps performed. The condensate flow for the test steps below a Re_{film} of approximately 60, exhibited characteristics indicative of the transition between laminar-wavy and turbulent flow. Purely laminar or laminar-wavy condensate film flow was not indicated in any of the test steps.
3. The film Prandtl number may directly impact the U-tube SG condensation heat transfer independent of the film Reynolds number. It appears that tests with the smallest film Prandtl number may have a flatter slope when investigating the correlation between Nu_{mod} and Re_{film} than tests with larger film Prandtl numbers. However, to make general conclusion on this point a wider range of film Reynolds numbers should be tested for both small and large film Prandtl number tests.
4. A carryover ratio, quantifying the difference in film condensation between the up and down side of the U-tubes, has been defined. The condensation heat transfer appears to be independent of the carryover ratio. The carryover ratio remained constant at one (indicating equal condensation on up and down sides) for all test steps herein except for one. The test step showing the largest carryover ratio exhibited the greatest non-dimensional interfacial shear stress of all the test steps. Further testing is needed to make more general conclusions concerning the influence of interfacial shear stress on the carryover ratio.
5. The carryover ratio and condensation heat transfer appear to be independent of the inlet steam Reynolds number within the range of steam Reynolds numbers (2000-12000) investigated.

6. Two tests were completed that compared condensation in a steam only environment to condensation with the presence of nitrogen. Test -07 used a nitrogen mass fraction of 2.5 % while test -08 used a nitrogen mass fraction of 10.0%. Both non-condensable gas tests exhibited a small degradation in condensate heat transfer over their steam only counterparts. Of note is the fact that the presence of non-condensable gas induced more condensation on the up side of the U-tubes and less condensation on the down side of the U-tubes. This tendency became greater as the non-condensable concentration increased.

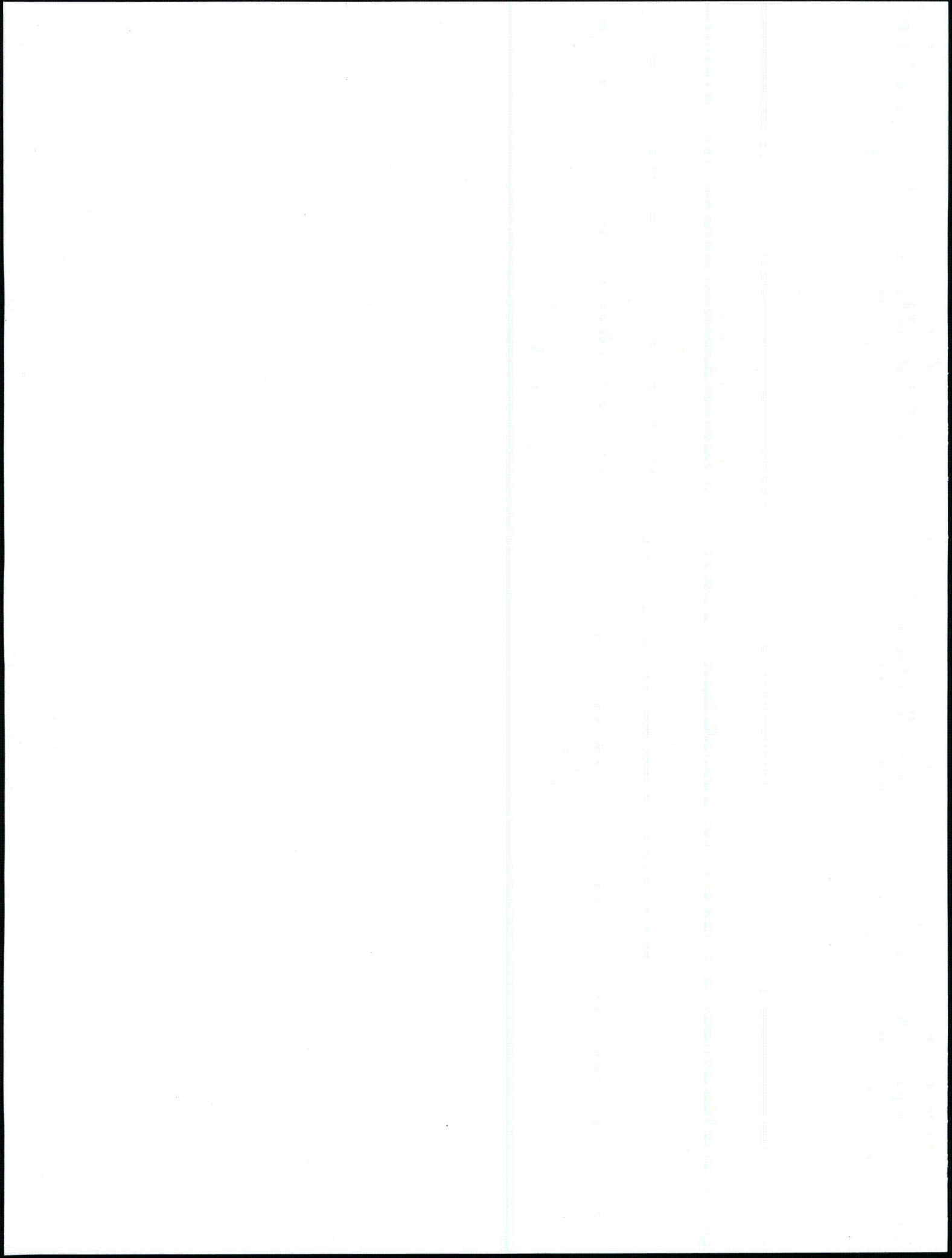
ABBREVIATIONS

ACC	accumulator
ADS	automatic depressurization system
AP1000	Westinghouse Advanced Passive 1000 MWe Plant
APEX	Advanced Plant Experiment
BAMS	break and ADS measurement system
CFR	Code of Federal Regulation
CL	cold leg
CMT	core makeup tank
CVS	chemical volume system
DAS	data acquisition system
DP	differential pressure
DVI	direct vessel injection
FVM	vortex flow meter
HL	hot leg
Hx	heat exchanger
IRWST	in-containment refueling water storage tank
LDP	differential pressure level
LOCA	loss of coolant accident
NRC	US Nuclear Regulatory Commission
NSSS	nuclear steam supply system
OSU	Oregon State University
PC	process controller
PLC	programmable logic controller
PRHR	passive residual heat removal system
PT	pressure transducer
PWR	pressurized water reactor
PZR	pressurizer
RCS	reactor coolant system
RCP	reactor coolant pump
RELAP	Reactor Excursion and Leak Analysis Program
RPV	reactor pressure vessel
SCR	silicon controlled rectifiers
SCXI	signal conditioning extension for instrumentation
SG	steam generator
TF	fluid temperature
TRAC	Transient Reactor Analysis Code
TRACE	TRAC-RELAP Advanced Computational Engine
T/C	thermocouple



NOMENCLATURE

A	steam generator surface area [m ²]
$c_{p,f}$	fluid specific heat [J/kg-K]
d	degradation factor
D	inside tube diameter [m]
E	energy [J]
f_i	interfacial friction factor
G_g	mean gas mass flux [kg/m ² -s]
G_i	inlet gas mass flux [kg/m ² -s]
G_o	outlet gas mass flux [kg/m ² -s]
g	acceleration of gravity [m/s ²]
h	mean heat transfer coefficient [W/m ² -K]
h_i	heat transfer coefficient inside of tubes [W/m ² -K]
h_o	heat transfer coefficient outside of tubes [W/m ² -K]
$j_{g,critical}$	complete flooding gas superficial velocity [m/s]
k_f	fluid thermal conductivity [W/m-K]
k_w	wall thermal conductivity [W/m-K]
m	mass [kg]
M	molecular weight [kg/kmol]
P_r	critical pressure ratio
q''	heat flux [W/m ²]
r_i	inside tube radius [m]
r_o	outside tube radius [m]
R_p	surface roughness [μ m]
T_m	mean temperature difference [K]
ΔT_{in}	temperature difference between heat exchanger inlets [K]
ΔT_{out}	temperature difference between heat exchanger outlets [K]
U	overall heat transfer coefficient [W/m ² -K]
C	carryover ratio
c	Wallis flooding correlation coefficient
Nu_{mod}	modified Nusselt number
Pr_{film}	film Prandtl number
Re_{film}	film Reynolds number (total)
$Re_{film,nc}$	film Reynolds number with non-condensable gas present (total)
$Re_{film,up}$	film Reynolds number (up side)
$Re_{film,down}$	film Reynolds number (down side)
$Re_{stm,inlet}$	steam Reynolds number (inlet)
Re_{stm}	steam Reynolds number (average)
τ_i^*	non-dimensional interfacial shear stress
Γ	film mass flow rate per unit width [kg/m-s]
μ_f	fluid absolute viscosity [N-s/m ²]
μ_g	gas absolute viscosity [N-s/m ²]
ρ_f	fluid density [kg/m ³]
ρ_g	gas density [kg/m ³]



1 INTRODUCTION

This report describes the results of Oregon State University (OSU) research conducted from 2005 through 2007 at the OSU Advanced Plant Experiment (APEX) test facility. The objective of this proposed work is to conduct a series of reflux condensation tests using the steam generators (SG) at the OSU APEX facility. The experimental data will provide a basis to assess TRACE steam generator modeling techniques and to assist in development of improved models for condensation and steam generator thermal-hydraulics. Figure 1.1 describes the tasks performed by OSU as part of this research program.

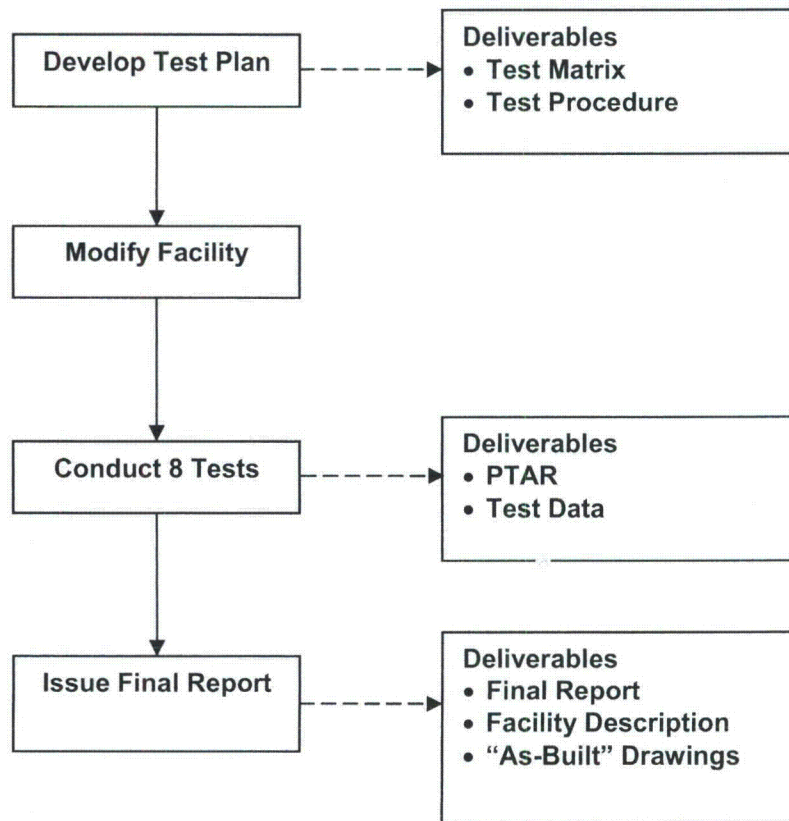
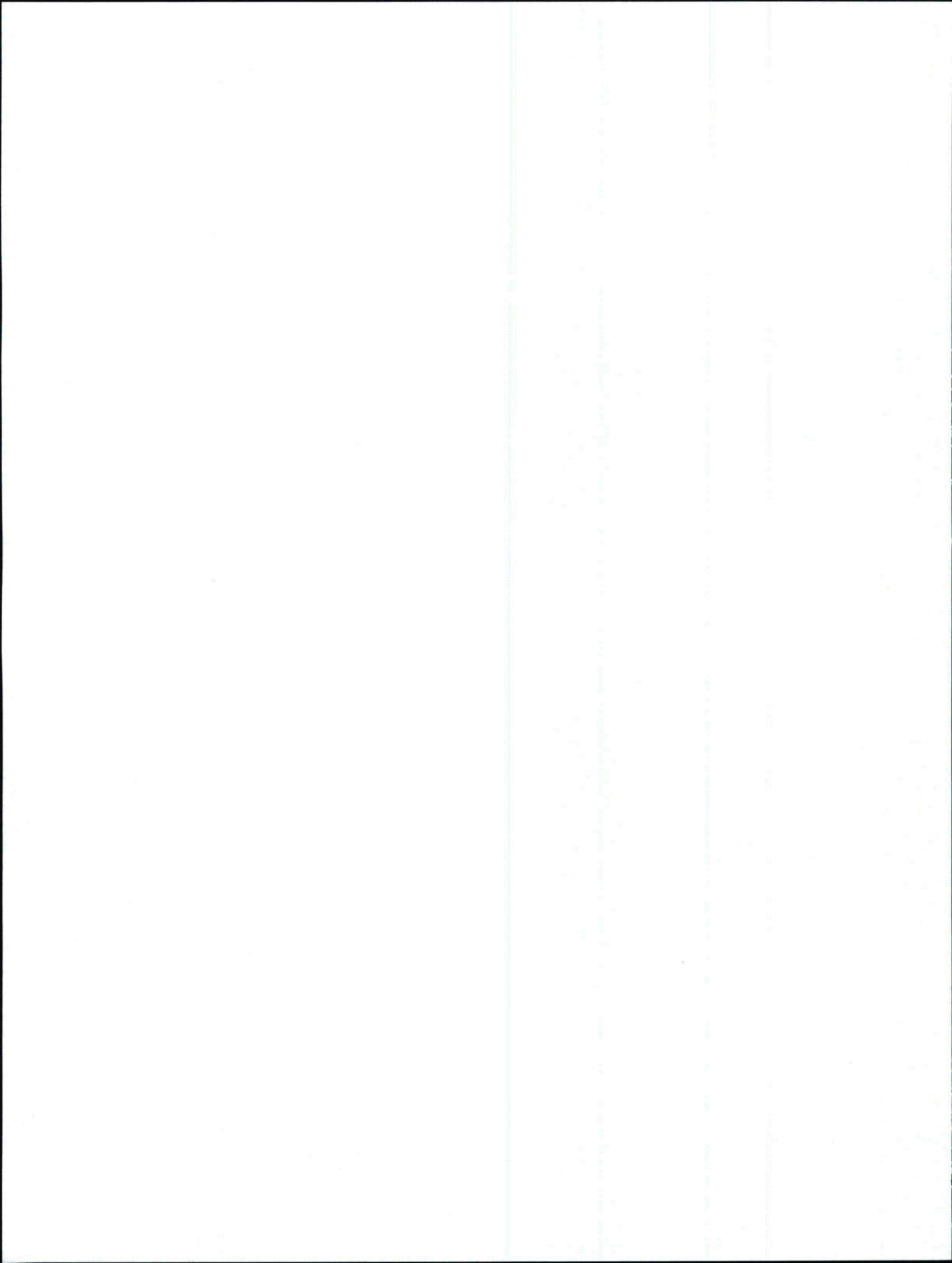


Figure 1.1 Research Plan for APEX SG Condensation Testing Program at OSU

Steam generator thermal-hydraulics plays an important role in small break LOCAs, and codes such as TRACE must be able to simulate those physical processes accurately. Reflux condensation, which refers to the processes of condensation within the steam generator tubes and the rate at which the condensate can flow back to the reactor vessel, is particularly difficult to model. Greater reliance on reflux condensation has been proposed as part of accident management in new and advanced reactors, by intentionally depressurizing the secondary side of the steam generator during a suspected small break LOCA. This test program was conducted to provide additional data at the lower range of pressures where this intentional secondary side depressurization will drive the primary side pressure.



2 FACILITY DESCRIPTION

The APEX test facility at OSU, shown in Figure 2.1, has been specifically designed and constructed to provide high quality data for use in computer code benchmark calculations. APEX presently simulates the reactor coolant system, the core makeup tanks (CMT), the automatic depressurization system (ADS), the in-containment refueling water storage tank (IRWST), and the lower containment structures of a Westinghouse Advanced Passive 1000 MWe plant (AP1000). The test facility is a one fourth height, one half time scale, reduced pressure and temperature integral systems test facility. All of the reactor coolant system components are constructed of stainless steel 304 and can be operated up to its design temperature and pressure limits of 505 K (450 °F) and 3.2 MPa (400 psig). All primary system components are insulated to minimize heat loss. In order to conduct the subject test program, the APEX test facility (described in this section) was modified to isolate SG #1 from the primary loop piping. These modifications are described in Section 3.

The APEX test facility is housed in a three story bay having 900 square feet of floor space and an additional two story control room area having 400 square feet of floor space. This provides adequate space for all test components and supporting systems such that tests can be performed efficiently and safely.

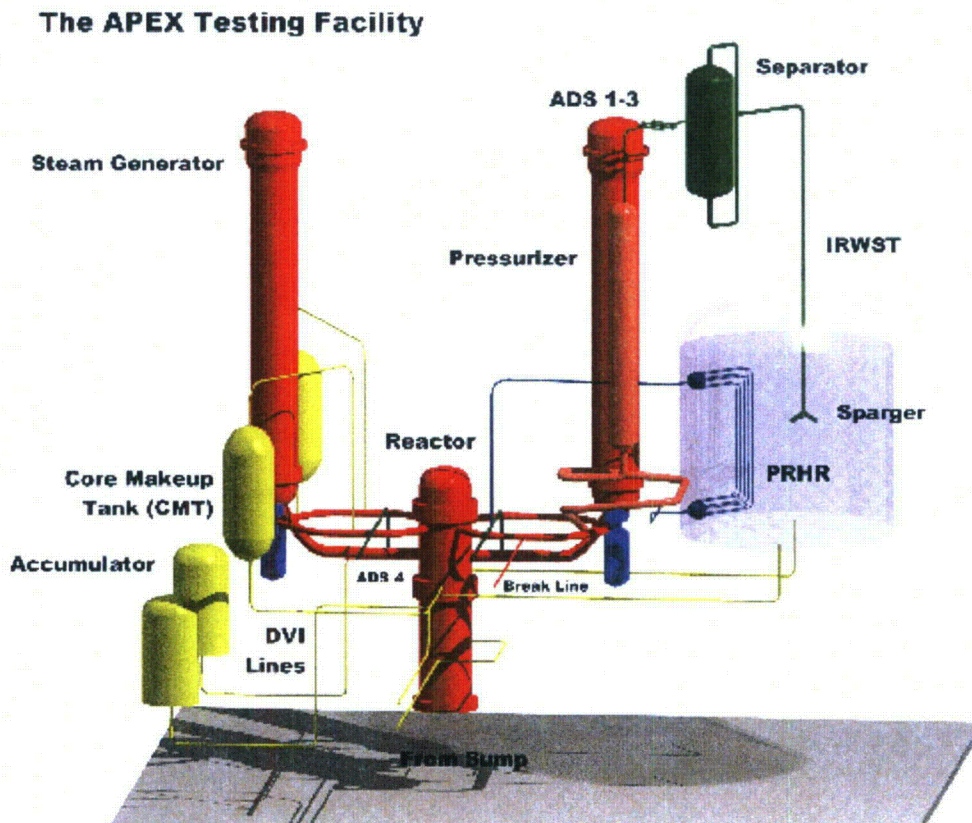


Figure 2.1 APEX Test Facility

2.1 Reactor Coolant System

The APEX facility reactor coolant system (RCS) is a complete model of the AP1000 nuclear steam supply system (NSSS). The RCS includes:

- An electrically heated 48-rod bundle,
- A reactor pressure vessel (RPV) with upper core internals,
- A pressurizer (PZR),
- Two U-tube steam generators (SGs),
- Four reactor coolant pumps (RCPs), and
- associated primary loop piping.

See Figures 2.2 and 2.3 for elevation view and plan view of the RCS respectively.

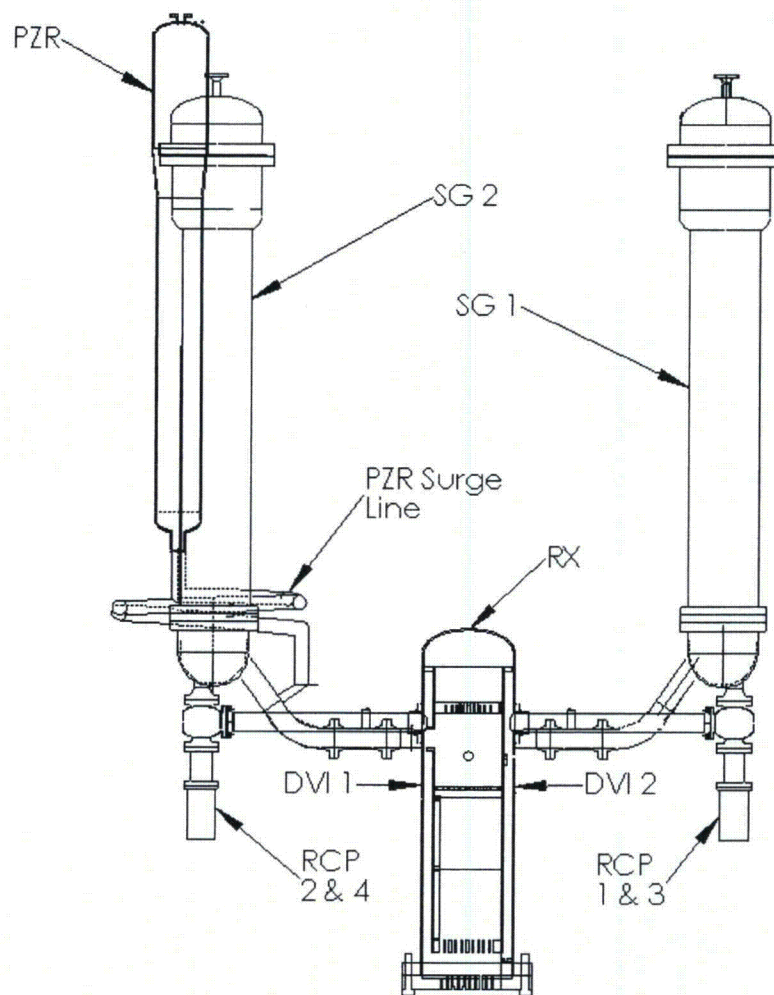


Figure 2.2 Elevation View of the APEX Reactor Coolant System

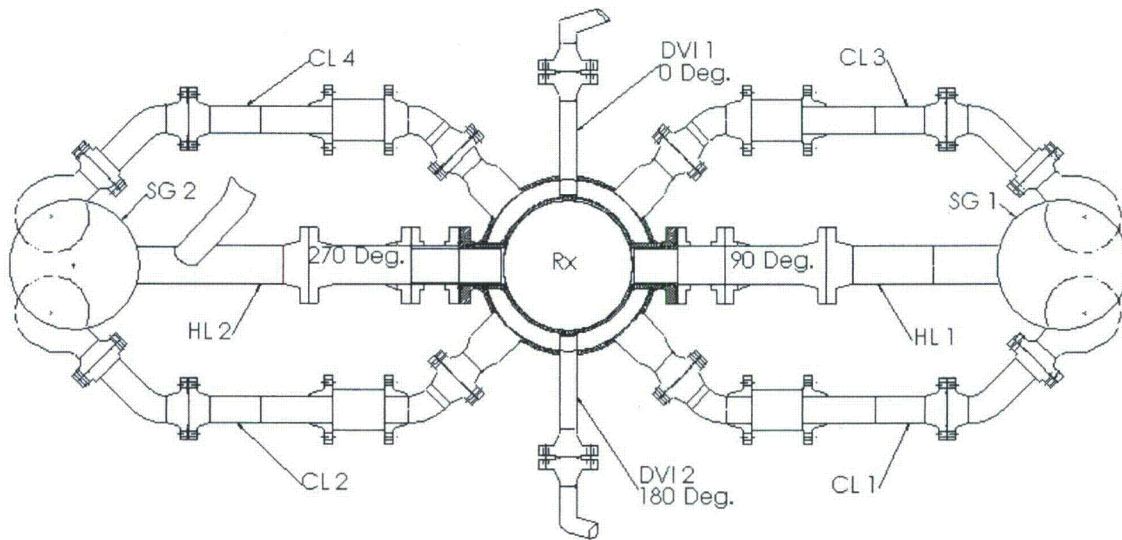


Figure 2.3 Plan View of the APEX Reactor Coolant System

2.2 Reactor Pressure Vessel

The RPV models the upper and lower internals of the AP1000 reactor vessel, core barrel, downcomer, and core. The maximum core power is approximately 1000 kW, can be distributed in two radial power zones and can be programmed to simulate time-dependent decay power. The RPV includes connections for the two hot legs (HLs), four cold legs (CLs), and two direct vessel injection (DVI) lines.

During normal operation, cold water enters through four 3.5 in schedule 40 cold legs into an annular downcomer region that is bounded by the inside surface of the reactor vessel shell and the outside surface of the core barrel. The cold water in the downcomer flows into the lower plenum where it changes direction and travels upward through the lower core plate and into the core.

The heated zone of the core extends 91.44 cm (36 in) from the top of the lower core plate and consists of 48 heater rods, each having a 2.22 cm (0.875 in) diameter. Five fluid thermocouple (T/C) rods provide an axial and radial temperature distribution in the core region. Two spacer grids are provided for support of the heaters, one at the mid-plane of the heaters and the other near the core exit. The heater bundle is surrounded by a reflector/baffle that directs the fluid through the core. Figure 2.4 shows a cross sectional view of the RPV.

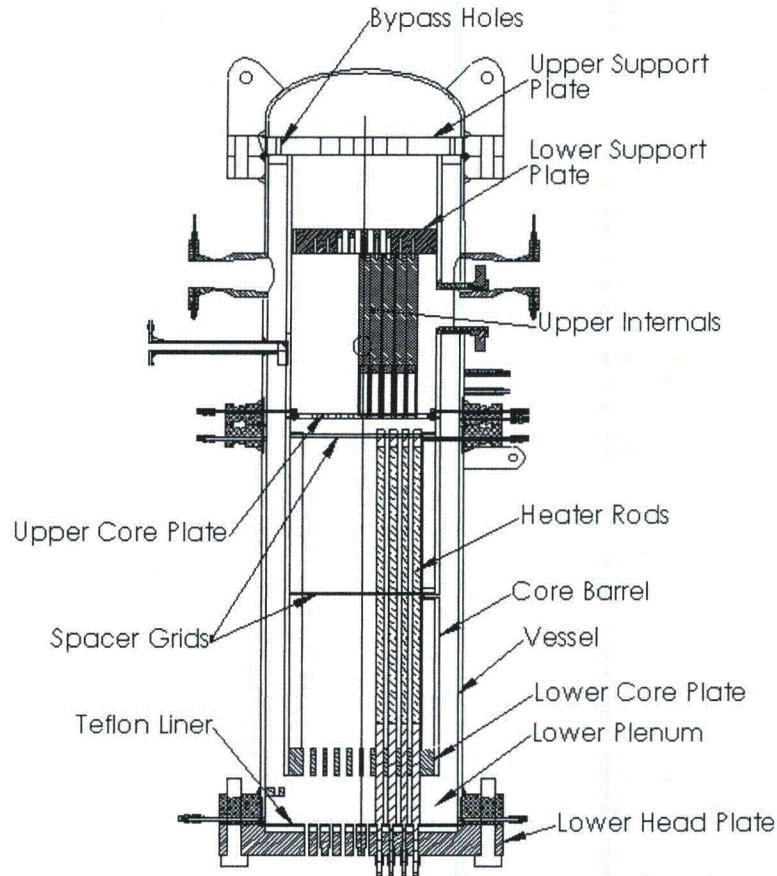


Figure 2.4 Reactor Pressure Vessel Cross-Sectional View

2.3 Pressurizer

A fully functional pressurizer with 20 kW internal heaters and a relief valve system capable of controlling the RCS pressure has been included. The pressurizer is connected to HL-2 through the PZR surge line. The pressurizer's diameter is not constant along its entire length, the lower cylindrical portion is constructed from 12 in schedule 40 pipe, and the upper cylindrical portion is constructed from 16 in schedule 30 pipe. See Figure 2.5 for an elevation view of the pressurizer.

The larger diameter top on the pressurizer was required for the APEX facility since there was not enough vertical space in the lab to accommodate the height of the pressurizer if the diameter remained constant. The larger upper portion of the pressurizer is above the normal pressurizer water level, so only steam is present in the upper portion. The pressurizer in the APEX facility does not use a condensing spray for reduction of pressure; instead a vent is used to exhaust steam. A line from the first three stages of the ADS is connected to the top of the pressurizer for modeling the ADS system depressurization of the primary system.

The pressurizer surge line connects the bottom of the PZR to the top of HL-2. The surge line enables continuous pressure adjustments between the RCS and the PZR. The PZR surge line geometry of the AP1000 has been preserved in APEX as shown in Figure 2.6.

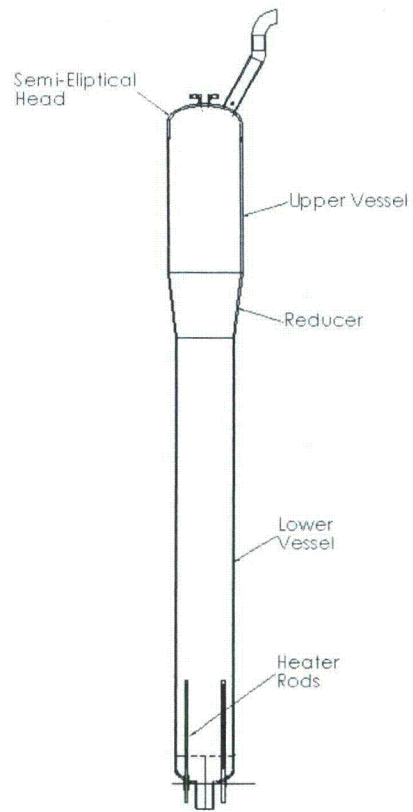


Figure 2.5 Pressurizer

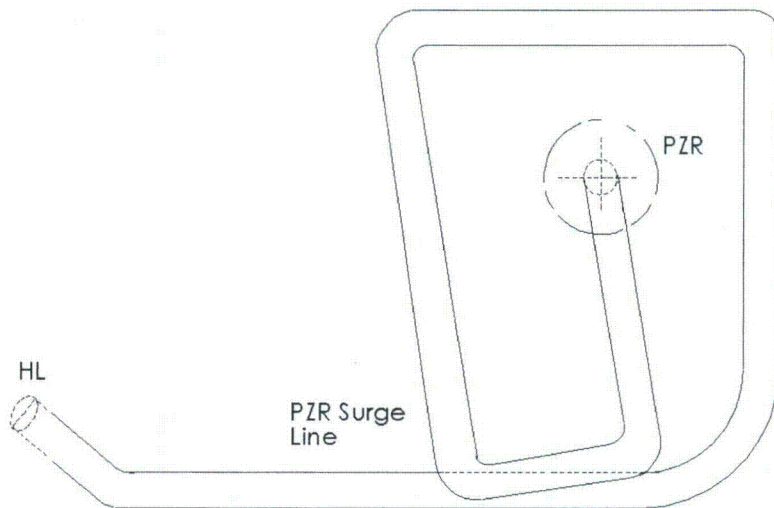


Figure 2.6 Pressurizer Surge Line

2.4 Steam Generators

Two steam generators, one on each loop, have been included in the APEX facility. Each SG is instrumented and is a shell and tube heat exchanger that models the Westinghouse Delta-75 Steam Generator (see Figure 2.7). The SG lower channel head includes connections for two RCPs and a single HL. SG #2 contains connections for the passive residual heat removal system (PRHR) heat exchanger (Hx) return flow and the chemical volume system (CVS) pump discharge.

As shown in Figure 2.8, each SG contains 133 U-tubes with 1.745 cm (0.687 in) outside diameter and 1.542 cm (0.607 in) inside diameter. A single chevron type moisture separator is located at the steam outlet nozzle to ensure dry steam. Moisture removed by the separator is directed to the downcomer to aid in heating the incoming feed water. Feed water is distributed inside the steam generator by a feed water nozzle which includes 8 "J" hook type nozzles to direct flow downward. See Table 2.1 for a list of important SG dimensions.

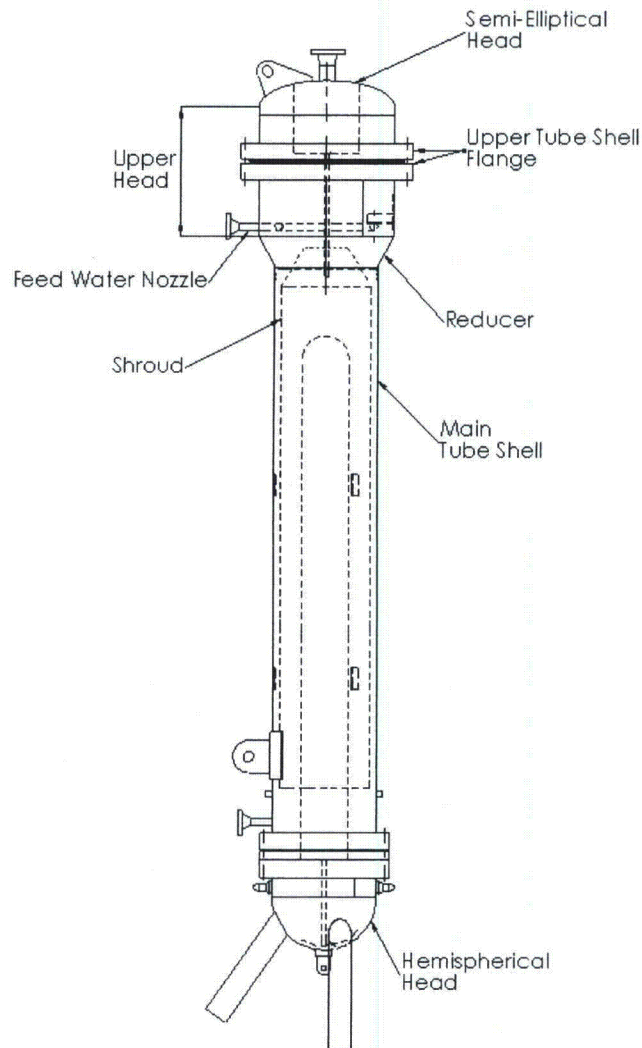


Figure 2.7 Steam Generator

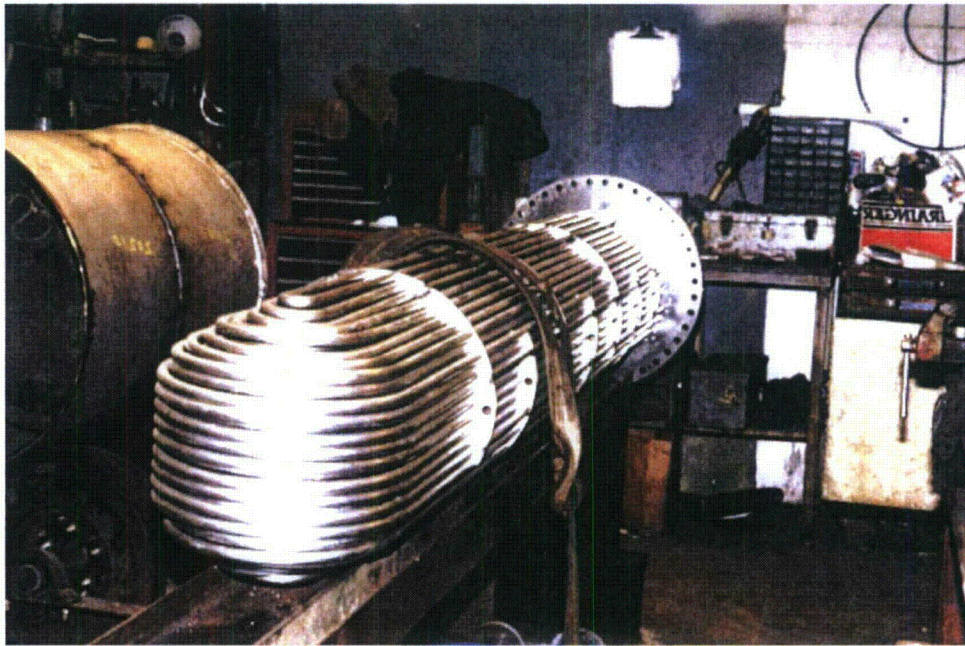


Figure 2.8 Steam Generator U-tube Bundle

Table 2.1 Steam Generator Dimensions					
Parameter		SG #1		SG #2	
Upper Shell Volume		0.233 m ³ (8.242 ft ³)		0.257 m ³ (9.084 ft ³)	
Cylindrical Section Volume		0.314 m ³ (11.081 ft ³)		0.317 m ³ (11.182 ft ³)	
Total Volume ft ³ (m ³)		0.547 m ³ (19.323 ft ³)		0.574 m ³ (20.266 ft ³)	
U-Tube Inside Diameter		1.542 cm (0.607 in)			
U-Tube Outside Diameter		1.745 cm (0.687 in)			
U-Tube Flow Area		248.4 cm ² (38.50 in ²)			
Row	Number Tubes	Length		Outside Surface Area	
		cm	in	m ²	ft ²
1	19	495.14	194.94	5.16	55.51
2	18	501.65	197.50	4.95	53.28
3	17	508.00	200.00	4.73	50.96
4	16	514.35	202.50	4.51	48.56
5	15	520.70	205.00	4.28	46.09
6	14	527.05	207.50	4.05	43.54
7	13	533.40	210.00	3.80	40.92
8	12	539.75	212.50	3.55	38.22
9	9	546.10	215.00	2.69	29.00
Total	133			37.73	406.08

2.5 Primary Loop Piping

The primary loop piping models two primary loops, each consisting of a single hot leg and two cold legs. Break spool pieces are installed on primary loop and passive safety system piping to model various LOCA scenarios. The following LOCA breaks can be modeled in APEX:

- Top of CL #3 break
- Bottom of CL #3 break
- Bottom of CL #4 break
- Bottom of HL #2 break
- Single ended DVI break
- Double ended DVI break
- Single ended CMT balance line break
- Double ended CMT balance line break

Each of the primary loop breaks is initiated by pneumatic operated valves connected to the associated break spool piece. A flow nozzle is used to model the size of the break. The flow from the break is discharged to the break and ADS measurement system (BAMS) where a separator is used to separate and measure the liquid and vapor components of the break flow.

2.6 Passive Safety Systems

The passive safety system relies on gravity and natural circulation to prevent core damage in the event of a LOCA or loss of heat sink. The safety system provides three sources of makeup water with direct vessel injection to the core and includes a four-stage ADS, a PRHR heat exchanger, and a sump recirculation path for long-term cooling.

2.6.1 Automatic Depressurization System

The automatic depressurization system provides a four stage depressurization of the RCS to allow gravity/pressurized injection of makeup water to the core. Stages 1-3 vent from the top of the pressurizer and discharge to the ADS 1-3 separator where the two phase flow is separated and measured. All portions of the ADS 1-3 flow are re-combined before discharging to a submerged sparger located inside the IRWST. See Figure 2.9 for details of the sparger.

Each stage of ADS 1-3 in APEX models two trains in the AP1000. A flow nozzle is used to model the scaled choked flow area for each stage of ADS 1-3. To model a single valve failure, the desired flow nozzle is replaced with one having a corresponding decrease in flow area.

Two ADS 4 valves, modeling 4 valves in AP1000, are connected to the top of each Hot Leg. Both ADS 4 lines are similar with the exception that ADS 4-2 (PZR side) provides a connection to the PRHR Hx system. The flow from each stage of ADS 4 is discharged to a venturi. The venturi is used to model both the choke flow area and the scaled pressure drop. The flow is directed to a moisture separator where the steam and liquid flows are separated and measured individually. The liquid flow is then directed through a loop seal and into the primary sump, while steam flow is vented to atmosphere.

2.6.2 In-containment Refueling Water Storage Tank

The IRWST is modeled by a cylindrical vessel and provides connections for the ADS 1-3 sparger, to two injection trains, and to the PRHR Hx. Thermocouple rakes are employed to provide a radial and axial temperature distribution of the IRWST pool. A standpipe is used to set the initial water level and a curb overflow is provided to match the scaled AP1000 curb overflow to the sump. The IRWST is capable of being pressurized to 65 psig (4.5 bar).

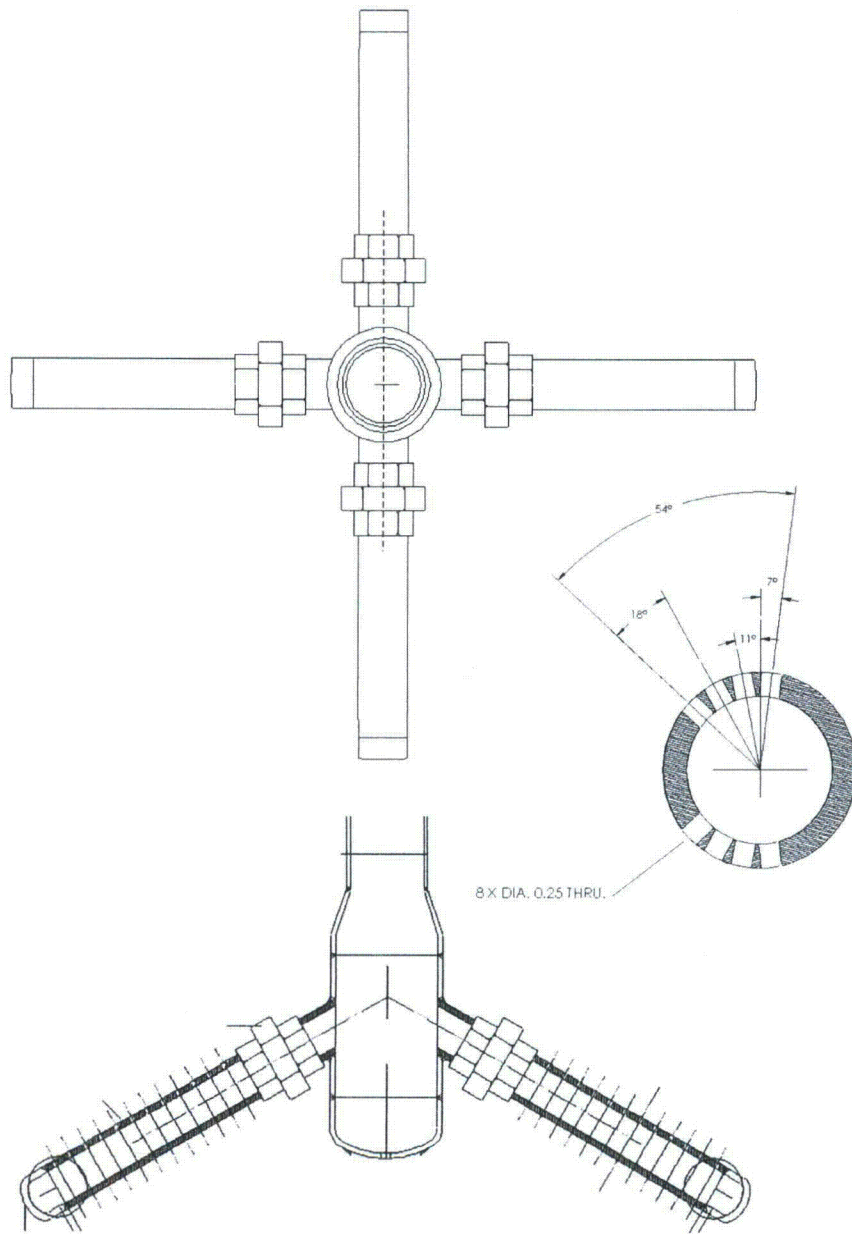


Figure 2.9 ADS 1-3 sparger

2.6.3 Core Makeup Tanks

Two Core Makeup Tanks are included in APEX. AP1000 piping geometry is preserved in APEX with each CMT connected to a cold leg (for pressure balance) and to the associated injection train. A differential pressure level detector is used to provide ADS actuation signals based on level.

2.6.4 Accumulators

Two accumulators (ACC) that are capable of being pressurized to full system pressure are included in APEX. Each ACC employs a standpipe used to set the water level and is pressurized with nitrogen gas. Check valves isolate the ACCs from RCS pressure and open automatically as the RCS system depressurizes during a LOCA.

2.6.5 Passive Residual Heat Removal Heat Exchanger

The passive residual heat removal heat exchanger is a C-Shape heat exchanger submerged inside the IRWST. Both the heat exchanger geometry and inlet and outlet piping geometry are preserved in APEX. The PRHR inlet is connected to ADS 4-2 (HL #2), while the return is connected to the cold leg plenum of SG #2. The PRHR has a total surface area of 6.26 m^2 (67.38 ft^2), and is constructed from 88 0.9525 cm (0.375 in) diameter tubes (see Figure 2.10).

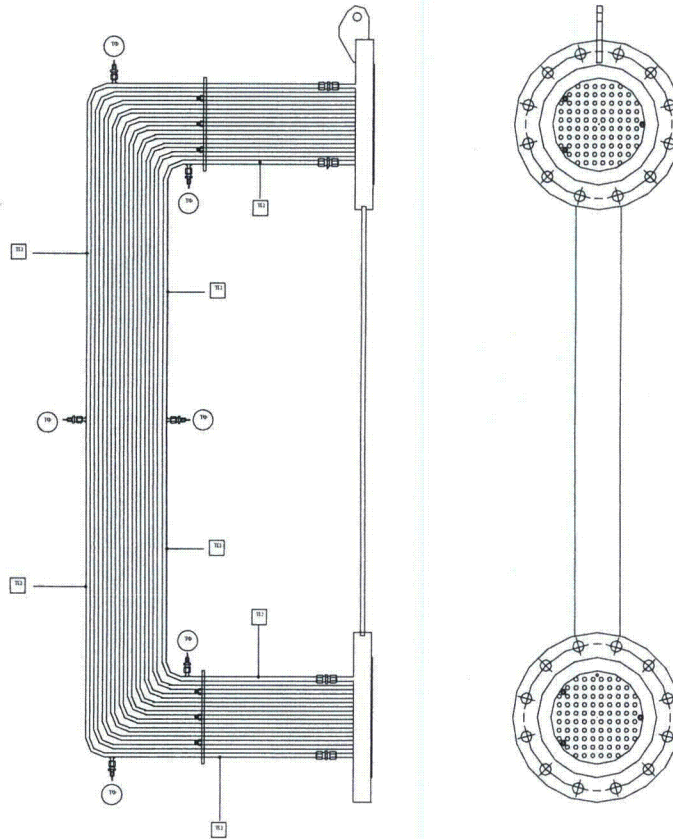


Figure 2.10 PRHR Heat Exchanger

2.7 Break and ADS Measurement System

The break and ADS measurement system is used to separate and measure two-phase volumetric flow rates from the break(s) and four stages of ADS. For the break and ADS 4 separators, the water/steam mixture enters the separator where gravity and a cyclone separator are used to separate the two phases. The separated steam exits the top of the separator, while the liquid is collected and allowed to drain out of the bottom of the separator through a loop seal and into the primary sump. For the ADS 1-3 separator the liquid and steam are first recombined before being discharged to the sparger located inside of the IRWST.

The break separator and the ADS 4 separators have a maximum working pressure of 618 kPa (75 psig) at 505 K (450 °F), while the ADS 1-3 separator has a maximum working pressure of 2.86 MPa (400 psig) at 505 K (450 °F). The steam lines and moisture separators utilize strip heaters to minimize condensation and to maintain a constant boundary condition. See Figure 2.11 for a schematic of the BAMS.

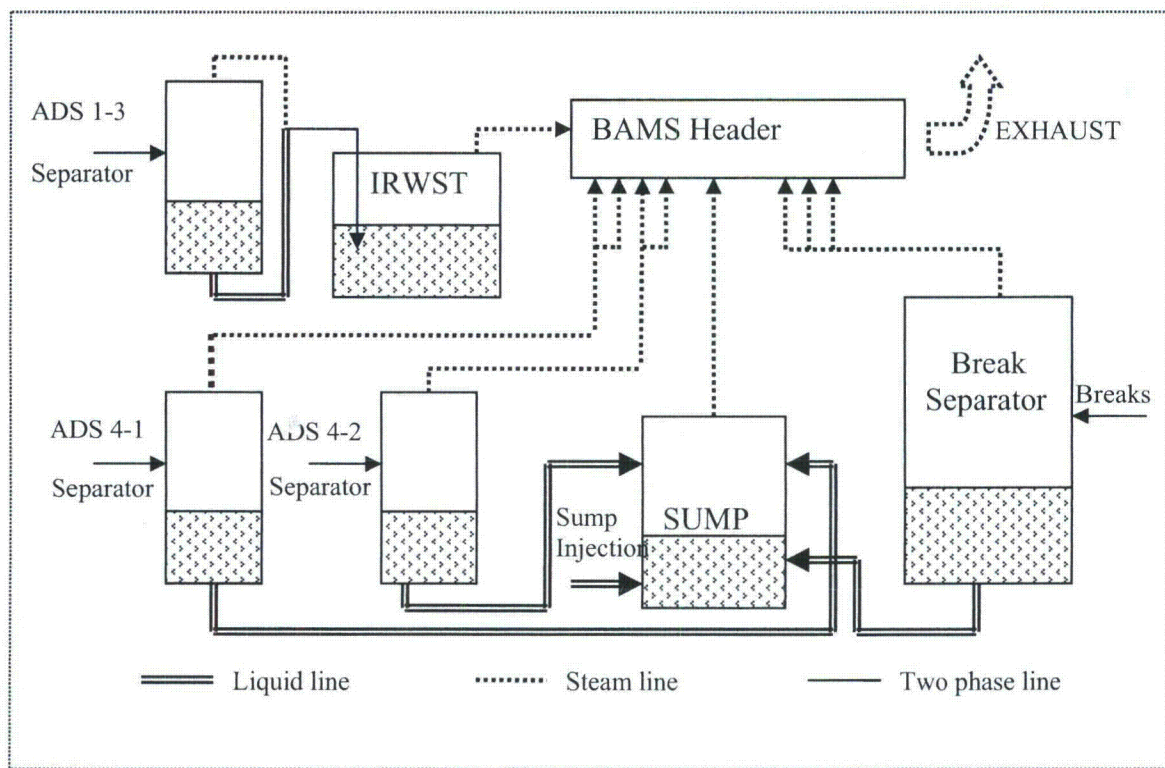


Figure 2.11 BAMS Schematic

2.8 Data Acquisition System

There are approximately 622 instrumented channels in the APEX test facility. The data acquisition system (DAS) writes the data into a single large database. The advantages of using a single database over individual test files are:

- Better management and maintenance.
- Ability of retrieval to be independent of storage (i.e., the data is stored every one second, but the database can be queried at another resolution, say every 5 seconds). This provides a very powerful and flexible retrieval capability.

The single database also allows for easy comparisons between multiple tests since the data is stored together in a large database. The DAS is manufactured by National Instruments and uses signal conditioning extension for instrumentation (SCXI) hardware and off the shelf software. The signal type depend on the specific instrument and include 4-20 mA current, 1-5 VDC, 0-10 VDC, or millivolt (thermocouples) signals. The instruments are connected to terminal boards which can accept any combination of signal types up to 32 channels and include cold junction compensation for use with thermocouple signals. Each terminal board is connected to an analog input module that is housed in a SCXI chassis. The SCXI chassis architecture acts as the communication conduit between modules and routes the analog and digital signals to the data acquisition I/O board. SCXI chassis control circuitry manages the data acquisition bus, synchronizing the timing between each module and the I/O board. The system can scan input channels from several modules in several chassis at rates up to 333 kS/s.

The DAS use three chassis to acquire data. The signals from the chassis are then transferred to a computer that is equipped with a two multifunction I/O boards. The multifunction I/O boards switch the analog input modules between 622 channels at high speed to sample all channels. The data for APEX is typically sampled at a rate of one Hertz per channel.

All the data from input channels are acquired by National Instruments NI-DAQ hardware/software and is then converted into engineering units. The real-time data are sampled and stored in National Instruments Citadel database at one time per second per channel. The Citadel is a proprietary database used for process data. OSU developed an export program to query the Citadel database and format the data file in ASCII text and NRC Data Bank binary file formats.

The following types of instrumentation are used in the APEX Test Facility:

1. **Thermocouples (T/Cs)** are used to measure the temperature of the coolant in the primary and RHR systems and the supply and component cooling water. They are used to measure fluid, component wall, and insulation temperatures to complete a mass/energy balance on components. They are also be used to measure the temperature distribution in the core heaters. Premium grade thermocouples with special limits along with controlled purity extension wire are used to minimize thermocouple errors.
2. **Magnetic flowmeters** are used to measure all single phase water mass flow rates.
3. **Pressure transducers** are used to measure the absolute pressures within the various tanks and at selected locations in the test loops.
4. **Differential pressure transducers** are used to measure the liquid levels in the various primary and secondary side tanks, to determine the liquid inventory in the primary system components and to determine the pressure drop across system components.
5. **Vortex flowmeters** are used to measure all steam flows.
6. **Power meters** are use to measure AC voltage and current for the pressurizer and reactor electric heaters and are configured to output RMS power in kW.

Digitizing errors for the various channels from sensor to DAS are presented in the Table 2.2. The uncertainties of individual components that comprise a measurement ensemble are assumed to be independent. The combined uncertainty for each measurement type is calculated by taking the square root of the sum of the squares of each individual variance. The combined uncertainty represents a worst case uncertainty and is typically much better than the values reported in Table 2.2. The combined uncertainty reported includes system errors which are reduced in practice by performing an end to end calibration of the instrument loop.

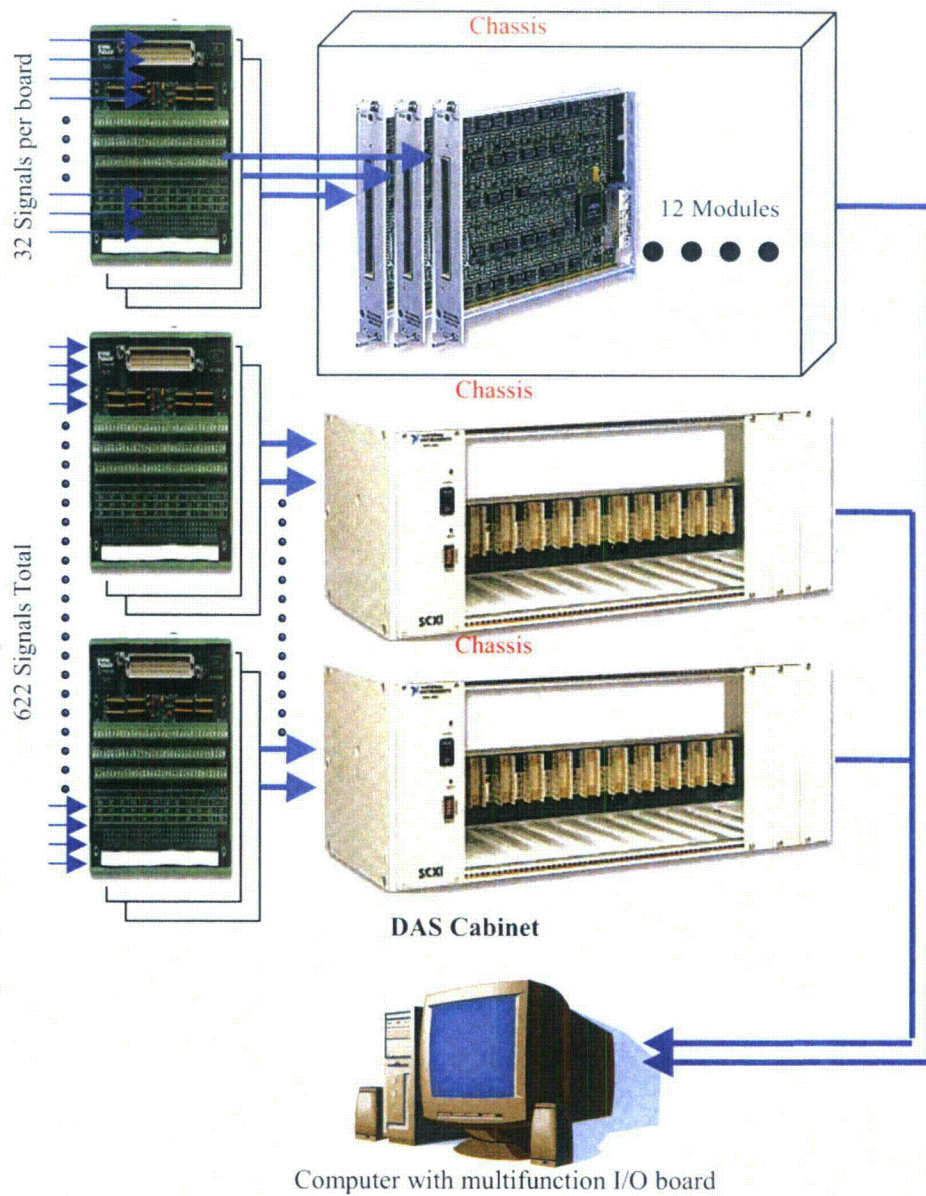


Figure 2.12 Data Acquisition System Hardware Overview

Table 2.2 Accuracy and Signal Input Levels		
Instrument	Signal Input Level	Accuracy
Thermocouples	0 - 12 millivolts DC	The greater of $\pm 1.3 K$ or 0.4% of reading
Vortex flowmeters	0 - 20 milliamps DC (1-5 VDC)	$\pm 1\%$ of rate for Re numbers greater than 20,000
Magnetic flowmeters	0 - 20 milliamps DC (1-5 VDC)	$\pm 1\%$ of rate for flows greater than 1.5% of Upper Range Value
Pressure transducers	0 - 20 milliamps DC (1-5 VDC)	$\pm 0.4 \%$ of Upper Range Value
All other instrumentation	0 - 20 milliamps DC (1-5 VDC)	$\pm 0.4 \%$ of Upper Range Value

2.9 Control System

The APEX test facility control logic system includes various field process transmitters, operator switches, an OMRON programmable logic controller (PLC), a set of Fischer & Porter process controllers (PCs), and a supervisory host computer. An overview of the system interface is shown in Figure 2.13.

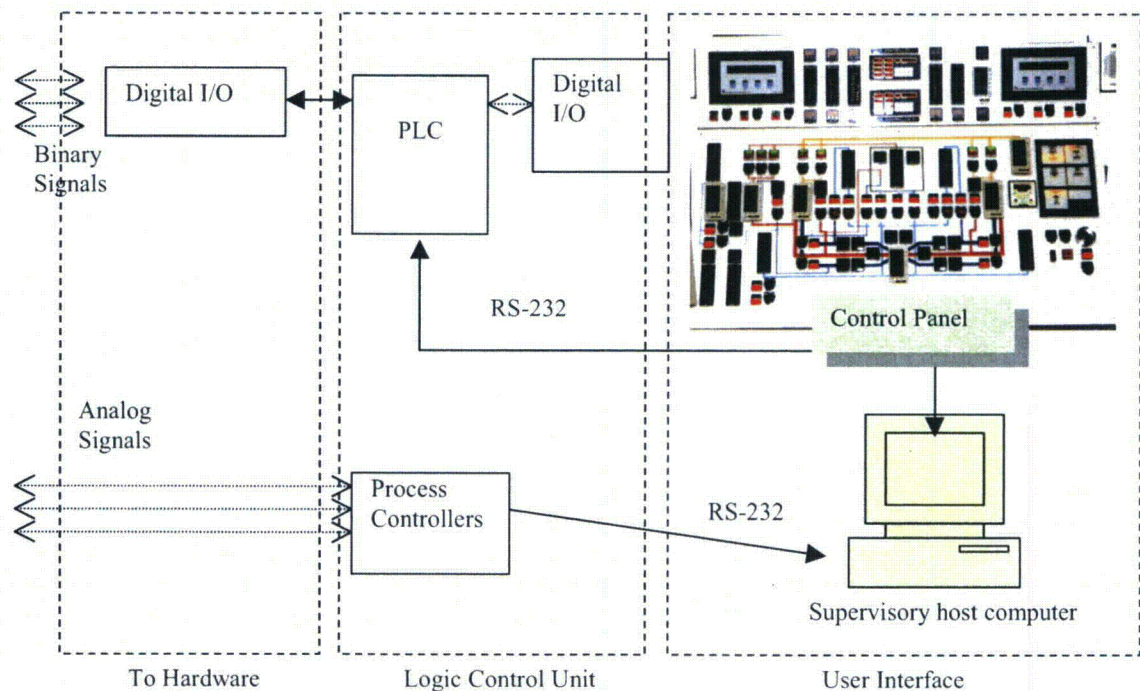


Figure 2.13 Control System Interface

The control system functions in three basic parts:

1. The PLC performs all binary logic functions for safety, sequencing, and operational control.
2. The PCs perform all dynamic (analog) process controls for smooth operation of variable control devices.
3. The supervisory system provides a graphical computer interface between the operator and the facility.

The PLC consists of a central processor for program execution, power supply, two local racks of digital I/O and several remote I/O racks located throughout the facility. All inputs are sensed as 24 VDC signals. All outputs are driven by a 24 VDC supply to energize pneumatic valves, pump motor starters, control panel lights and alarms, etc. The process control system consists of seven dedicated PCs with a total of 40 analog inputs and 20 analog outputs. Analog inputs are used to monitor the process, either directly or as a calculated variable. They include tank level, system pressure, pump flow rate, and applied heater power. The controller performs a series of calculations to determine the likely state of the process and adjusts the analog output of the controlling device to maintain the process within defined parameters. The controlling devices include valves, power silicon controlled rectifiers (SCR), and variable speed pump controllers. The data acquisition system and the control computer are connected by a high speed local area network.

The APEX test facility uses PLCs, control throttle valves and on/off valves to simulate actuation of AP1000 safety systems, to provide automatic control of pressurizer pressure and liquid level, and to provide important safety trips to prevent injury to personnel and damage to the facility. For purposes of test facility safety, the power to the core heaters have been interlocked to shut off at high heater temperature, high primary or PRHR pressure or low water level in the core.



3 TEST MATRIX AND DESCRIPTION

Eight separate steam generator condensation tests were sponsored by the Nuclear Regulatory Commission (NRC) and completed at the APEX test facility from 2005 through 2007. These tests were designed to evaluate steam condensation rates in a Pressurized Water Reactor (PWR) SG at various primary and secondary side pressures. Two of the tests (-07 and -08) included the presence of non-condensable gases. The complete test matrix is shown in Table 3.1.

Test Number	Description	Date Completed
NRC-COND-01	SG condensation with various steam inlet/outlet flow rates. <ul style="list-style-type: none"> Nominal steam inlet pressure: 1.48 MPa (215 psia). Inlet steam Re=1900—5500. 	11/3/05
NRC-COND-02	SG condensation with various steam inlet/outlet flow rates. <ul style="list-style-type: none"> Nominal steam inlet pressure: 2.03 MPa (295 psia). Inlet steam Re=2300—6000. 	12/14/05
NRC-COND-03	SG condensation with various steam inlet/outlet flow rates. <ul style="list-style-type: none"> Nominal steam inlet pressure: 0.79 MPa (115 psia). Inlet steam Re=2000—5000. 	12/16/05
NRC-COND-04	SG condensation with various steam inlet/outlet flow rates. <ul style="list-style-type: none"> Nominal steam inlet pressure: 2.17 MPa (315 psia). Inlet steam Re=7600—12700. 	01/18/07
NRC-COND-05	SG condensation with various steam inlet/outlet flow rates. <ul style="list-style-type: none"> Nominal steam inlet pressure: 2.38 MPa (345 psia). Inlet steam Re=7900—12500. 	02/19/07
NRC-COND-06	SG condensation with various steam inlet/outlet flow rates. <ul style="list-style-type: none"> Nominal steam inlet pressure: 0.45 MPa (65 psia). Inlet steam Re=3100—8600. 	03/07/07
NRC-COND-07	SG condensation with various steam inlet/outlet flow rates. <ul style="list-style-type: none"> Nominal steam inlet pressure: 2.07 MPa (300 psia). Inlet gas Re=12100—12500. Nominal non-condensable inlet mass fraction: 2.5%. 	05/05/07
NRC-COND-08	SG condensation with various steam inlet/outlet flow rates. <ul style="list-style-type: none"> Nominal steam inlet pressure: 2.07 MPa (300 psia). Inlet gas Re=11900—12300. Nominal non-condensable inlet mass fraction: 10.0%. 	05/17/07

3.1 Facility Modification

In order to conduct the subject test program, the APEX test facility (as described in section 2) was modified to isolate SG #1 from the primary loop piping. A steam line was installed from the secondary side of the non-isolated SG (SG #2) to the primary side of the isolated SG (SG #1). During each of the tests, dry steam was created in SG #2 and directed to the hot leg plenum of SG #1.

One of the primary objectives of these experiments was to determine the condensation rate inside the tubes of a PWR SG. In order to measure the condensation inside the tubes of SG #1 a condensation collection system was constructed and installed on SG#1. This system consists of a catch tank and a cyclone separator. The catch tank is designed to collect the SG tube condensation via the hot plenum while the cyclone separator is designed to measure the SG tube condensation via the cold plenum of the SG. The separator and catch tank were fabricated from 12 inch schedule 40 stainless steel pipe and are rated at 400 psig. Each of the tanks is insulated to reduce the amount of heat transferred to the

surroundings. See Table 3.2 for a list of dimensions for the catch tank and the separator. As-built drawings of these modifications are shown in Appendix A.

Table 3.2 Catch Tank and Separator Dimensions

Component	Diameter	Max Liquid Height	Max Volume
Separator	30.3 cm (11.9 in)	55.9 cm (22.0 in)	0.040 m ³ (1.413 ft ³)
Catch Tank	30.3 cm (11.9 in)	55.9 cm (22.0 in)	0.040 m ³ (1.413 ft ³)

Due to the pressure difference between the steam inlet of SG #1 and the atmospheric catch tank, a float valve was installed upstream of the catch tank to allow condensate to flow into the tank without releasing steam for tests -01 and -02. For tests -01 and -02 an isentropic expansion was assumed at the catch tank to account for the condensate mass lost due to flashing. The flow of the flashed condensate was not measured using a flow meter during these two tests due to flow rates below the range of FVM-004. For tests -03, -04, -05, -06, -07 and -08, a ball valve was used instead of the float valve. Use of a ball valve allowed some steam to flow through the catch tank along with the condensate. During these tests (-03, -04, -05, -06, -07 and -08), before being vented to atmosphere, the steam flowing through the catch tank was measured by a volumetric flow meter (FVM-004). The amount of steam due to flashing of the condensate was calculated using an isentropic expansion for these tests as well. Note that during test steps 3-2 and 6-4, the steam flow rate through FVM-004 was still below the range of FVM-004 and therefore these test steps were treated as tests -01 and -02.

Steam flow through the U-tubes is controlled by a valve on the outlet of the separator. See Figure 3.1 for an elevation view of SG condensation test modifications. See Appendix A for detailed as-built drawings and instrumentation schematics of the test facility modifications.

A general description of the APEX test facility instrumentation is provided in Section 2.8. Instrumentation has been added for the SG condensation test program in order to measure condensation rates (CL and HL side of SG tubes), steam inlet and outlet conditions, steam flow rates and steam production rates on the secondary side of SG #1. Table 3.3 shows a list of the instrumentation applicable to these tests along with the uncertainty of each instrument.

As mentioned, tests -07 and -08 included the presence of non-condensable gas in the SG tubes. During these tests nitrogen was injected into the steam space of SG #2 at a nominal rate consistent with 2.5 weight percent (-07) or 10.0 weight percent (-08). The nitrogen was allowed to inject into the steam space of SG #2 for a time sufficient for the steam-N₂ flow from SG #2 to reach equilibrium at the desired non-condensable mass percent. The nitrogen gas was injected from a bank of nitrogen bottles connected by a manifold and sitting on a scale to measure the change in weight of the nitrogen bottles as the nitrogen discharged. Figure 3.2 shows a schematic of the nitrogen injection system.

3.2 Test Description

Eight separate SG condensation tests have been conducted as part of this test program. For tests -01 through -06, the nominal test pressure was varied between each test. These tests were conducted without the presence of a non-condensable gas. Tests -07 and -08 were conducted at the same test pressure as each other; however the percentage of non-condensable gas was varied between the two tests. See Table 3.1 for an overview of the conducted tests.

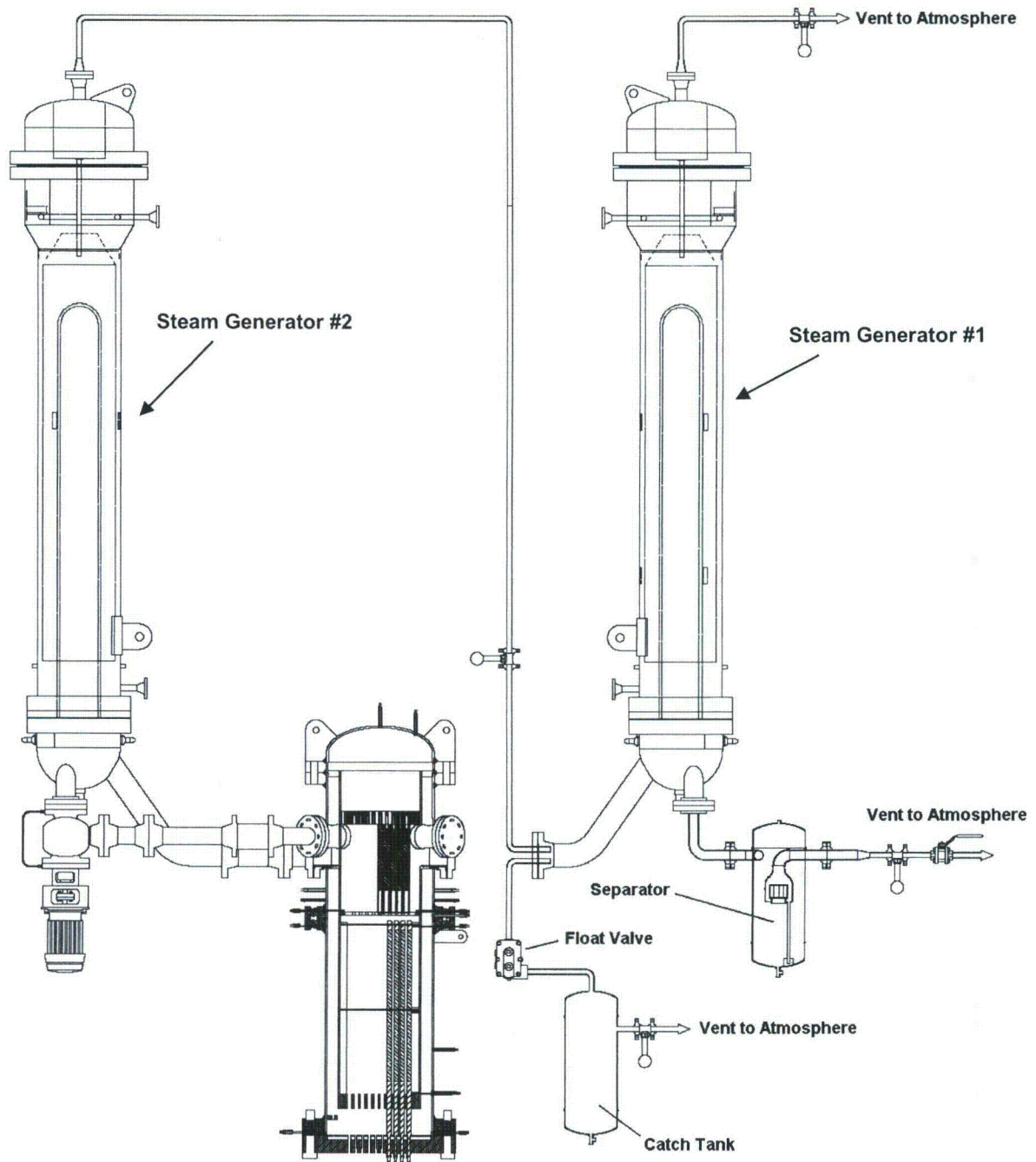


Figure 3.1 SG Condensation Test Elevation View

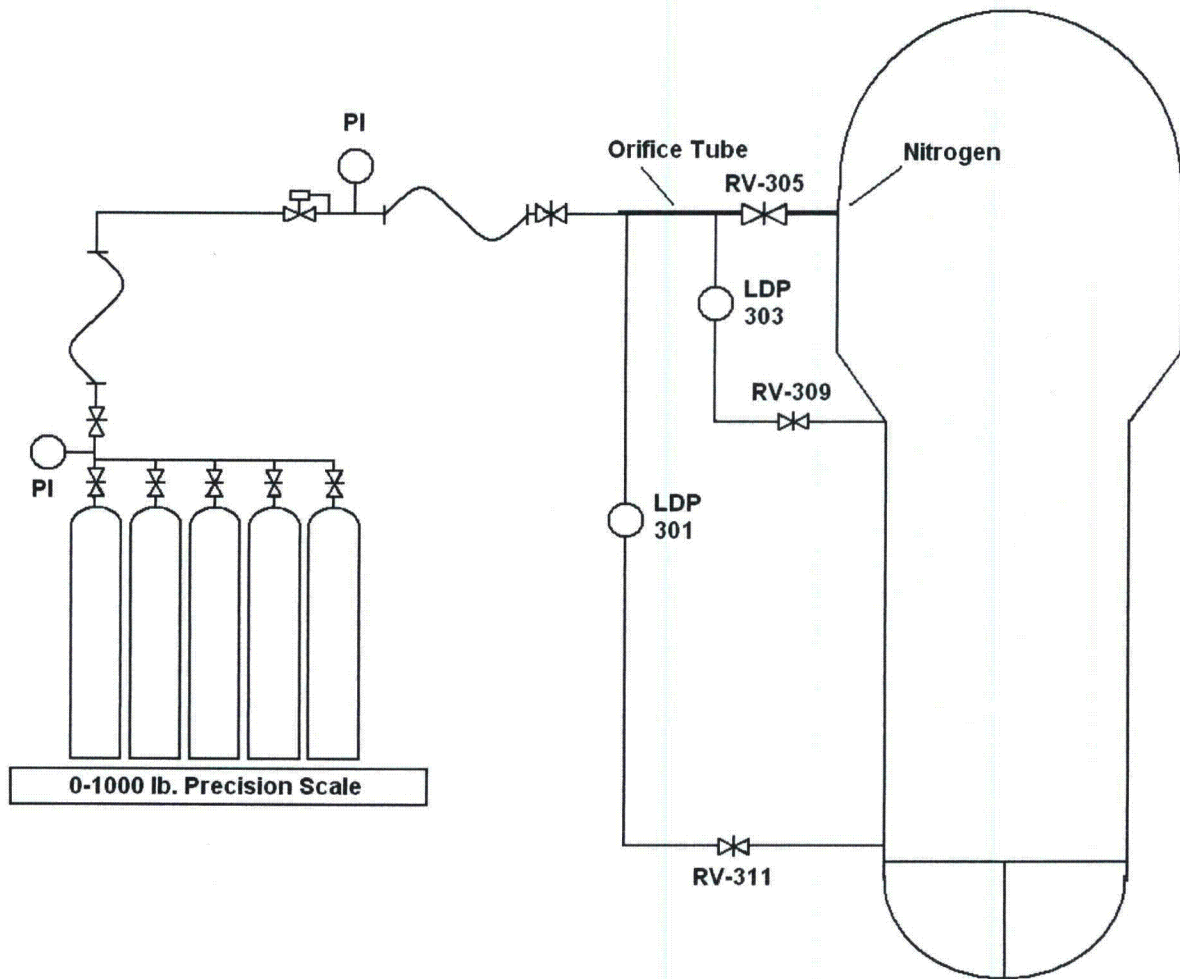


Figure 3.2 Nitrogen Injection System

Table 3.3 SG Condensation Test Instrumentation

Tag Name	Description	Uncertainty
DP-211	SG #1 short tube entrance losses (cm water)	±0.185 cm
DP-213	SG #1 long tube exit losses (cm water)	±0.127 cm
DP-217	Separator level (cm water)	±0.203 cm
DP-219	Catch tank level (cm water)	±0.137 cm
FVM-001	SG #1 tube steam outlet flow (m ³ /s)	±1% of Rate
FVM-002	SG #1 tube steam inlet flow (m ³ /s)	±1% of Rate
FVM-003	SG #1 shell outlet flow (m ³ /s)	±1.35% of Rate
FVM-004	Catch tank steam outlet flow (m ³ /s)	±1% of Rate
KW-101	Core power (kW)	±1.90 kW
KW-102	Core power (kW)	±1.96kW
LDP-205	SG #1 HL uncompensated water level (cm)	±0.094 cm
LDP-207	SG #1 HL elbow uncompensated water level (cm)	±0.183 cm
LDP-209	SG #1 HL plenum uncompensated water level (cm)	±0.102 cm
LDP-215	SG #1 long tube HL uncompensated water level (cm)	±0.79 cm
LDP-217	SG #1 short tube HL uncompensated water level (cm)	±0.76 cm
LDP-219	SG #1 long tube CL uncompensated water level (cm)	±0.79 cm
LDP-221	SG #1 short tube CL uncompensated water level (cm)	±0.76 cm
LDP-301	SG #1 shell WR uncompensated water level (cm)	±0.64 cm
LDP-302	SG #2 shell WR uncompensated water level (cm)	±0.64 cm
LDP-303	SG #1 shell NR uncompensated water level (cm)	±0.226 cm
LDP-304	SG #2 shell NR uncompensated water level (cm)	±0.249 cm
PT-002	SG #1 shell outlet pressure (kPa)	±8.3 kPa
PT-004	SG #1 tube inlet pressure (kPa)	±6.6 kPa
PT-107	Reactor upper head pressure (kPa)	±7.6 kPa
PT-301	SG #1 shell pressure (kPa)	±8.3 kPa
PT-501	SG #1 tube outlet pressure (kPa)	±7.6 kPa
PT-604	PZR pressure (kPa)	±7.6 kPa
TF-201	CL #1 temperature (°C)	± 1.3 °C
TF-203	SG #1 tube outlet temperature (°C)	± 1.3 °C
TF-207	SG #1 short tube @ middle inlet temperature (°C)	± 1.3 °C
TF-209	SG #1 short tube @ middle outlet temperature (°C)	± 1.3 °C
TF-211	SG #1 long tube @ middle inlet temperature (°C)	± 1.3 °C
TF-213	SG #1 long tube @ middle outlet temperature (°C)	± 1.3 °C
TF-215	SG #1 short tube @ top temperature (°C)	± 1.3 °C
TF-217	SG #1 long tube @ top temperature (°C)	± 1.3 °C
TF-301	SG #1 shell steam temperature (°C)	± 1.3 °C
TF-305	SG #1 downcomer HL side temperature (°C)	± 1.3 °C
TF-307	SG #1 downcomer CL side temperature (°C)	± 1.3 °C
TF-310	SG #2 steam temperature (°C)	± 1.3 °C
	Nitrogen bottle scale (kg)	± 0.023 kg

Within each test, several steps were performed in which the rate of steam flow to the SG #1 U-tubes was varied. For each test, the first step was performed with the U-tube steam outlet valve and the shell side steam outlet valve closed on the test SG. Condensation was collected and measured to determine ambient heat losses for the SG. Ambient heat loss is discussed under the section for each individual test below. During the period between test steps the catch tank and separator tank were drained dry while SG#2 was refilled for the next test step. For tests -04 through -08, the U-tube steam outlet steam valve was closed during this period between test steps which caused a large reduction in steam flow rate through the tubes to minimize the probability of condensate accumulation in the system between steps.

For the steps after the first within each test, two boundary conditions were controlled:

1. Steady-state SG #1 secondary side steam flow was initiated to establish heat transfer, and
2. SG #1 U-tube steam outlet energy flow was varied in several steps.

Comprehensive data for the channels described in Table 3.3 for each test are located in Appendix B. Individual test step data can be found from the Appendix B data using the test step start and stop times as shown in Table 3.4.

The energy flow rates shown in the following sections are calculated by multiplying the volumetric flow rate, density and enthalpy at the respective locations. Density and enthalpy at a location are determined for saturated steam using the local pressure data. The energy flow rates for tube inlet flow and tube outlet flow are calculated using FVM-002/PT-004 and FVM-001/PT-501 respectively.

As discussed in the Notice of Discrepancy in Test Data dated May 18, 2006 (Ref. 24), a post test examination of SG #1 shell outlet flowmeter (FVM-003) revealed that the outlet gasket was compressed and partially blocked the flow thus rendering the data from this instrument unreliable. This discrepancy was discovered following test -03 and thus is applicable to tests -01 through -03. For tests -01 through -03, the energy flow rate for shell side steam flow has been estimated by performing an energy balance across the SG #1 U-tubes which is discussed in detail in Section 3.3. For tests -04 through -08, the energy flow rate for shell side steam flow is calculated using FVM-003/PT-002.

Test Step	Start Time (s)	Stop Time (s)	Test Step	Start Time (s)	Stop Time (s)
1-1	30	630	4-3	3537	4137
1-2	1890	2490	4-4	5697	6297
1-3	3450	4050	5-1	93	693
1-4	5070	5670	5-2	1473	2073
1-5	6810	7410	5-3	3513	4113
2-1	39	639	5-4	5193	5793
2-2	1299	1899	6-1	60	660
2-3	3399	3999	6-2	1380	1980
2-4	7419	8019	6-3	2820	3420
2-5	8919	9519	6-4	4260	4860
3-1	0	600	6-5	6120	6720
3-2	1980	2580	7-1	121	721
3-3	3840	4440	7-2	3481	4081
3-4	5640	6240	7-3	5701	6301
3-5	7380	7980	8-1	60	660
4-1	57	657	8-2	1380	1980
4-2	1617	2217	8-3	3570	4170

The uncertainty of the SG #1 tube inlet pressure (PT-004) is given by the uncertainty in the pressure instrument as shown in Table 3.3. Tube inlet energy flow, tube outlet energy flow and shell side steam energy flow are calculated parameters. The major uncertainty contributors to the measurement of the tube inlet energy flow, tube outlet energy flow and shell side steam energy flow are the measurement of the volumetric flow rate (using a flow meter) and the measurement of enthalpy and density (using pressure transducers). The uncertainty of the individual instruments is shown in Table 3.3. As stated in section 2.8, the uncertainty in each individual instrument is assumed to be independent. Therefore, the effect of the individual instrument uncertainty on the calculation of the three energy flow rates can be determined using Equations 3.1 and 3.2.

$$K = f(k_1, k_2, \dots, k_n) \quad (3.1)$$

$$\omega_K = \sqrt{\sum_{n=1}^N \left(\omega_{k_n} \frac{\partial K}{\partial k_n} \right)^2} \quad (3.2)$$

In Equations 3.1 and 3.2, ω is the uncertainty, K is an arbitrary function and k_n are the components upon which the function K is calculated.

3.2.1 Test NRC-COND-01

Test NRC-COND-01 was conducted at a nominal tube inlet steam pressure of 1.48 MPa (215 psia). The tube inlet pressure is measured in these tests using PT-004. The test step conditions for this test are listed in Table 3.5. Figures 3.3 and 3.4 show the normalized catch tank level (DP-219) and normalized separator level (DP-217) for each of the five steps in NRC-COND-01. In each of these figures the tank levels are normalized to the tank level at the beginning of the step. Note that the uncertainty in the catch tank and separator levels for all tests is less than ± 0.25 cm of water (see Table 3.3). Step 1 ambient heat losses are estimated at 15.6 kW.

Step	SG #1 tube pressure, MPa (psia)	SG #1 tube inlet flow, kW	SG #1 Tube outlet flow, kW	SG #1 shell side steam flow, kW
1	1.548 \pm 0.0066 (224.5 \pm 0.957)	0	0	0
2	1.274 \pm 0.0066 (184.8 \pm 0.957)	377.0 \pm 4.2	273.4 \pm 3.2	78.4 \pm 1.3
3	1.328 \pm 0.0066 (192.6 \pm 0.957)	331.0 \pm 3.7	216.3 \pm 2.5	100.1 \pm 1.3
4	1.421 \pm 0.0066 (206.1 \pm 0.957)	233.0 \pm 2.6	104.5 \pm 1.2	104.4 \pm 1.3
5	1.493 \pm 0.0066 (216.6 \pm 0.957)	135.8 \pm 1.5	0	114.1 \pm 1.3

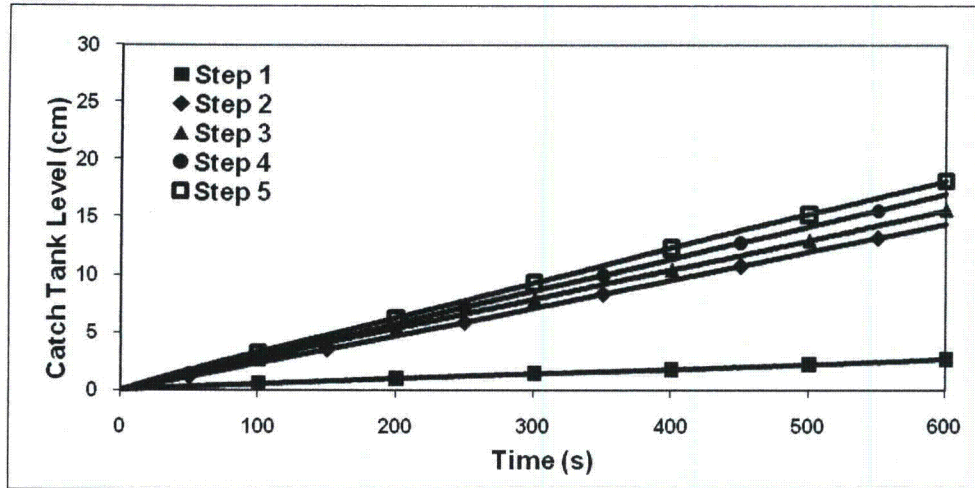


Figure 3.3 Catch Tank Level for Test NRC-COND-01

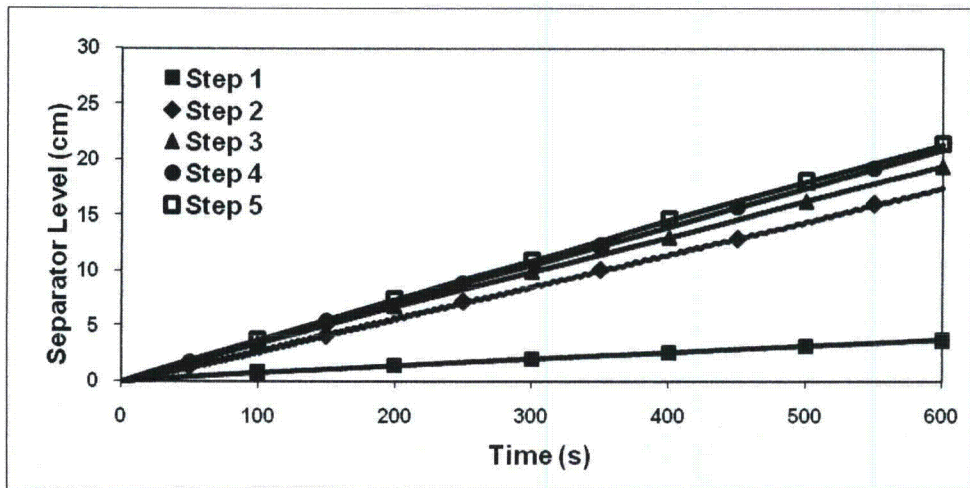


Figure 3.4 Separator Level for Test NRC-COND-01

3.2.2 Test NRC-COND-02

Test NRC-COND-02 was conducted at a nominal tube inlet steam pressure of 2.03 MPa (295 psia). The test step conditions for this test are listed in Table 3.6. Figure 3.5 shows the normalized catch tank level for each of the five steps in NRC-COND-02. Figure 3.6 shows the normalized separator level for each of the five steps in NRC-COND-02. In each of these figures the tank levels are normalized to the tank level at the beginning of the step. Step 1 ambient heat losses are estimated at 21.5 kW.

Step	SG #1 tube pressure, MPa (psia)	SG #1 tube inlet flow, kW	SG #1 Tube outlet flow, kW	SG #1 shell side steam flow, kW
1	2.053 ± 0.0066 (297.8 ± 0.957)	0	0	0
2	1.744 ± 0.0066 (252.9 ± 0.957)	427.4 ± 4.6	286.4 ± 3.1	124.6 ± 1.3
3	1.826 ± 0.0066 (264.8 ± 0.957)	349.9 ± 3.7	197.8 ± 2.1	126.8 ± 1.3
4	1.889 ± 0.0066 (274.0 ± 0.957)	284.8 ± 3.0	120.4 ± 1.3	135.2 ± 1.3
5	1.974 ± 0.0066 (286.3 ± 0.957)	168.5 ± 1.8	0	145.6 ± 1.3

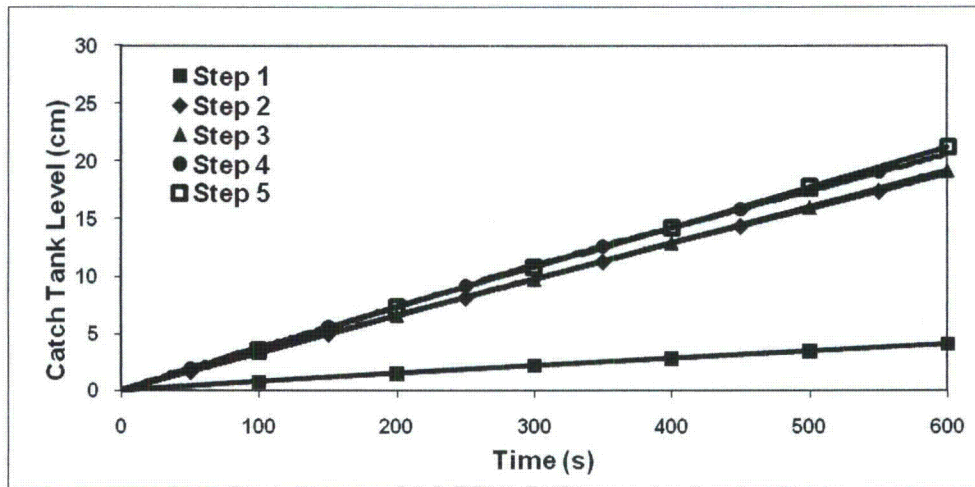


Figure 3.5 Catch Tank Level for Test NRC-COND-02

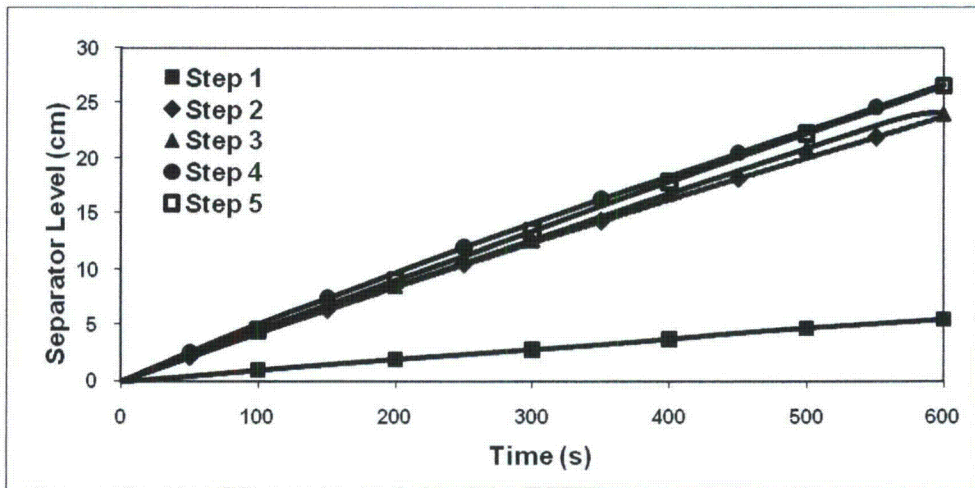


Figure 3.6 Separator Level for Test NRC-COND-02

3.2.3 Test NRC-COND-03

Test NRC-COND-03 was conducted at a nominal tube inlet steam pressure of 0.79 MPa (115 psia). The test step conditions for this test are listed in Table 3.7. Figure 3.7 shows the normalized catch tank level for each of the five steps in NRC-COND-03. Figure 3.8 shows the normalized separator level for each of the five steps in NRC-COND-03. The curve for step 3 in Figure 3.8 flattens out after approximately 500s due to the separator liquid level exceeding the measuring range of the instrumentation during this step. In each of these figures the tank levels are normalized to the tank level at the beginning of the step. Step 1 ambient heat losses are estimated at 14.9 kW.

Step	SG #1 tube pressure, MPa (psia)	SG #1 tube inlet flow, kW	SG #1 Tube outlet flow, kW	SG #1 shell side steam flow, kW
1	0.824 ± 0.0066 (119.5 ± 0.957)	0	0	0
2	0.553 ± 0.0066 (80.2 ± 0.957)	311.1 ± 4.7	218.5 ± 3.9	71.8 ± 1.3
3	0.604 ± 0.0066 (87.6 ± 0.957)	283.9 ± 4.1	159 ± 2.6	82.6 ± 1.3
4	0.654 ± 0.0066 (94.9 ± 0.957)	248.8 ± 3.4	114.5 ± 1.7	106.7 ± 1.3
5	0.770 ± 0.0066 (111.7 ± 0.957)	136.6 ± 1.8	0	92.8 ± 1.3

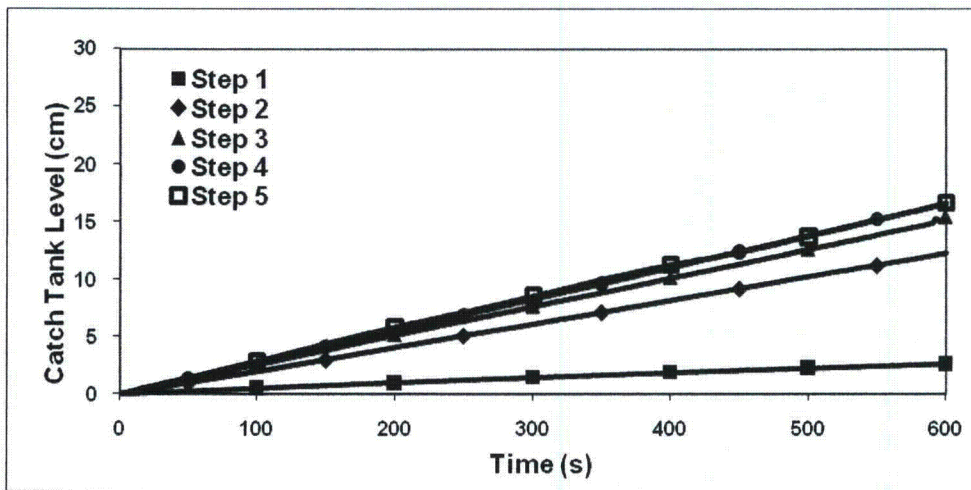


Figure 3.7 Catch Tank Level for Test NRC-COND-03

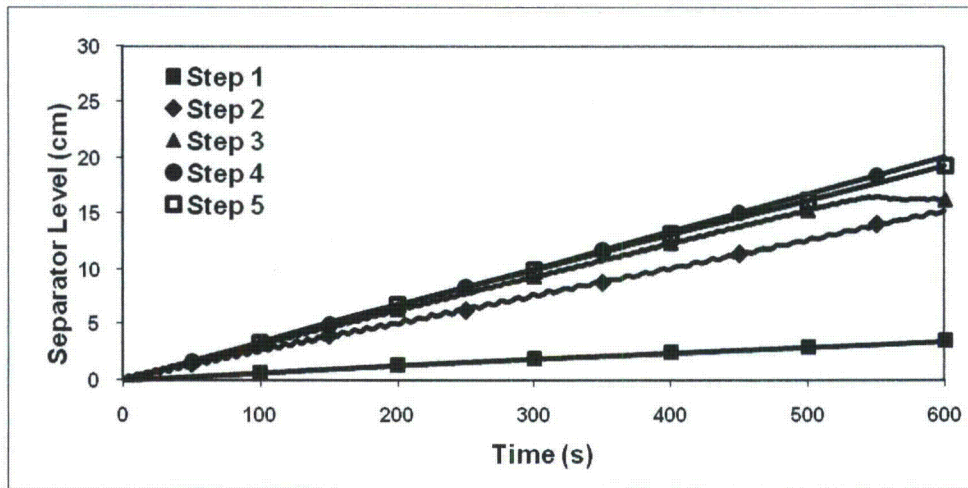


Figure 3.8 Separator Level for Test NRC-COND-03

3.2.4 Test NRC-COND-04

Test NRC-COND-04 was conducted at a nominal tube inlet steam pressure of 2.17 MPa (315 psia). The test step conditions for this test are listed in Table 3.8. Figure 3.9 shows the normalized catch tank level for each of the five steps in NRC-COND-04. Figure 3.10 shows the normalized separator level for each of the five steps in NRC-COND-04. In each of these figures the tank levels are normalized to the tank level at the beginning of the step. Step 1 ambient heat losses are estimated at 21.0 kW.

Step	SG #1 tube pressure, MPa (psia)	SG #1 tube inlet flow, kW	SG #1 Tube outlet flow, kW	SG #1 shell side steam flow, kW
1	2.164 ± 0.0066 (313.8 ± 0.957)	0	0	0
2	1.967 ± 0.0066 (285.3 ± 0.957)	552.9 ± 5.8	376.0 ± 4.0	140.2 ± 2.0
3	1.911 ± 0.0066 (277.2 ± 0.957)	696.2 ± 7.3	523.2 ± 5.6	135.8 ± 1.9
4	1.832 ± 0.0066 (265.6 ± 0.957)	914.3 ± 9.7	739.0 ± 8.0	130.2 ± 1.9

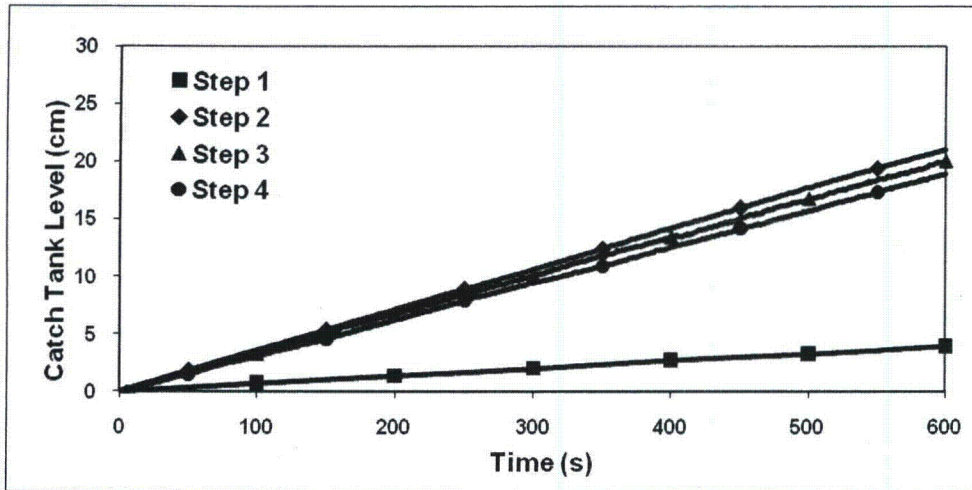


Figure 3.9 Catch Tank Level for Test NRC-COND-04

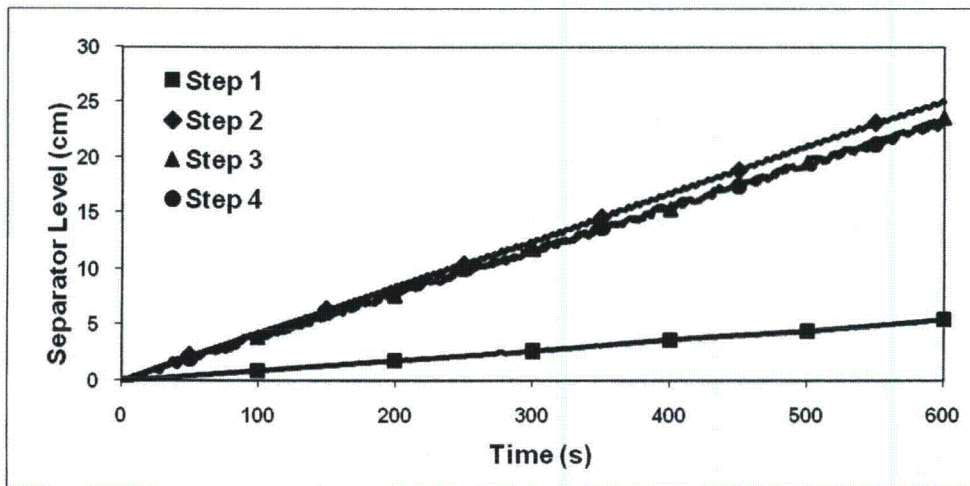


Figure 3.10 Separator Level for Test NRC-COND-04

3.2.5 Test NRC-COND-05

Test NRC-COND-05 was conducted at a nominal tube inlet steam pressure of 2.38 MPa (345 psia). The test step conditions for this test are listed in Table 3.9. Figure 3.11 shows the normalized catch tank level for each of the five steps in NRC-COND-05. Figure 3.12 shows the normalized separator level for each of the five steps in NRC-COND-05. In each of these figures the tank levels are normalized to the tank level at the beginning of the step. Step 1 ambient heat losses are estimated at 16.6 kW.

Step	SG #1 tube pressure, MPa (psia)	SG #1 tube inlet flow, kW	SG #1 Tube outlet flow, kW	SG #1 shell side steam flow, kW
1	2.407 ± 0.0066 (349.1 ± 0.957)	0	0	0
2	2.187 ± 0.0066 (317.2 ± 0.957)	587.0 ± 6.1	396.9 ± 4.2	160.9 ± 2.3
3	2.142 ± 0.0066 (310.7 ± 0.957)	703.4 ± 7.3	517.0 ± 5.5	156.1 ± 2.2
4	2.068 ± 0.0066 (300.0 ± 0.957)	909.0 ± 9.5	723.0 ± 7.7	150.3 ± 2.1

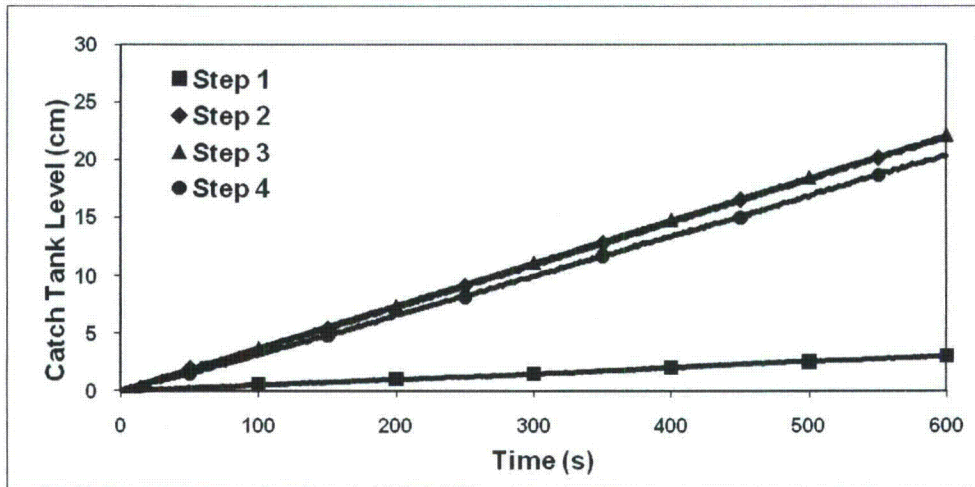


Figure 3.11 Catch Tank Level for Test NRC-COND-05

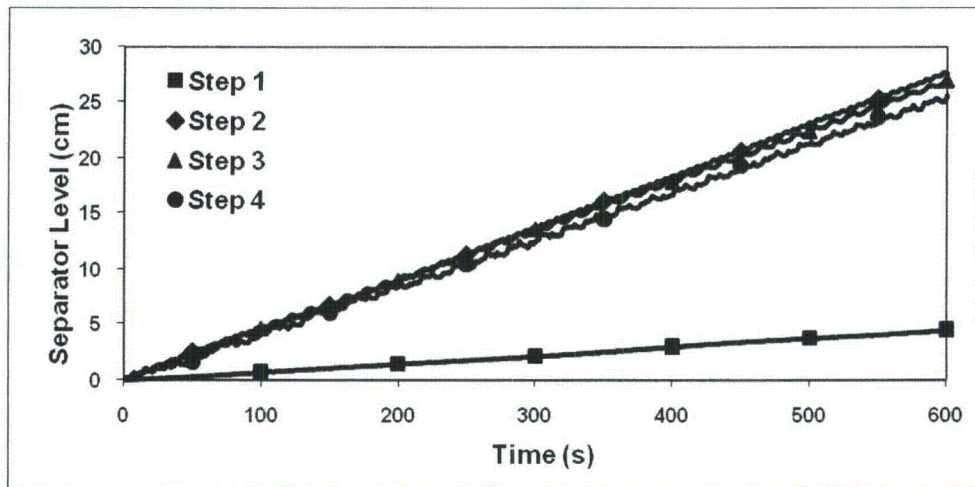


Figure 3.12 Separator Level for Test NRC-COND-05

3.2.6 Test NRC-COND-06

Test NRC-COND-06 was conducted at a nominal tube inlet steam pressure of 0.45 MPa (65 psia). The test step conditions for this test are listed in Table 3.10. Figure 3.13 shows the normalized catch tank level for each of the five steps in NRC-COND-06. Figure 3.14 shows the normalized separator level for each of the five steps in NRC-COND-06. In each of these figures the tank levels are normalized to the tank level at the beginning of the step. Step 1 ambient heat losses are estimated at 8.1 kW.

Step	SG #1 tube pressure, MPa (psia)	SG #1 tube inlet flow, kW	SG #1 Tube outlet flow, kW	SG #1 shell side steam flow, kW
1	0.464 ± 0.0066 (67.4 ± 0.957)	0	0	0
2	0.439 ± 0.0066 (63.6 ± 0.957)	193.0 ± 3.3	102.8 ± 2.0	81.5 ± 2.0
3	0.424 ± 0.0066 (61.5 ± 0.957)	279.9 ± 5.0	193.2 ± 3.8	78.4 ± 2.0
4	0.406 ± 0.0066 (58.8 ± 0.957)	376.7 ± 6.9	283.6 ± 5.9	83.1 ± 2.2
5	0.373 ± 0.0066 (54.1 ± 0.957)	513.2 ± 10.0	358.4 ± 8.6	80.2 ± 2.4

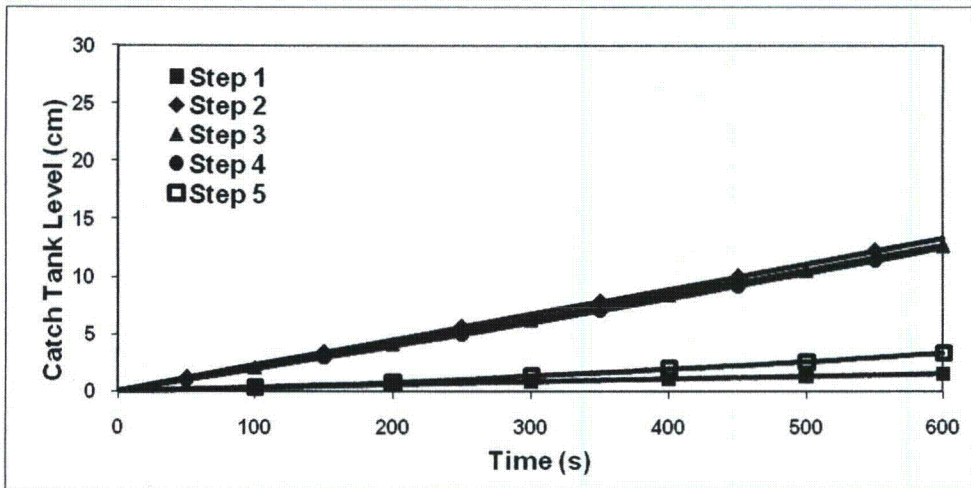


Figure 3.13 Catch Tank Level for Test NRC-COND-06

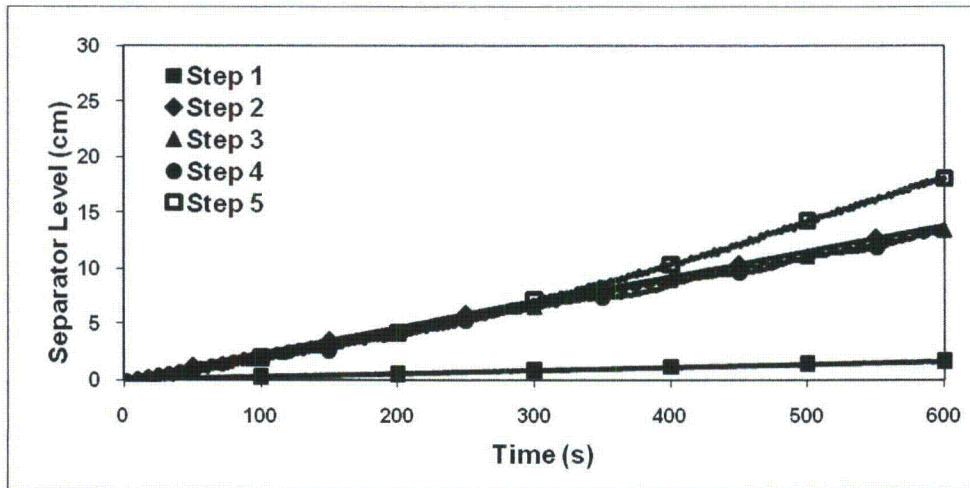


Figure 3.14 Separator Level for Test NRC-COND-06

3.2.7 Test NRC-COND-07

Test NRC-COND-07 was conducted at a nominal tube inlet steam pressure of 2.07 MPa (300 psia). Nitrogen was injected into the steam inlet stream at a nominal rate of 2.5% of total mass flow rate. The test step conditions for this test are listed in Table 3.11. Figure 3.15 shows the normalized catch tank level for each of the five steps in NRC-COND-07. Figure 3.16 shows the normalized separator level for each of the five steps in NRC-COND-07. In each of these figures the tank levels are normalized to the tank level at the beginning of the step. Step 1 ambient heat losses are estimated at 22.7 kW.

Step	SG #1 tube pressure, MPa (psia)	SG #1 tube inlet flow, kW	SG #1 Tube outlet flow, kW	SG #1 shell side steam flow, kW
1	2.174 ± 0.0066 (315.3 ± 0.957)	0	0	0
2	1.844 ± 0.0066 (267.4 ± 0.957)	894.3 ± 9.5	729.4 ± 7.9	128.6 ± 1.8
3	1.856 ± 0.0066 (269.2 ± 0.957)	878.1 ± 9.3	718.9 ± 7.7	128.9 ± 1.8

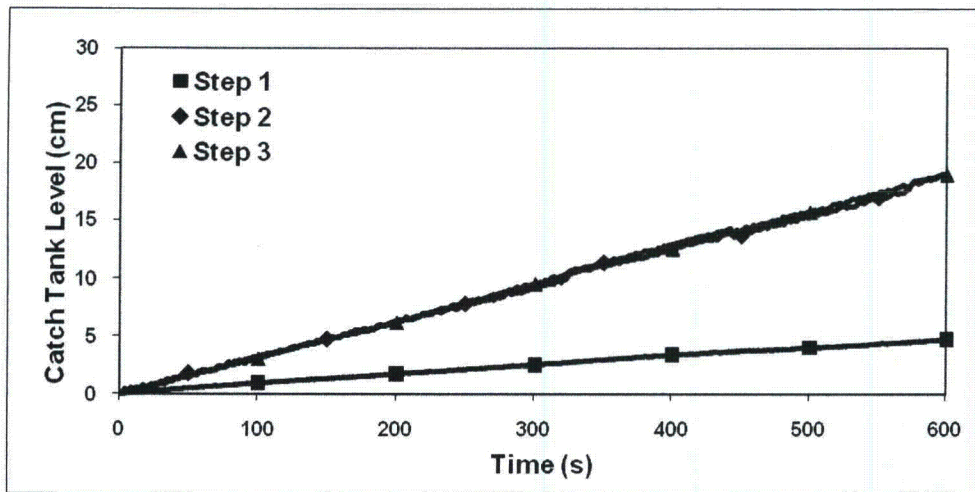


Figure 3.15 Catch Tank Level for Test NRC-COND-07

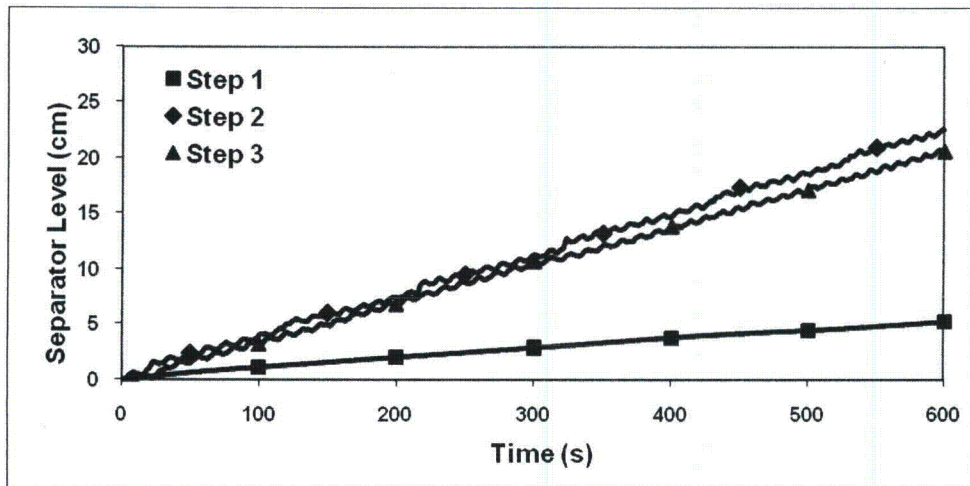


Figure 3.16 Separator Level for Test NRC-COND-07

3.2.8 Test NRC-COND-08

Test NRC-COND-08 was conducted at a nominal tube inlet steam pressure of 2.07 MPa (300 psia). Nitrogen was injected into the steam inlet stream at a nominal rate of 10.0% of total mass flow rate. The test step conditions for this test are listed in Table 3.12. Figure 3.17 shows the normalized catch tank level for each of the five steps in NRC-COND-08. Figure 3.18 shows the normalized separator level for each of the five steps in NRC-COND-08. In each of these figures the tank levels are normalized to the tank level at the beginning of the step. Step 1 ambient heat losses are estimated at 23.4 kW.

Step	SG #1 tube pressure, MPa (psia)	SG #1 tube inlet flow, kW	SG #1 Tube outlet flow, kW	SG #1 shell side steam flow, kW
1	2.183 ± 0.0066 (316.6 ± 0.957)	0	0	0
2	1.868 ± 0.0066 (271.0 ± 0.957)	887.5 ± 9.4	717.5 ± 7.7	133.0 ± 1.9
3	1.897 ± 0.0066 (275.2 ± 0.957)	866.1 ± 9.1	711.7 ± 7.6	122.6 ± 1.8

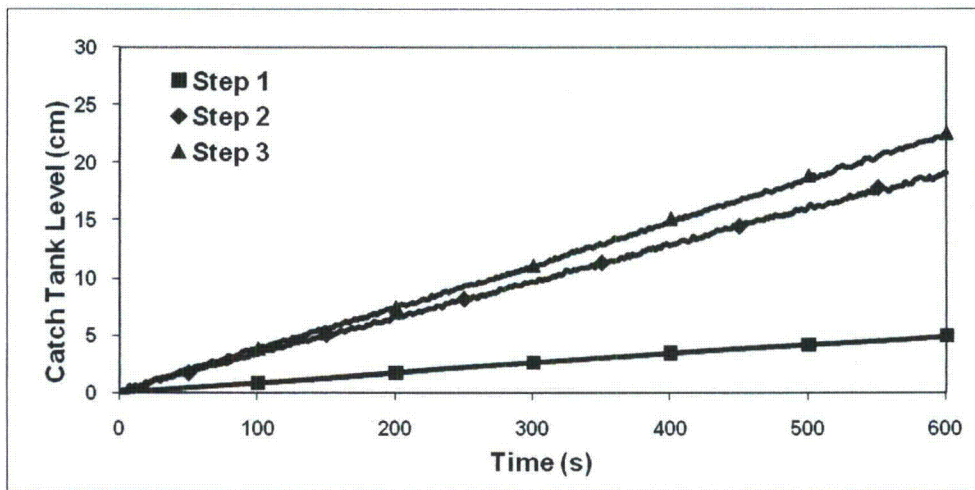


Figure 3.17 Catch Tank Level for test NRC-COND-08

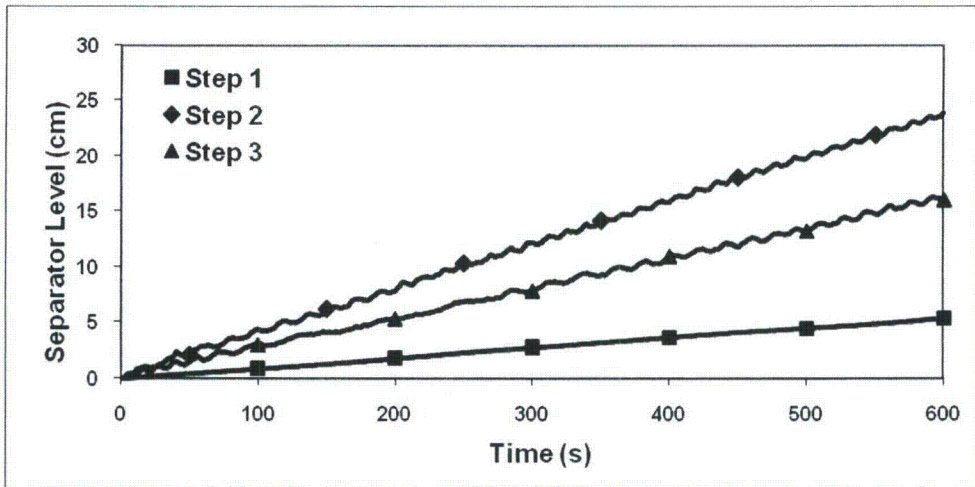


Figure 3.18 Separator Level for Test NRC-COND-08

3.3 Test Mass and Energy Balances

For each test step, a mass and energy balance was performed for the step using Equations 3.3 and 3.4.

$$\Delta \dot{m} = \dot{m}_{\text{steam in}} - \dot{m}_{\text{catch tank liquid out}} - \dot{m}_{\text{separator liquid out}} - \dot{m}_{\text{separator steam out}} - \dot{m}_{\text{catch tank steam out}} \quad (3.3)$$

$$\Delta \dot{E} = \dot{E}_{\text{steam in}} - \dot{E}_{\text{catch tank liquid out}} - \dot{E}_{\text{separator liquid out}} - \dot{E}_{\text{separator steam out}} - \dot{E}_{\text{catch tank steam out}} - \dot{E}_{\text{SG steam Out}} - \dot{E}_{\text{loss}} - \dot{E}_{\text{SG}} \quad (3.4)$$

In Equations 3.3 and 3.4, $\Delta \dot{m}$ and $\Delta \dot{E}$ are the mass and energy deficits respectively. \dot{E}_{loss} is the ambient heat loss for each test determined in step 1 of the test. \dot{E}_{SG} is the rate of change in the steam/water stored energy on the shell side of SG #1. The percentages shown in Figures 3.19 and 3.20 are the percentages of mass and energy deficits to the mass and energy entering the system as steam.

Mass flow rates are determined using the volumetric flow rates measured by the flow meters, tank level changes measured by the DP cells and the density as determined using pressure information. The mass flow rates are then summed over each test step to determine the mass balance for each test step. Energy flow rates are determined using the volumetric flow rates measured by the flow meters, tank level changes measured by the DP cells and the enthalpy and density as determined using pressure information. Table 3.13 lists the instrumentation used in the determination of each term in the mass and energy balances. The uncertainty in the mass and energy balances are calculated using Equations 3.1 and 3.2 in conjunction with the instrument uncertainty outlined in Table 3.3.

In test steps 7-3 and 8-3, nitrogen gas is injected into the inlet steam flow so that the inlet gas flow is a mixture of steam and nitrogen. When calculating the mass and energy flow into and out of the system for these test steps, the saturated steam density for the measured pressure is used. The inlet and outlet densities are not adjusted to account for mixture due to the lack of molar flow data and thus partial pressure data for the nitrogen or steam. Since the mass fraction of nitrogen is small in tests -07 and -08, only a small impact is anticipated.

Figures 3.19 and 3.20 show the calculated mass and energy balance for each test. The instrument uncertainty of the mass and energy balances are shown as error bars. In general, there appears to be a positive bias in the mass and energy balances. Test step 6-5 has the largest mass/energy bias at nearly 15%. Physically, this positive bias would correspond to a situation where more mass is entering the system than is leaving, thus the positive bias acts as if some mass (and thus energy) is being stored in the system. One possible explanation is that some of the condensed liquid on the hot leg side is held up in the hot leg inlet piping by virtue of the countercurrent flow of the incoming steam. However, the current instrumentation package for these tests does not allow for reliable indication of liquid accumulation in the SG tubes and thus the holdup of liquid in the tubes is not measured in these tests.

Table 3.13 Mass and Energy Balance Instrumentation

Location	Mass Balance	Energy Balance
Steam in	<ul style="list-style-type: none"> FVM-002: volumetric flow rate. PT-004: Saturated steam density. 	<ul style="list-style-type: none"> Mass rate. PT-004: Saturated steam enthalpy.
Catch tank liquid out	<ul style="list-style-type: none"> DP-219: condensate height. Table 3.2: tank geometry. Saturated water density at atmospheric conditions. 	<ul style="list-style-type: none"> Mass rate. Saturated water enthalpy at atmospheric conditions.
Catch tank steam out (-01 through -02)	<ul style="list-style-type: none"> Catch tank liquid out mass rate. PT-004: Saturated water entropy. Saturated steam and water entropy at atmospheric conditions. 	<ul style="list-style-type: none"> Mass rate. Saturated steam enthalpy at atmospheric conditions.
Catch tank steam out (-03 through -08)	<ul style="list-style-type: none"> FVM-004: volumetric flow rate. Saturated steam density at atmospheric conditions. 	<ul style="list-style-type: none"> Mass rate. Saturated steam enthalpy at atmospheric conditions.
Separator liquid out	<ul style="list-style-type: none"> DP-217: condensate height. Table 3.2: tank geometry. PT-501: Saturated water density. 	<ul style="list-style-type: none"> Mass rate. PT-501: Saturated water enthalpy.
Separator steam out	<ul style="list-style-type: none"> FVM-001: volumetric flow rate. PT-501: Saturated steam density. 	<ul style="list-style-type: none"> Mass rate. PT-501: Saturated steam enthalpy.
SG steam out (-01 through -03)		<ul style="list-style-type: none"> $=\dot{E}_{transfer} - \dot{E}_{SG} - \dot{E}_{loss}$ $\dot{E}_{transfer}$ defined as energy transferred through the tubes by virtue of condensation. (See Section 4.4)
SG steam out (-04 through -08)		<ul style="list-style-type: none"> FVM-003: volumetric flow rate. PT-002: Saturated steam density and enthalpy.
Loss		<ul style="list-style-type: none"> Determined in step 1 of each test. (Sections 3.2.1-3.2.8) Equal to $\dot{E}_{transfer}$ in step 1 of each test.
SG		<ul style="list-style-type: none"> LDP-303: Change in shell water level. $0.1878m^2$: SG shell area. PT-301: Density and enthalpy of saturated water and steam.

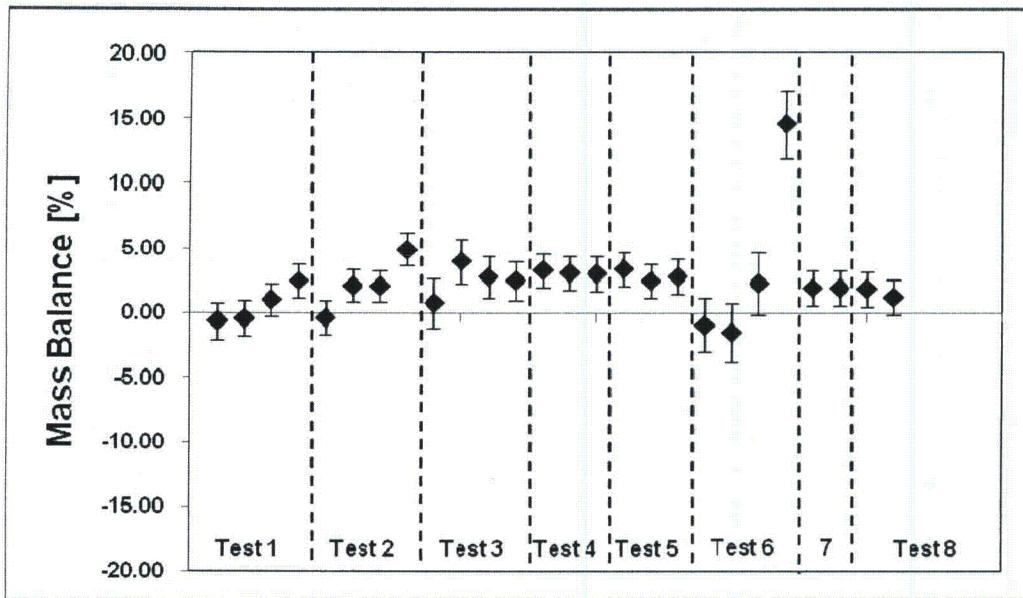


Figure 3.19 Mass Balances

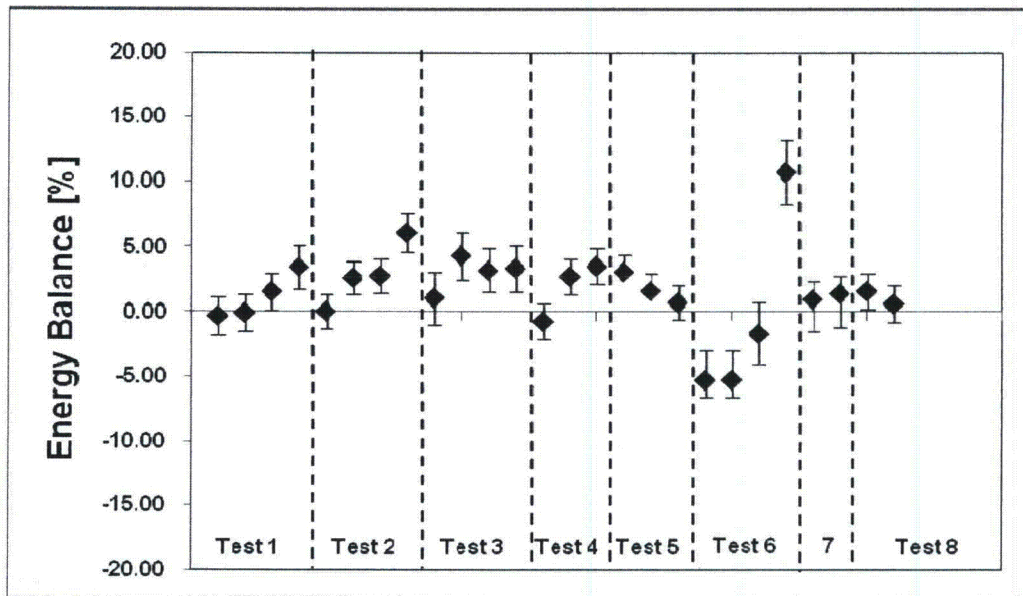


Figure 3.20 Energy Balances

4 TEST ANALYSES

The objective of these experiments was primarily to provide experimental data to assess TRACE steam generator modeling techniques and to assist in development of improved models for condensation and steam generator thermal-hydraulics. In this section, dimensionless numbers of importance to the steam condensation process are introduced, condensation heat transfer coefficients inside the SG tubes are estimated, and experimental test data is used to examine functional relationships important to the condensation process in the PWR SG.

4.1 Assumptions

The following assumptions have been made in the course of the analyses of the test data:

1. It has been assumed that the steam/water mixture on the shell side in SG#1 is saturated. The reason for this assumption is based on the procedures used in the test series. Before each test step is conducted, subcooled water is added to the shell side of SG#1. This water is heated up using the steam flowing through the tubes in SG#1. Only after the temperature in the SG#1 inventory has reached saturation temperature and the shell side of SG#1 is producing steam is the data recorded for the subject test step. No liquid is added to the SG during the test step and the inventory is allowed to boil off without replacement. Enough liquid is added at the start of the test step so that the U-tubes remained covered for the duration of the test step.
2. It is assumed that saturated nucleate pool boiling is the dominant heat transfer regime occurring on the shell side of SG#1. When the heat transfer coefficient is calculated for the shell side of the SG the Cooper correlation has been used which is applicable to saturated nucleate pool boiling. The surface roughness on the outside of the U-tubes is required for the Cooper relation. The tubes are assumed to be made of new stainless steel ($R_p = 2\mu\text{m}$) when determining the surface roughness for use with the Cooper relation. This is justified since the tubes are indeed made of stainless steel. However, no effort has been made to quantify how the years of operation have changed the surface roughness.
3. An isentropic expansion was assumed at the catch tank to account for condensate mass lost due to the flashing of steam. The condensate that is formed on the uphill side of the SG is at the tube pressure which ranges between 0.37MPa and 2.19MPa. The condensate then passes through either a float valve or a ball valve (depending on the test) to the catch tank which is at atmospheric pressure. Due to the pressure drop across the valve a certain mass of the condensate will flash to steam. This is where the isentropic expansion is assumed. This assumption is particularly important for tests -01 and -02 since there is no direct measurement of steam flow through the catch tank in these tests. Only the condensate flow is measured. For the remaining tests, a steam flow meter is installed at the catch tank to measure the flow of steam.

4.2 Condensation Rates

During each test step the steam condensation rates were approximately constant. This can be seen by observing the constant slope of the normalized tank level curves in Figures 3.3 through 3.18. The tank levels were normalized to zero cm at the beginning of each test step. The slopes of the tank level curves are proportional to the steam condensation rate inside the SG tubes. Table 4.1 shows the mean condensation rates for each of the test steps.

As discussed in Section 3.1, a float valve was installed upstream of the catch tank to allow condensate to flow into the tank without releasing steam for tests -01 and -02. For tests -01 and -02 a constant entropy expansion was assumed at the catch tank to account for the condensate mass lost due to flashing. The flow of the flashed condensate was not measured using a flow meter. For tests -03, -04, -05, -06, -07 and -08, a ball valve was used instead of the float valve. Use of a ball valve allowed some steam to flow through the catch tank along with the condensate. During these tests (-03, -04, -05, -06, -07 and -08),

before being vented to atmosphere, the steam flowing through the catch tank was measured by a volumetric flow meter (FVM-004) with the exception of test steps 3-2 and 6-4. For all tests in Table 4.1 the HL condensation rate includes the catch tank flashing flow rate calculated assuming an isentropic expansion. For tests -03 through -08, the catch tank steam flow out rate has been included as well as the calculated steam flashing rate. The information in Table 4.1 can be compared with the mass balance information from Section 3.3 using the following:

- $\dot{m}_{\text{steam in}}$ → steam inlet flow
- $\dot{m}_{\text{separator steam out}}$ → steam outlet flow
- $\dot{m}_{\text{catch tank liquid out}}$ → HL U-tube condensation rate minus catch tank flashing rate
- $\dot{m}_{\text{separator liquid out}}$ → CL U-tube condensation rate
- $\dot{m}_{\text{catch tank steam out}}$ → catch tank steam flow out or catch tank flashing rate (tests -01 and -02)

The cross sectional area of the catch tank and the separator are identical and thus the normalized tank level curves for the catch tank and the separator can be compared directly to investigate relative condensation rates between the two. Figure 4.1 shows the normalized tank levels for the catch tank and the separator for Test NRC-COND-01 step 2. In this figure the normalized tank level increases at a faster rate in the separator than in the catch tank. This pattern holds for most test steps.

The pattern shown in Figure 4.1 does not indicate a greater condensation rate on the CL side of the SG tubes than the HL side of the tube. The collapsed liquid level in the catch tank (as shown in Figure 4.1) under predicts the condensation rate on the HL side since it does not take into account the expansion of the liquid as it enters the catch tank and the subsequent flashing of some of the condensate into steam. The mean condensation rate information found in Table 4.1 takes catch tank flashing into consideration. It can be noted from Table 4.1 that when catch tank flashing is taken into account a distinctive relationship between CL and HL condensation rates does not emerge except for the highest inlet steam velocity test (test 6, step 5).

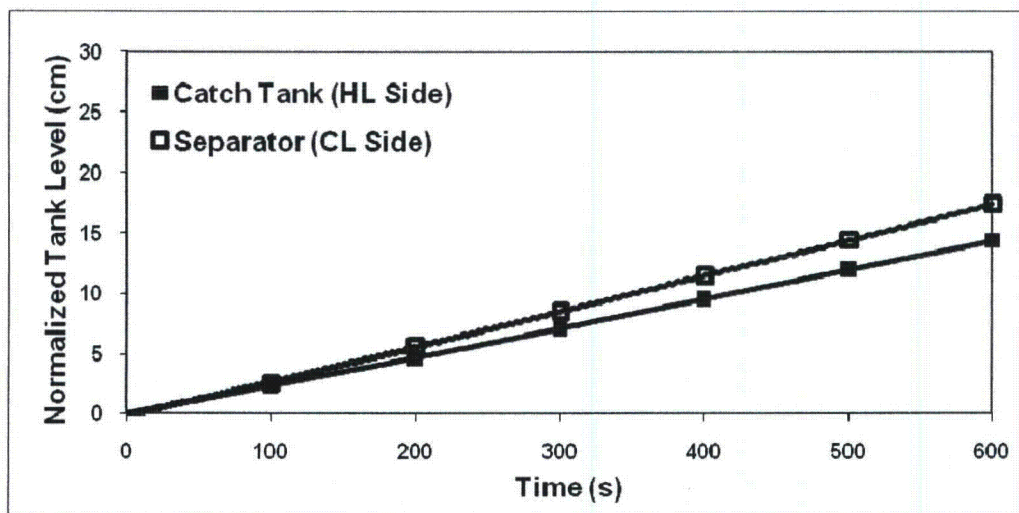


Figure 4.1 Normalized Tank Levels for Test NRC-COND-01 Step 2

Table 4.1 Mean condensation and flow rates

Test NRC-COND-01	Step 2	Step 3	Step 4	Step 5
Steam inlet flow (kg/hr)	487.23	427.49	300.70	175.15
U-tube steam inlet velocity (m/s)	0.84	0.71	0.47	0.26
Steam outlet flow (kg/hr)	353.42	279.49	134.84	0.35
U-tube steam outlet velocity (m/s)	0.63	0.47	0.21	0.00
HL U-tube condensation rate (kg /hr)	70.54	76.66	84.08	90.13
CL U-tube condensation rate (kg /hr)	66.23	73.15	78.70	80.30
Catch tank flashing rate (kg/hr)	10.91	12.08	13.67	14.98
Test NRC-COND-02	Step 2	Step 3	Step 4	Step 5
Steam inlet flow (kg /hr)	550.47	450.41	366.55	216.84
U-tube steam inlet velocity (m/s)	0.70	0.55	0.43	0.24
Steam outlet flow (kg /hr)	368.97	254.72	155.01	0.47
U-tube steam outlet velocity (m/s)	0.48	0.31	0.18	0.00
HL U-tube condensation rate (kg /hr)	95.19	97.23	105.26	108.27
CL U-tube condensation rate (kg /hr)	88.36	88.97	98.67	97.49
Catch tank flashing rate (kg/hr)	16.94	17.64	19.37	20.30
Test NRC-COND-03	Step 2	Step 3	Step 4	Step 5
Steam inlet flow (kg /hr)	406.93	370.82	324.51	177.69
U-tube steam inlet velocity (m/s)	1.55	1.30	1.05	0.50
Steam outlet flow (kg /hr)	286.32	207.83	149.39	0.11
U-tube steam outlet velocity (m/s)	1.22	0.78	0.50	0.00
HL U-tube condensation rate (kg /hr)	56.62	71.49	76.82	78.31
CL U-tube condensation rate (kg /hr)	60.86	72.65	78.86	75.10
Catch tank flashing rate (kg/hr)	5.54	7.40	8.36	9.36
Catch tank steam flow out (kg/hr)	NA	11.37	18.65	29.05
Test NRC-COND-04	Step 2	Step 3	Step 4	
Steam inlet flow (kg /hr)	711.45	895.94	1177.03	
U-tube steam inlet velocity (m/s)	0.81	1.04	1.43	
Steam outlet flow (kg /hr)	483.75	673.35	951.51	
U-tube steam outlet velocity (m/s)	0.55	0.79	1.17	
HL U-tube condensation rate (kg /hr)	107.60	102.44	96.13	
CL U-tube condensation rate (kg /hr)	92.29	87.20	86.01	
Catch tank flashing rate (kg/hr)	20.14	18.94	17.46	
Catch tank steam flow out (kg/hr)	24.31	24.06	24.88	
Test NRC-COND-05	Step 2	Step 3	Step 4	
Steam inlet flow (kg /hr)	754.77	904.48	1169.12	
U-tube steam inlet velocity (m/s)	0.77	0.94	1.26	
Steam outlet flow (kg /hr)	510.35	664.86	929.89	
U-tube steam outlet velocity (m/s)	0.52	0.69	1.01	
HL U-tube condensation rate (kg /hr)	113.95	114.26	104.45	
CL U-tube condensation rate (kg /hr)	101.09	98.74	94.15	
Catch tank flashing rate (kg/hr)	22.28	22.15	19.96	
Catch tank steam flow out (kg/hr)	25.92	26.29	27.56	
Test NRC-COND-06	Step 2	Step 3	Step 4	Step 5
Steam inlet flow (kg /hr)	253.35	367.62	495.16	675.54
U-tube steam inlet velocity (m/s)	1.20	1.80	2.53	3.73
Steam outlet flow (kg /hr)	135.01	253.83	373.07	472.90
U-tube steam outlet velocity (m/s)	0.64	1.27	1.99	2.97
HL U-tube condensation rate (kg /hr)	60.63	57.43	56.45	15.08
CL U-tube condensation rate (kg /hr)	55.28	53.65	54.20	72.94
Catch tank flashing rate (kg/hr)	5.05	4.66	4.43	1.11
Catch tank steam flow out (kg/hr)	9.90	12.94	NA	17.23

Table 4.1 Mean condensation and flow rates (continued)			
Test NRC-COND-07	Step 2	Step 3	
Steam inlet flow (kg /hr)	1151.25	1104.36	
N ₂ inlet flow (kg/hr)	NA	25.99	
U-tube gas inlet velocity (m/s)	1.39	1.35	
Steam outlet flow (kg /hr)	938.99	899.70	
N ₂ outlet flow (kg/hr)	NA	25.75	
U-tube gas outlet velocity (m/s)	1.14	1.12	
HL U-tube condensation rate (kg /hr)	96.53	96.18	
CL U-tube condensation rate (kg /hr)	83.84	76.45	
Catch tank flashing rate (kg/hr)	17.58	17.57	
Catch tank steam flow out (kg/hr)	27.21	27.86	
N ₂ catch tank outlet flow (kg/hr)	NA	0.24	
Test NRC-COND-08	Step 2	Step 3	
Steam inlet flow (kg /hr)	1142.44	987.76	
N ₂ inlet flow (kg/hr)	NA	126.96	
U-tube steam inlet velocity (m/s)	1.36	1.31	
Steam outlet flow (kg /hr)	923.65	790.37	
N ₂ outlet flow (kg/hr)	NA	125.73	
U-tube steam outlet velocity (m/s)	1.11	1.08	
HL U-tube condensation rate (kg /hr)	97.21	114.86	
CL U-tube condensation rate (kg /hr)	88.53	59.48	
Catch tank flashing rate (kg/hr)	17.81	21.18	
Catch tank steam flow out (kg/hr)	29.61	30.80	
N ₂ catch tank outlet flow (kg/hr)	NA	1.24	

4.3 Steam Condensation Non-Dimensional Analysis

Condensation is a phenomena that has been studied extensively. Nusselt made the first attempt in 1916 for laminar condensation on a flat plate. This analytical solution relied on several assumptions and reduced the description of the condensation process to two important non-dimensional variables, the modified Nusselt number (Equation 4.1) and the film Reynolds number (Equation 4.2). (Ref. 1)

$$Nu_{mod} = \frac{\bar{h}}{k_f} \left[\frac{\mu_f^2}{\rho_f (\rho_f - \rho_g) g} \right]^{\frac{1}{3}} = 1.47 Re_{film}^{-\frac{1}{3}} \quad (4.1)$$

$$Re_{film} = \frac{4\Gamma}{\mu_f} \quad (4.2)$$

Further development of the condensation problem led to the elimination of many of Nusselt's original assumptions, most notably the assumption of neglected film subcooling, linear temperature profile across the film and negligible advection effects in the film. The inclusion of these effects points to Prandtl number (Equation 4.3) as an additional variable of possible importance. (Refs. 2, 3, 4, 5, 6)

$$Pr = \frac{c_{p,f} \mu_f}{k_f} \quad (4.3)$$

For turbulent flow along a flat plate the variables of interest are the same as for laminar flow (Nu_{mod} , Re_{film} , Pr_{film}), however, the functional dependencies may change. (Refs. 7, 8, 9)

The application of condensation theory to cases of condensation within tubes with a non-negligible vapor velocity yields the non-dimensional interfacial shear stress (Equations 4.4, 4.5 and 4.6) as a variable of interest. (Refs. 10, 11, 12)

$$\tau_i^* = f_i \left[\frac{G_g^2}{2\rho_g} \right] \left[\frac{\rho_f}{(\rho_f - \rho_g)^2 \mu_f^2 g^2} \right]^{\frac{1}{3}} \quad (4.4)$$

$$G_g = \sqrt{\frac{G_i^2 + G_i G_o + G_o^2}{3}} \quad (4.5)$$

$$f_i = 0.316 Re_{stm}^{-0.25} \quad (4.6)$$

4.4 Estimation of Heat Transfer Coefficients

The overall heat transfer coefficient (U) can be estimated from the experimental data using Equation 4.7.

$$E_{transfer} = U \cdot A \cdot \Delta T_m \Rightarrow U = \frac{E_{transfer}}{A \cdot \Delta T_m} \quad (4.7)$$

$E_{transfer}$ is the energy transferred across the SG tubes to the secondary side of the SG. $E_{transfer}$ is determined using the amount of energy required to condense the steam in the tubes. It is calculated from the HL and CL condensation rates in Table 4.1 and the heat of vaporization at the inlet (PT-004) and outlet (PT-501) tube pressures respectively. A is the inside surface area of the SG U-tubes. ΔT_m is the mean temperature difference between tube and shell side of the SG. The mean temperature difference is calculated using Equation 4.8.

$$\Delta T_m = \frac{\Delta T_{in} + \Delta T_{out}}{2} \quad (4.8)$$

ΔT_{in} represents the difference between the average SG tube inlet temperature as listed in Table 4.2 (calculated by averaging the maximum temperature of TF-211/TF-217 and the maximum temperature of TF-207/TF-215) and the saturation temperature of the SG shell side also listed in table 4.2 (determined from PT-301). ΔT_{out} represents the difference between the average SG tube outlet temperature as listed in Table 4.2 (calculated by averaging the minimum temperature of TF-217/TF-213 and the minimum temperature of TF-215/TF-209) and the saturation temperature of the SG shell side.

Since the wall temperature is not measured in the current test series the condensation heat transfer coefficient inside the SG tubes can only be calculated indirectly from U . The thermal resistance across the SG U-tubes is comprised of three parts: resistance of convection due to boiling of the shell side, the resistance across the tube walls, and the resistance due to condensation heat transfer inside of the tube. The overall heat transfer coefficient can be calculated from its components using Equation 4.9. k_w is the thermal conductivity of stainless steel 304.

$$U = \frac{1}{\frac{1}{h_i} + \frac{r_i}{k_w} \ln \frac{r_o}{r_i} + \frac{r_i}{r_o} \frac{1}{h_o}} \quad (4.9)$$

The heat transfer coefficient on the shell side of the SG can be calculated as saturated nucleate pool boiling. The Cooper method (Equations 4.10 and 4.11) can be used to estimate the heat transfer coefficient for nucleate pool boiling. (Ref. 13) The critical pressure ratio is calculated using the SG#1 shell pressure from PT-301. The heat flux is calculated using $E_{transfer}$ and the outside surface area of the SG tubes. The surface roughness used is that of new stainless steel ($R_p = 2\mu\text{m}$) as discussed in Section 4.1.

$$h = 55P_r^n (-0.4343 \ln(P_r))^{-0.55} M^{-0.5} (q'')^{0.67} \quad (4.10)$$

$$n = 0.12 - 0.08686 \ln(R_p) \quad (4.11)$$

Table 4.2 lists pressures and temperatures for both the tube and the secondary side shell for the individual test steps. The overall heat transfer coefficients, shell side heat transfer coefficients and condensation heat transfer coefficients on the inside of the tube as calculated using Equations 4.7, 4.10 and 4.9 respectively are also presented in Table 4.2.

Table 4.2 Heat Transfer Coefficients

Test-Step	Tube P (PT-004) [MPa]	Tube T _{in} [°C]	Tube T _{out} [°C]	Shell P (PT-301) [MPa]	Shell T [°C]	U [W/m ² -K]	h _o [W/m ² -K]	h _i [W/m ² -K]
1-2	1.27	190.7	190.3	1.21	188.2	967.6	1554.8	2440.8
1-3	1.33	192.9	192.3	1.27	190.4	1133.1	1668.1	3362.5
1-4	1.42	196.4	195.7	1.37	193.9	1229.4	1789.9	3784.3
1-5	1.49	198.9	198.1	1.44	196.4	1325.6	1865.7	4438.6
2-2	1.74	205.9	205.5	1.66	203.3	1211.1	2017.8	3008.9
2-3	1.83	208.4	207.6	1.75	205.8	1358.5	2059.4	3974.8
2-4	1.89	210.2	209.4	1.82	207.6	1479.9	2205.3	4554.0
2-5	1.97	212.6	211.7	1.91	210.0	1510.7	2241.1	4712.0
3-2	0.55	154.0	153.7	0.48	150.1	544.7	1188.8	964.4
3-3	0.60	158.3	158.0	0.54	154.6	709.4	1391.0	1391.0
3-4	0.65	162.1	161.5	0.60	158.7	856.9	1491.6	1926.2
3-5	0.77	169.6	168.7	0.73	166.4	946.9	1528.5	2366.8
4-2	1.97	212.3	211.7	1.89	209.6	1332.8	2194.8	3422.2
4-3	1.91	210.8	210.1	1.84	208.2	1339.3	2106.0	3681.9
4-4	1.83	208.6	208.0	1.76	206.0	1279.9	2031.7	3437.2
5-2	2.19	217.7	216.9	2.11	215.2	1599.1	2359.6	5117.2
5-3	2.14	216.6	215.8	2.07	214.1	1591.7	2334.1	5149.1
5-4	2.07	214.7	214.2	2.00	212.3	1448.6	2210.4	4253.6
6-2	0.44	147.9	147.7	0.40	144.0	545.4	1147.3	992.1
6-3	0.42	146.5	146.3	0.39	142.6	521.8	1108.0	940.5
6-4	0.41	144.6	144.4	0.37	140.7	507.9	1095.5	903.4
6-5	0.37	140.6	140.1	0.33	136.4	403.8	923.7	682.8
7-2	1.84	209.0	208.4	1.78	206.6	1369.6	2023.3	4202.7
7-3	1.86	208.3	207.6	1.76	206.0	1402.0	1957.3	4846.5
8-2	1.87	209.7	209.0	1.80	207.2	1378.6	2068.5	4119.3
8-3	1.90	205.7	204.7	1.66	203.1	1298.1	1935.3	3871.3

4.5 Nusselt Number Analysis

The modified Nusselt number (Equation 4.1) is analyzed as a function of the film Reynolds number (Equation 4.2), the Prandtl number (Equation 4.3) and the non-dimensional interfacial shear stress (Equation 4.4). Figure 4.2 shows the modified Nu plotted against the film Re for each of the test steps in this experimental program. Nu_{mod} and Re_{film} are calculated using the average condensation heat transfer coefficient (h_i), condensation rates listed in Table 4.1, tube geometric data (Section 2.4) and the thermodynamic conditions at the average tube pressure (PT-501 and PT-004). An increasing Nu_{mod} as a function of increasing Re_{film} is characteristic of turbulent flow in the condensate film. In the current U-tube tests this is generally seen for Re_{film} above approximately 60. The flat Nu_{mod} as a function of increasing Re_{film} is characteristic of the transition between laminar-wavy and turbulent flow. This is seen in the current test program for Re_{film} below 60. A decreasing Nu_{mod} vs Re_{film} which is characteristic of laminar and laminar-wavy flow in the condensate layer is not seen in the current test program. The smallest Re_{film} tested here is approximately 40.

For the test steps with a film Reynolds number greater than 60 (turbulent regime) a correlation can be developed for the data collected in this test program as noted in Equation 4.12.

$$Nu_{mod} = 2.68 \times 10^{-4} Re_{film}^{1.18} \quad (4.12)$$

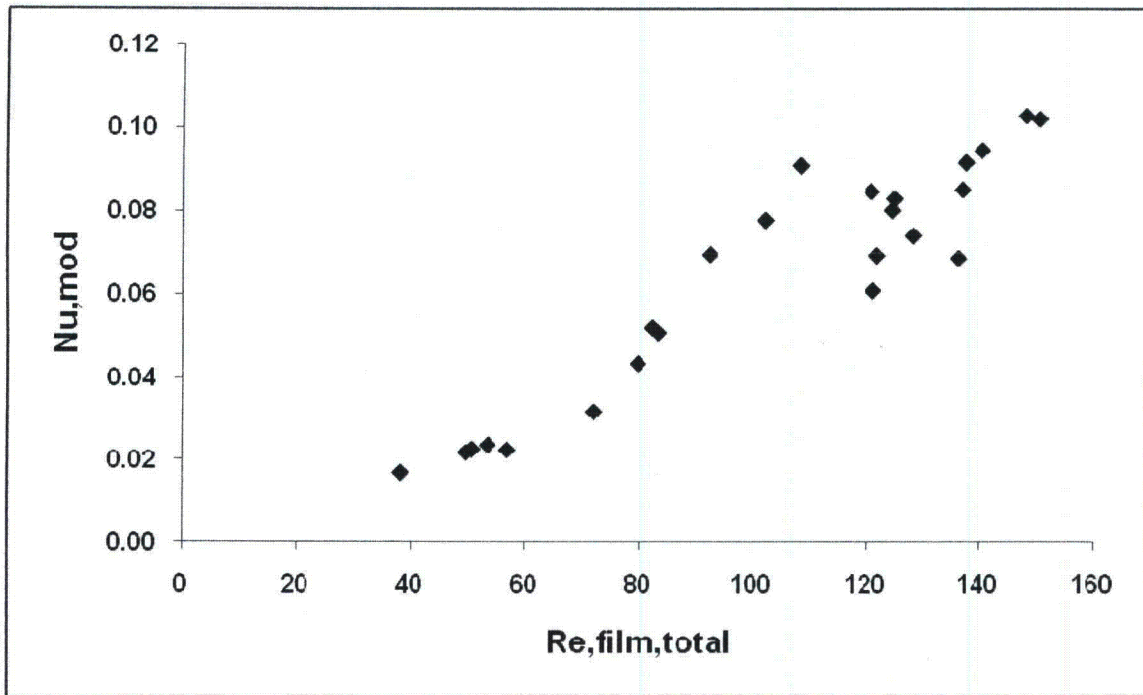


Figure 4.2 Modified Nusselt Number for U-tube Condensation (Re_{film})

As noted, for condensation through a vertical tube with significant vapor velocity, the Prandtl number and the dimensionless interfacial shear also play a role in influencing the modified Nusselt number. The Prandtl number is calculated using the thermodynamic conditions at the average tube pressure (PT-501 and PT-004). The dimensionless interfacial shear stress is determined using the thermodynamic conditions at the average tube pressure (PT-501 and PT-004) as well as G_g (evaluated using inlet and outlet steam mass flow rates from FVM-002 and FVM-001 respectively) and Re_{stm} (evaluated using the average steam mass flow rate from FVM-002/FVM-001 and the saturated thermodynamic conditions at the average tube pressure). For the series of tests analyzed here the Prandtl number ranges from 0.87 to 1.24 while the dimensionless interfacial shear stress ranges from 0.04 to 2.47. Figure 4.3 shows the modified Nusselt number as a function of the film Prandtl number. Figure 4.4 shows the modified Nusselt number as a function of film Reynolds number for various Prandtl numbers.

Figure 4.3 appears to show an inverse correlation between the modified Nusselt number and film Prandtl number. For tests with a Pr_{film} below one, there is a wide range of modified Nusselt numbers within a very narrow band of Pr_{film} . For tests with a Pr_{film} above one (tests -03 and -06), there is a slightly smaller range of modified Nusselt numbers within a wider band of Pr_{film} . Pr_{film} also varies inversely with pressure, thus the higher Pr_{film} tests correspond to the lower pressure tests. At lower pressures, the latent heat of vaporization is higher and would lead to less condensation on a unit energy transferred basis resulting in lower film Reynolds numbers. Therefore, the inverse relationship between Re_{film} and Pr_{film} can be explained through the impact of pressure on both parameters. This relationship between Re_{film} and Pr_{film} for these tests can be seen in Figure 4.4—higher Re_{film} tests correspond to lower Pr_{film} . A noticeable effect from Pr_{film} independent of Re_{film} theoretically could be seen by different slopes in Figure 4.4 for tests with different Pr_{film} . It appears that the tests with smallest Pr_{film} (<0.9) may have a different slope than tests with higher Pr_{film} and thus the film Prandtl number may have an effect on condensation in the U-tube steam generator independent of the film Reynolds number. However, before any general conclusions can be made on this point a wider range of Re_{film} should be tested for both small and large Pr_{film} tests.

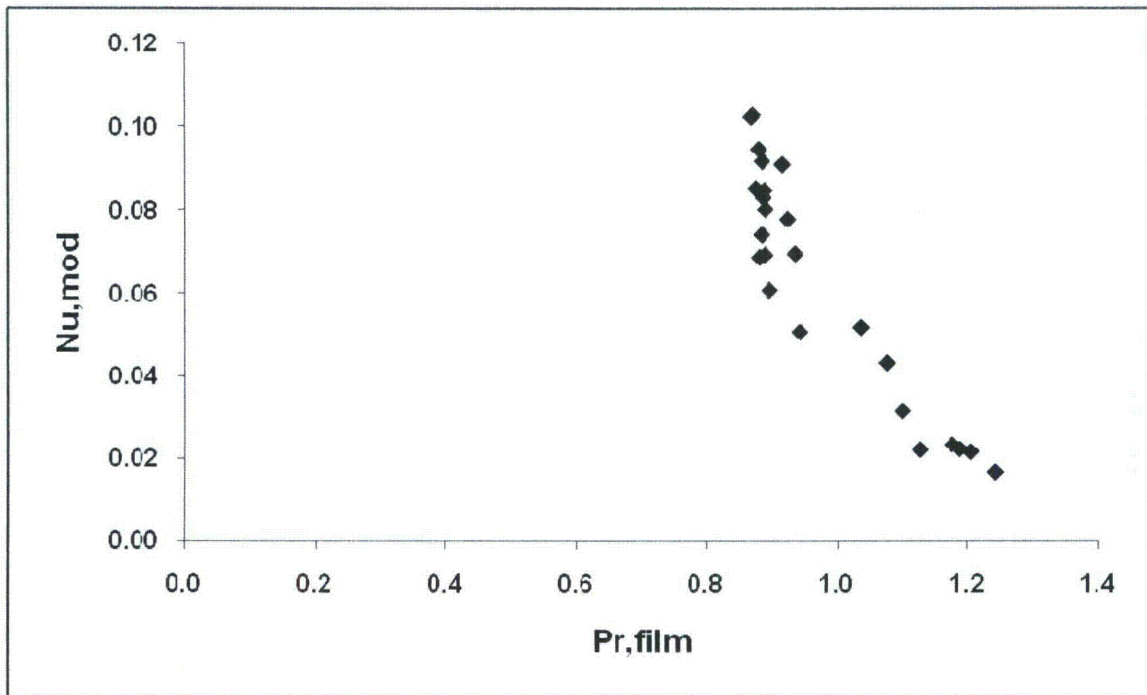


Figure 4.3 Modified Nusselt Number for U-tube Condensation (Pr_{film})

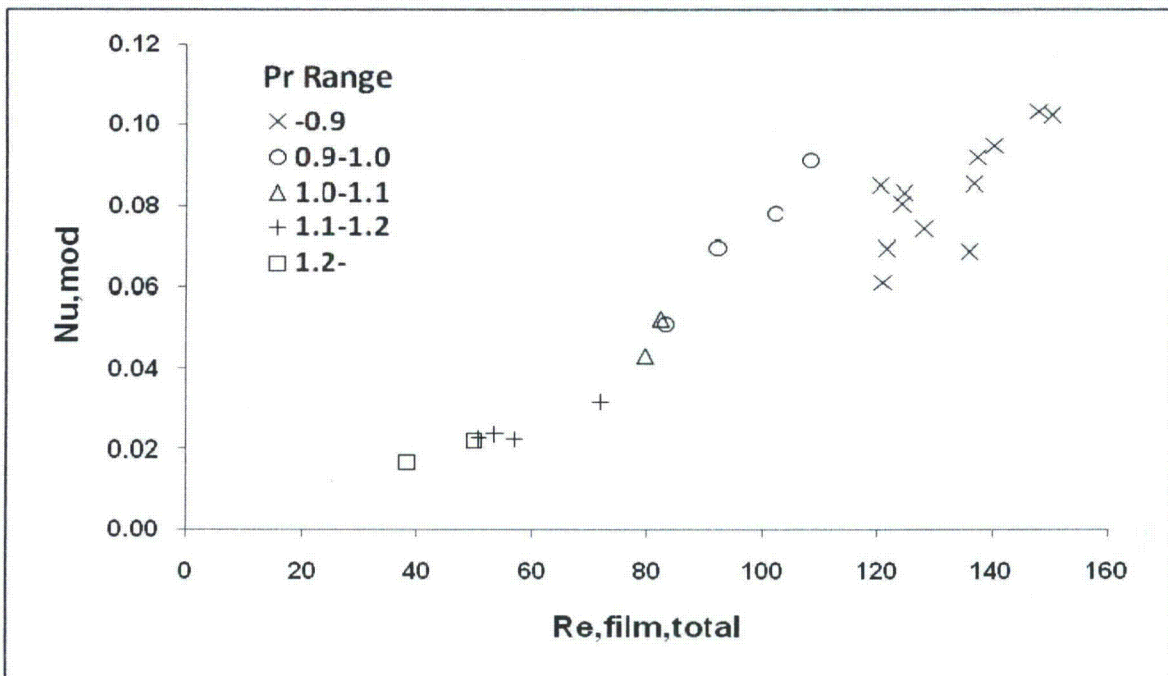


Figure 4.4 Modified Nusselt Number for U-tube Condensation (Re_{film} and Pr_{film})

Figures 4.5 and 4.6 show the modified Nusselt number as a function of the interfacial shear stress and the Reynolds number of the inlet steam respectively. $Re_{\text{stm,inlet}}$ is calculated using the inlet steam mass flow rate from FVM-002 and the saturated steam thermodynamic conditions at inlet pressure from PT-004. From these figures, it does not appear that the modified Nusselt number is a direct function of either parameter.

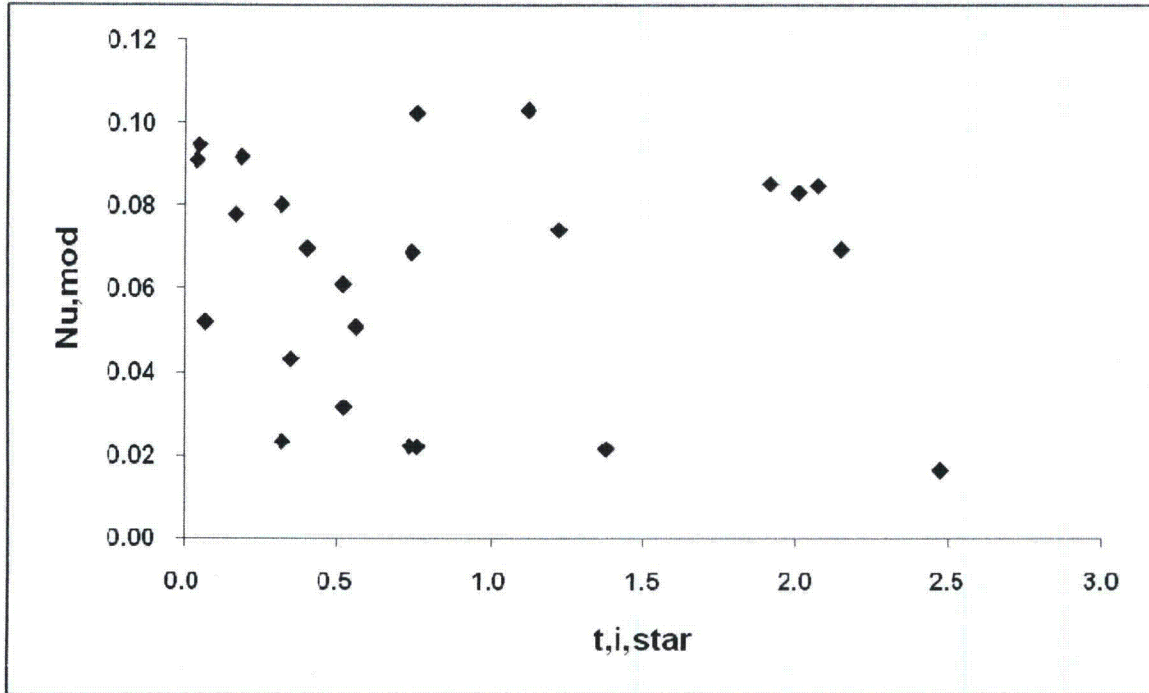


Figure 4.5 Modified Nusselt Number for U-tube Condensation (Interfacial Shear Stress)

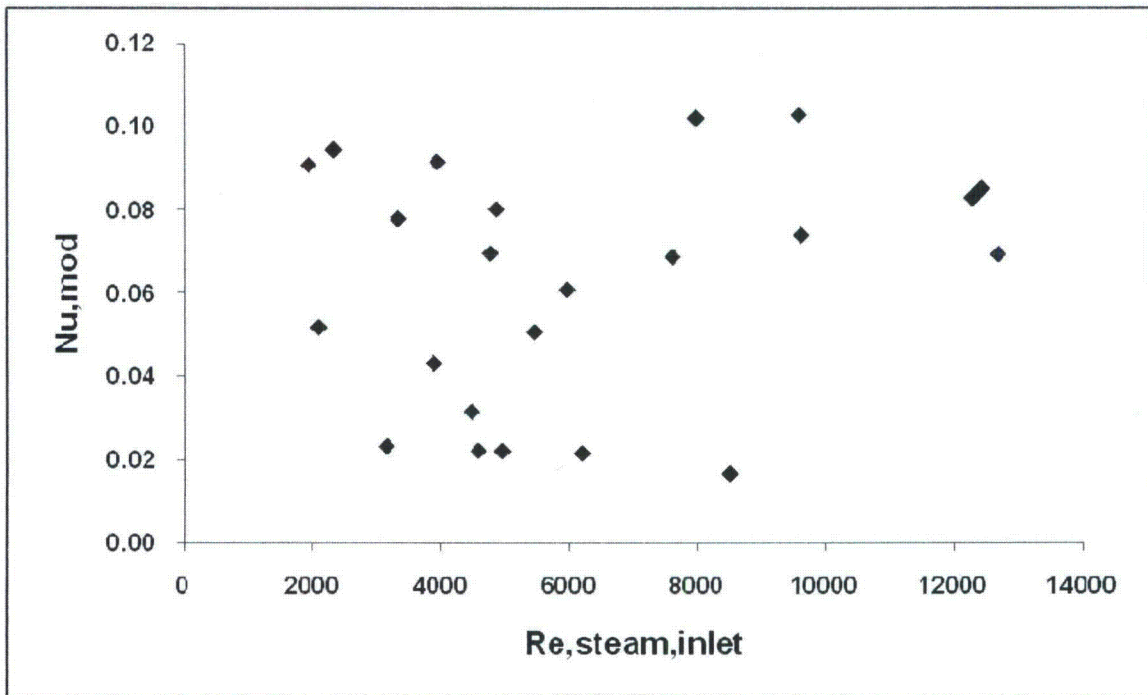


Figure 4.6 Modified Nusselt Number for U-tube Condensation as Function of Inlet Steam Re

4.6 Condensate Carryover Analysis

Also of interest in the current test program are the relative rates of condensation between the hot leg (up) side and the cold leg (down) side of the U-tube. For most of the test steps as noted in Section 4.1, the rates on both sides are very similar. A carryover ratio can be defined to quantify this relative difference between rates as shown in Equation 4.13.

$$C = \frac{Re_{film,down}}{Re_{film,up}} \quad (4.13)$$

Figure 4.7 shows the modified Nusselt number as a function of the carryover ratio. All test steps except for one have a C very close to 1. The modified Nusselt number appears to be independent of the carryover ratio for these test steps. One test step was conducted which showed significantly more condensate on the down side of the steam generator when compared to the condensate on the up side. The carryover ratio for this step is approximately 5 and is shown on Figure 4.7 as well.

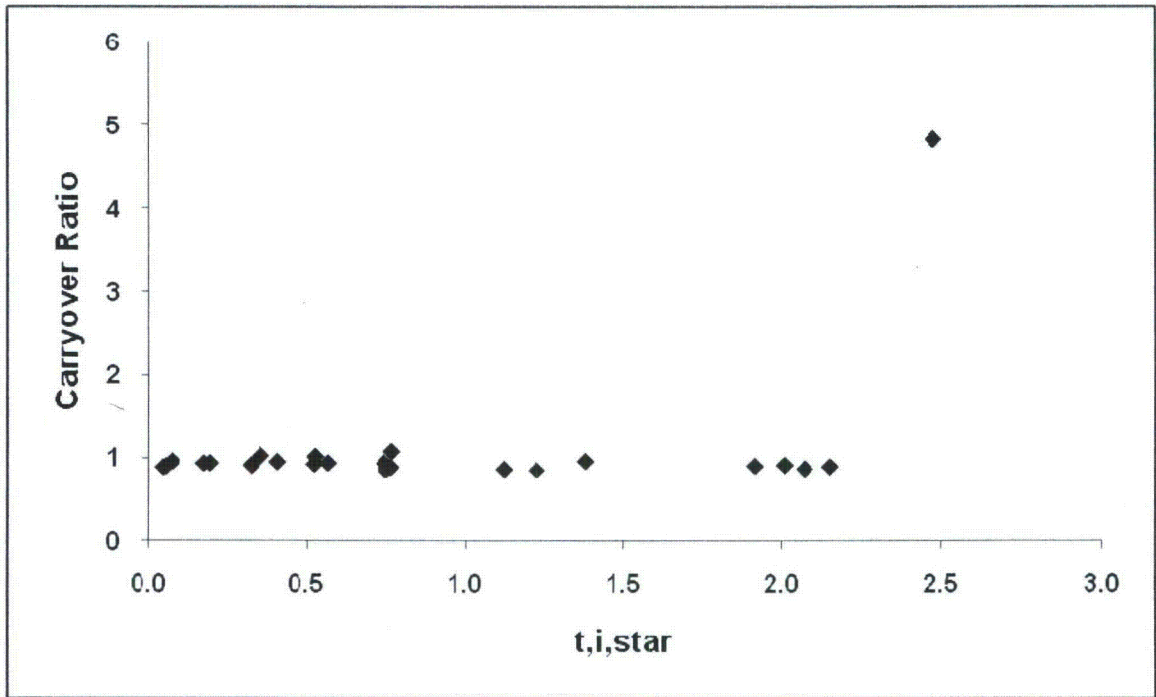


Figure 4.8 Carryover Ratio as a Function of Interfacial Shear Stress.

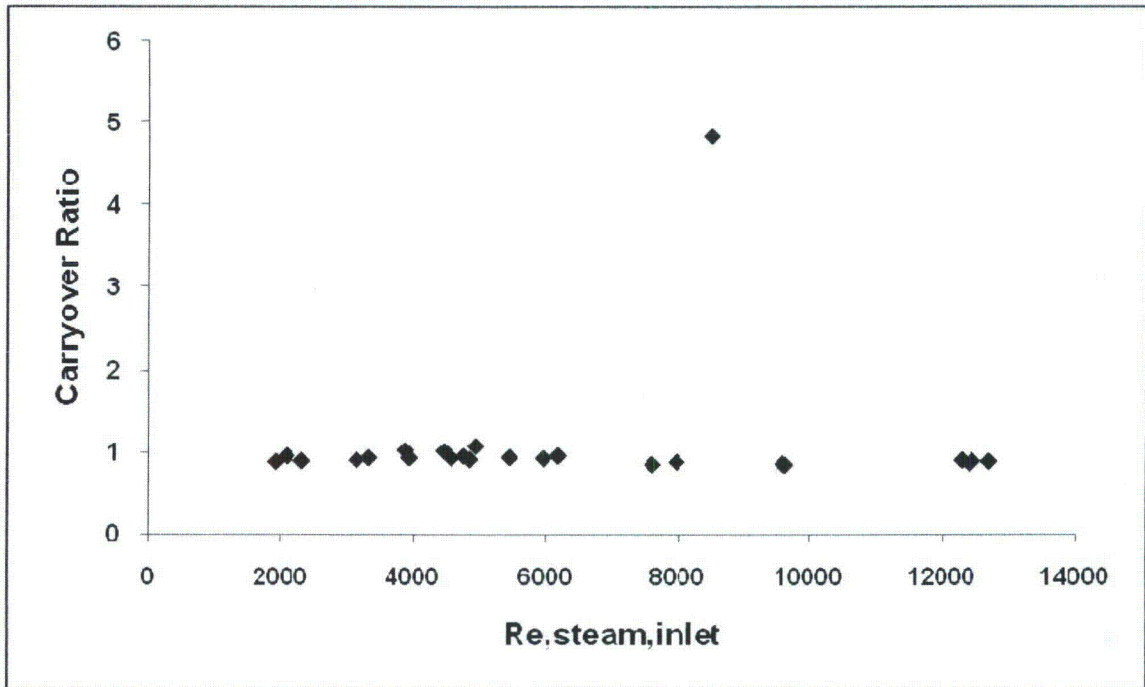


Figure 4.9 Carryover Ratio as a Function of Inlet Re .

4.7 Uncertainty in Nusselt Number Analysis and Comparison with Previous Studies

During the small break loss of coolant accident (LOCA) the liquid inventory in a pressurized water reactor (PWR) can fall to a point where the water level in the system is below the steam generator. Heat generated in the core during the event can lead to steam production which can accumulate and ultimately condense inside the SG tubes. This process of reflux condensation has been examined previously due to its importance in the progression of the small break LOCA transient. Experimental investigations of reflux condensation have included a variety of single/multiple tube arrangement tests (Refs. 15, 16, 17 and 18) as well as integral system tests (Refs. 19 and 20).

The modified Nusselt numbers and heat transfer coefficients calculated in this analysis are determined from flow, pressure and temperature measurements taken during the course of this test program as discussed in Sections 4.4 and 4.5. Table 3.3 shows the uncertainty associated with each of the instruments used in this test facility. The methodology discussed in Section 3.2 (Equations 3.1 and 3.2) has been used to examine the propagation of these instrument uncertainties through the calculation of the heat transfer coefficients and modified Nusselt numbers. There is an additional uncertainty of $\pm 40\%$ associated with the use of the Cooper correlation (Equations 4.10 and 4.11) (Ref. 13). The uncertainty in the Cooper correlation has been combined with the instrument uncertainty as a root mean square. The uncertainty for APEX Nusselt numbers is shown by the uncertainty bands in Figures 4.10 and 4.11. As seen in these figures the uncertainty in the calculation of Nu_{mod} and Nu is substantial. This is primarily a result of the Cooper correlation uncertainty and the individual thermocouple uncertainties, where small temperature differences can result in large differences in calculated heat transfer coefficients. Reduction in uncertainty is limited with the currently installed instrumentation package.

Figures 4.10 and 4.11 show the APEX Nusselt numbers compared against two Nusselt number correlations for condensation with steam flow. The Carpenter and Colburn correlation (Ref. 10) is shown in Equation 4.15 and is plotted against the APEX data in Figure 4.10. In this correlation, Nu_{mod} is a function of film Prandtl number and the non-dimensional interfacial shear stress. In Figure 4.10 the Nu_{mod} for a given Re_{film} is calculated using Equation 4.15 for the respective Pr_{film} and non-dimensional interfacial shear stress. The APEX data is of the same magnitude as the Carpenter—Colburn correlation; however, it must be noted that the APEX data is outside of the range of applicability for the Carpenter—Colburn correlation which is valid for non-dimensional interfacial shear stresses between 5 and 150.

$$Nu_{mod} = 0.065 Pr^{0.5} (\tau_i^*)^{0.5} \quad (4.15)$$

The Akers and Rosson correlation (Ref. 21) is shown in Equation 4.16 and is also plotted against the APEX data in Figure 4.11. In this correlation, Nu is a function of film Prandtl number, steam Reynolds number, film Reynolds number, viscosity ratio, and density ratio. Nu uses the tube diameter as the characteristic dimension as opposed to the condensation characteristic length used in Equation 4.1 for Nu_{mod} . In Figure 4.11 the Nu for a given Re_{film} is calculated using Equation 4.16 using the respective non-dimensional numbers for the subject test step. Again the APEX data is of the same magnitude as the Akers—Rosson correlation.

$$Nu = 0.026 Pr_{film}^{0.33} \left[Re_{stm} \left(\frac{\mu_g}{\mu_f} \right) \left(\frac{\rho_f}{\rho_g} \right)^{0.5} + Re_{film} \right]^{0.8} \quad (4.16)$$

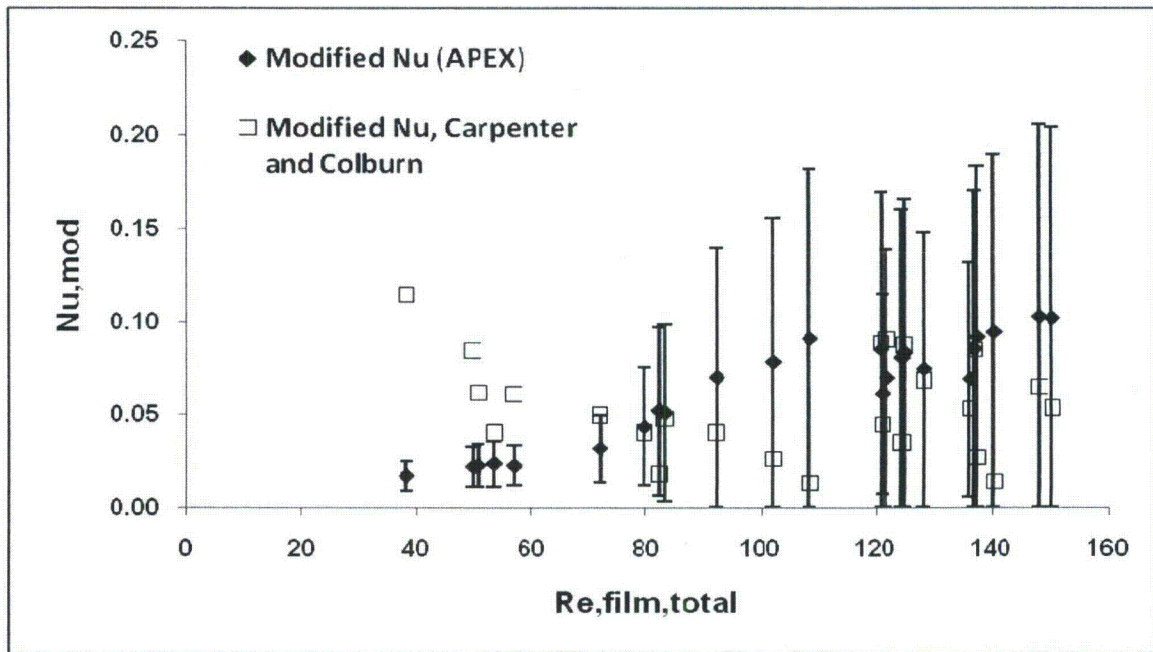


Figure 4.10 Modified Nusselt Number (APEX vs. Carpenter and Colburn Correlation)

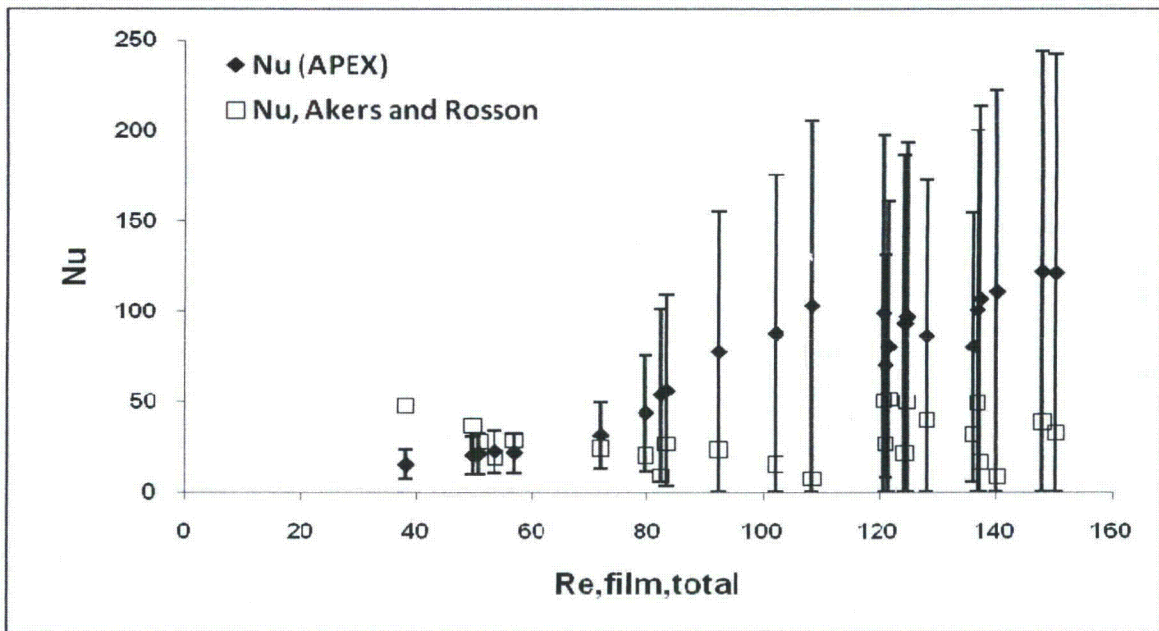


Figure 4.11 Nusselt Number (APEX vs. Akers and Rosson Correlation)

Of the studies mentioned in the beginning of this section the work by Lee et al. (Ref. 15) was conducted in a geometry similar to the one presented here. Although conducted in an integral test facility, the modifications that were completed allowed the APEX facility SG#1 to be used as a separate effects test facility—a multi-tube U-tube steam condensation experiment. Lee's experiment was conducted in a single U-tube with a similar geometry and inlet mass flow rate per tube basis. The major differences between this work and the work of Lee et al. is that Lee's experiments were conducted at a significantly lower pressure (0.1 MPa) and the shell side of the tube was subcooled. Lee's condensation experiments resulted in condensation heat transfer coefficients that were generally higher than those experienced during the APEX test program—approximately $7500 \text{ W/m}^2\text{-K}$ for Re_{film} above 75 versus the APEX data listed in Table 4.2. Also of note is that the heat transfer coefficients versus Re_{film} transitioned from falling to flat at around a Re_{film} of 75 as opposed to a transition in heat transfer coefficient versus Re_{film} from flat to increasing at around $Re_{film}=60$ in these APEX tests. As discussed in Section 4.5 there may be some effect of the Prandtl number and/or pressure on the condensation heat transfer coefficients which may account for the differences between this APEX work and Lee's work.

4.8 Effect of Non-Condensable Gas on Condensation

Two tests (-07 and -08) were completed to examine the effect of non-condensable gas on the condensation in the SG U-tubes. One test step was completed without non-condensable gas and the next test step was completed with non-condensable gas present. For test -07 the non-condensable mass fraction was $2.3\% \pm 0.3\%$ and for test -08 the non-condensable mass fraction was $11.4\% \pm 0.3\%$. Both tests were conducted at the same conditions with the exception of the presence of non-condensable gas.

Table 4.3 summarizes the comparison between the test with non-condensable gas and parallel tests without the gas present. The condensation rate degradation (d) is characterized as the ratio of film Reynolds numbers for the steam only and the steam-nitrogen tests as shown in Equation 4.17.

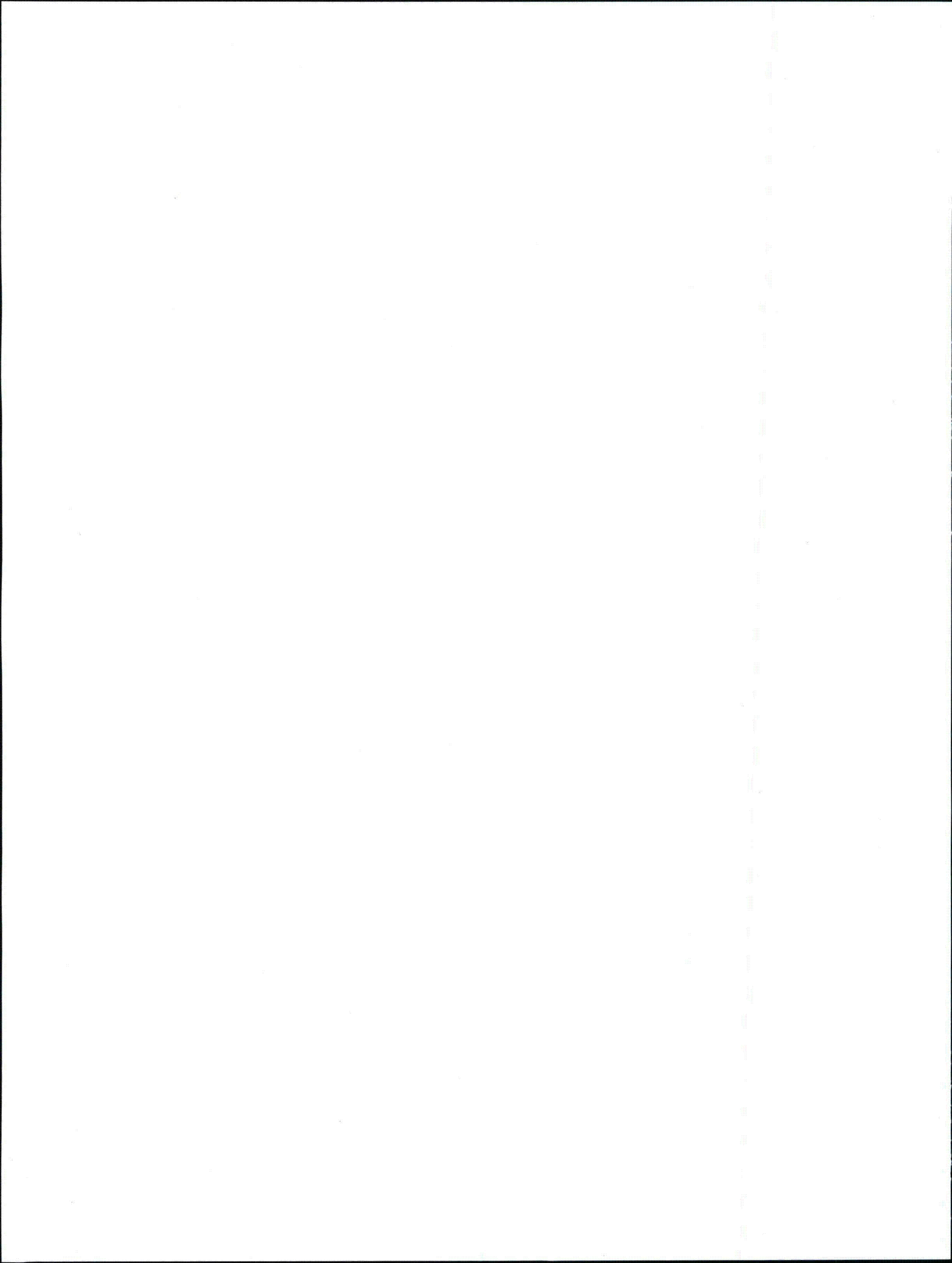
$$d = \frac{Re_{film,nc}}{Re_{film}} \quad (4.17)$$

There is approximately a 4% degradation in the condensation rate for the nominal 2.5% nitrogen test and a 6% degradation for the nominal 10% nitrogen test. The greatest effect between the steam and the steam-nitrogen tests is seen in the area of the U-tubes where the condensation occurs. For the nominal 2.5% nitrogen tests the condensation rate is shifted somewhat to the up side of the SG tubes. For the nominal 10% nitrogen tests this shift is significant in which the condensation rate on the up side of the tubes is nearly twice the rate seen in the down side of the SG tubes. As the steam—nitrogen gas mixture flows through the U-tubes, the condensation process will remove steam from the vapor/gas flow. As the vapor/gas mixture exits the U-tubes the mass fraction of nitrogen will thus be increased on the order of 2-3%. The larger average non-condensable mass fraction on the down side of the U-tubes when compared to the up side of the tubes results in a decrease in the steam partial pressure and thus a decrease in the steam saturation temperature which in turn hinders the condensation process. This results in a more pronounced degradation in condensation rate in the down side of the U-tubes when compared to the up side of the tubes.

Condensation rate degradation shown in Equation 4.17 is used in lieu of a comparison of calculated heat transfer coefficients inside the tubes due to uncertainty considerations. Overall and tube heat transfer coefficients are shown in Table 4.2 for tests -07 and -08 for both steps with and without non-condensable gas present. Due to instrument and correlation uncertainty, the heat transfer coefficient uncertainty for tests -07 and -08 in Table 4.2 is greater than 70% and thus these are unreliable as indicators for heat transfer degradation.

Test Step	Re_{film}	d [±0.010]	C [±0.02]
7-2	120.7	0.958	0.87
7-3	115.7		0.79
8-2	124.7	0.942	0.91
8-3	117.5		0.52

Many of the correlations developed for condensation in the presence of non-condensable gas have been developed for geometries and conditions very different from that experienced in the APEX facility SG tubes. One such general framework for condensation in the presence of non-condensable gas has been developed by Minkowycz and Sparrow (Refs. 22 and 23). Under this framework for air the respective condensation rate degradation due to a 0.025 and 0.10 mass fraction of non-condensable gas would be approximately 0.9 and 0.7 respectively. This is very different from the condensation rate degradation experienced during tests -07 and -08. However these APEX tests have been conducted at higher pressures, higher temperatures and smaller temperature differences across the tubes than assumed in the Minkowycz and Sparrow framework. These could account for the differences between the condensation rate degradation in APEX and Minkowycz—Sparrow.



5 SUMMARY AND CONCLUSIONS

From 2005 through 2007, the OSU APEX test facility was used to conduct a series of reflux condensation tests in its steam generators. The high fidelity experimental data will provide a basis to assess TRACE steam generator modeling techniques and to assist in development of improved models for condensation and steam generator thermal-hydraulics.

Significant modifications to the test facility were completed in order to conduct the subject test program. The principal modification was the isolation of SG #1 from the primary loop piping. In this manner, SG #2 could be used to produce dry steam at pressure to feed into SG #1 in order to examine the condensation of the steam in the SG tubes.

Eight separate SG condensation tests were conducted as part of this test program. For tests -01 through -06, the nominal test pressure was varied between each test. These tests were conducted without the presence of non-condensable gas. Tests -07 and -08 were conducted at the same test pressure as one another; however the percentage of non-condensable gas was varied between the two tests. For the test program, tube side inlet steam pressure varied between 0.37 MPa to 2.19 MPa.

Based on the SG condensation experiments completed at the APEX test facility, the following conclusions can be made:

1. During these tests, with the exception on test 6-5, the condensation rates experienced in the CL and HL sides of the SG tubes are approximately equal with no distinctive pattern emerging.
2. The condensate flow for the test steps above a Re_{film} of approximately 60, exhibited a relationship between the modified Nusselt number and the film Reynolds number that is indicative of turbulent flow in the condensate film. This represented the majority of the test steps performed. The condensate flow for the test steps below a Re_{film} of approximately 60, exhibited a relationship indicative of the transition between laminar-wavy and turbulent flow. Purely laminar or laminar-wavy condensate film flow was not indicated in any of the test steps.
3. The film Prandtl number may directly impact the U-tube SG condensation heat transfer independent of the film Reynolds number. It appears that tests with the smallest film Prandtl number may have a flatter slope when investigating the correlation between Nu_{mod} and Re_{film} than tests with larger film Prandtl numbers. However, to make general conclusion on this point a wider range of film Reynolds numbers should be tested for both small and large film Prandtl number tests.
4. A carryover ratio, quantifying the difference in film condensation between the up and down side of the U-tubes, has been defined. The condensation heat transfer appears to be independent of the carryover ratio. The carryover ratio remained constant at one (indicating equal condensation on up and down sides) for all test steps herein except for one. The test step showing the largest carryover ratio exhibited the greatest non-dimensional interfacial shear stress of all the test steps. Further testing is needed to make more general conclusions concerning the influence of interfacial shear stress on the carryover ratio.
5. The carryover ratio and condensation heat transfer appear to be independent of the inlet steam Reynolds number within the range of steam Reynolds numbers (2000-12000) investigated.

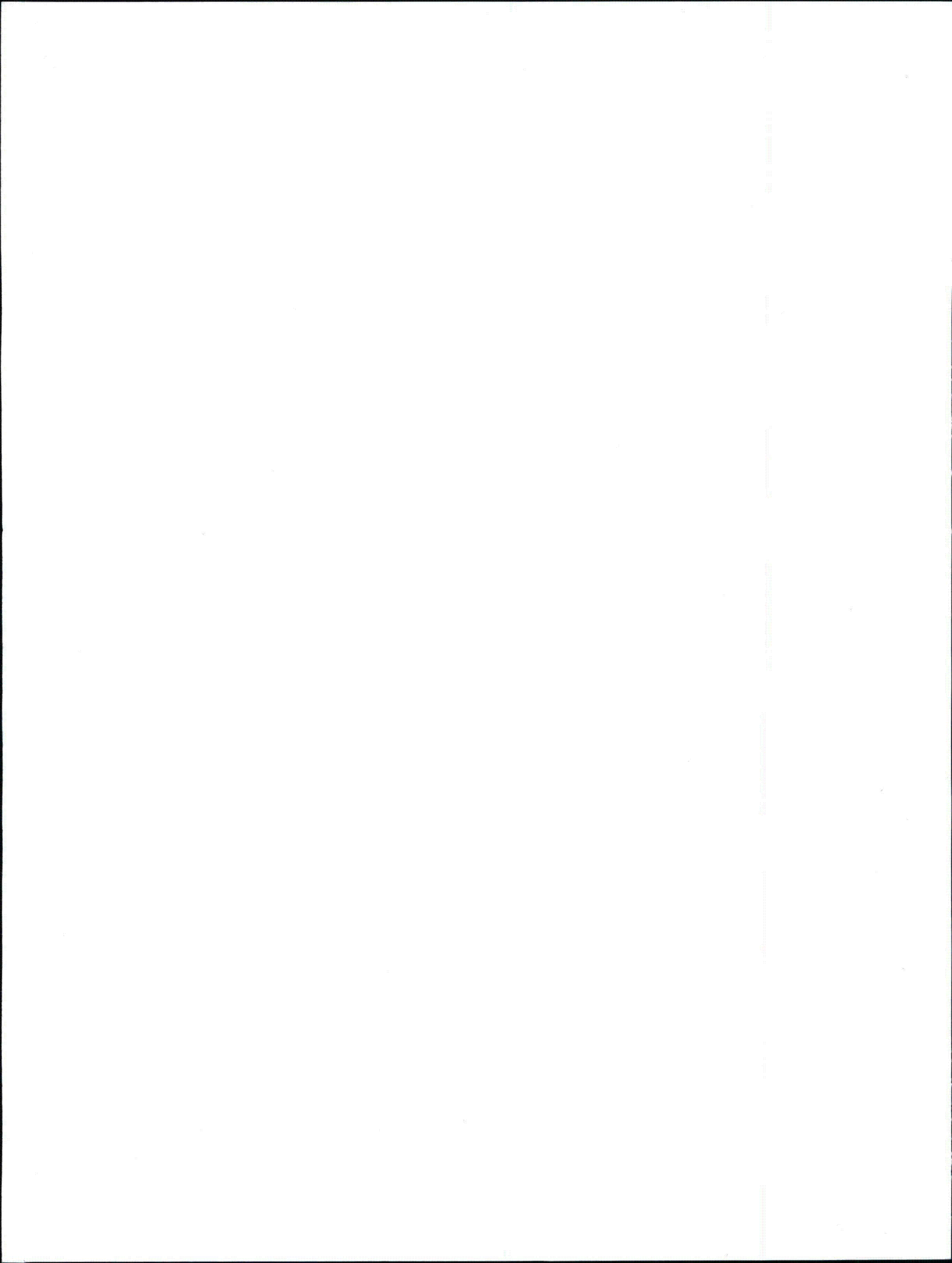
6. Two tests were completed that compared condensation in a steam only environment to condensation with the presence of nitrogen. Test -07 used a nominal nitrogen mass fraction of 2.5 % while test -08 used a nominal nitrogen mass fraction of 10.0%. Both non-condensable gas tests exhibited a small degradation in condensate heat transfer over their steam only counterparts. Of note is the fact that the presence of non-condensable gas induced more condensation on the up side of the U-tubes and less condensation on the down side of the U-tubes. This tendency became greater as the non-condensable concentration increased.

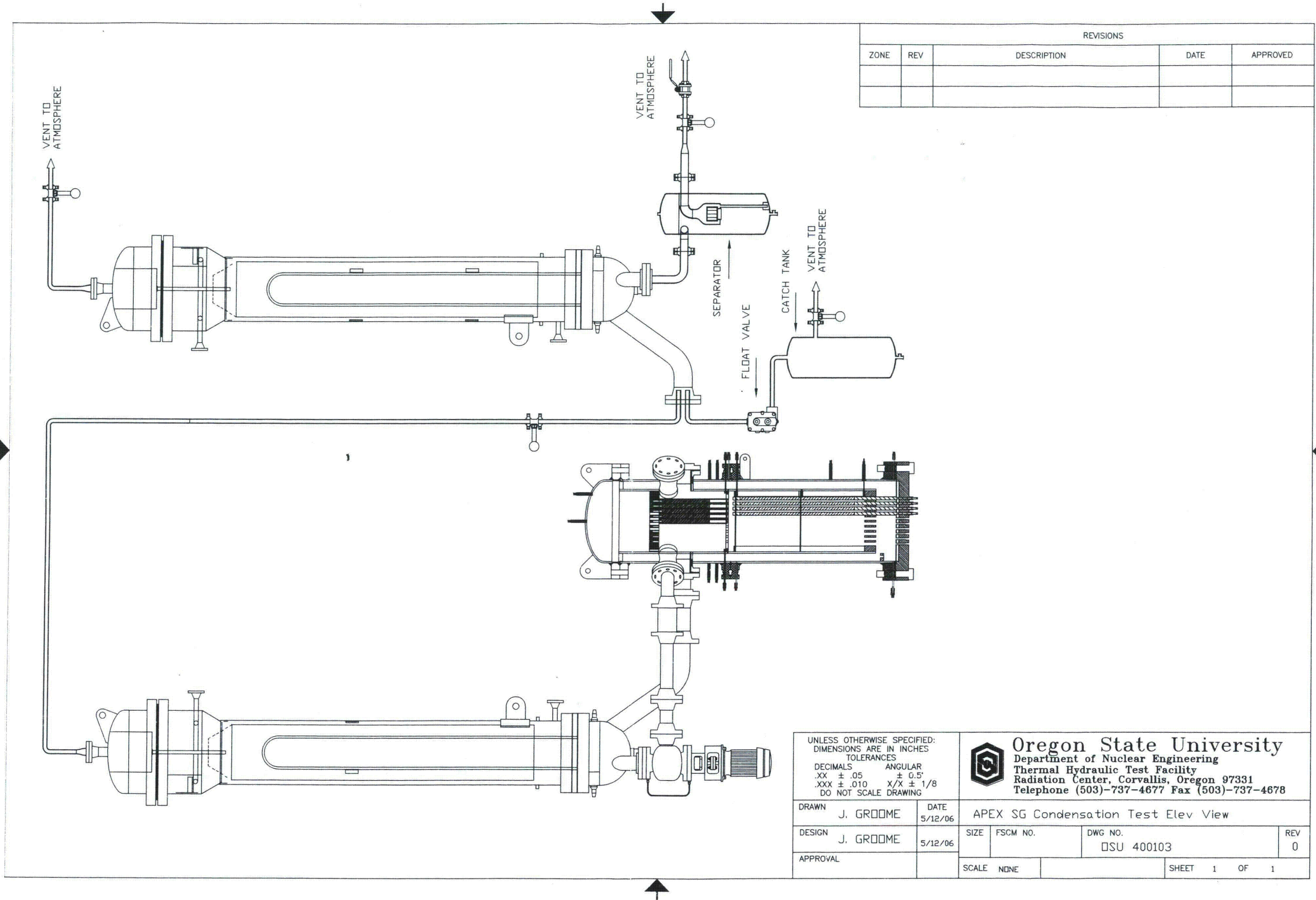
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Appendix A: As Built Drawings





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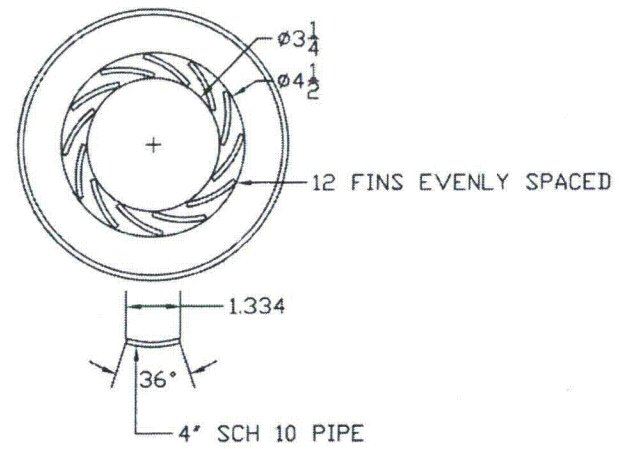
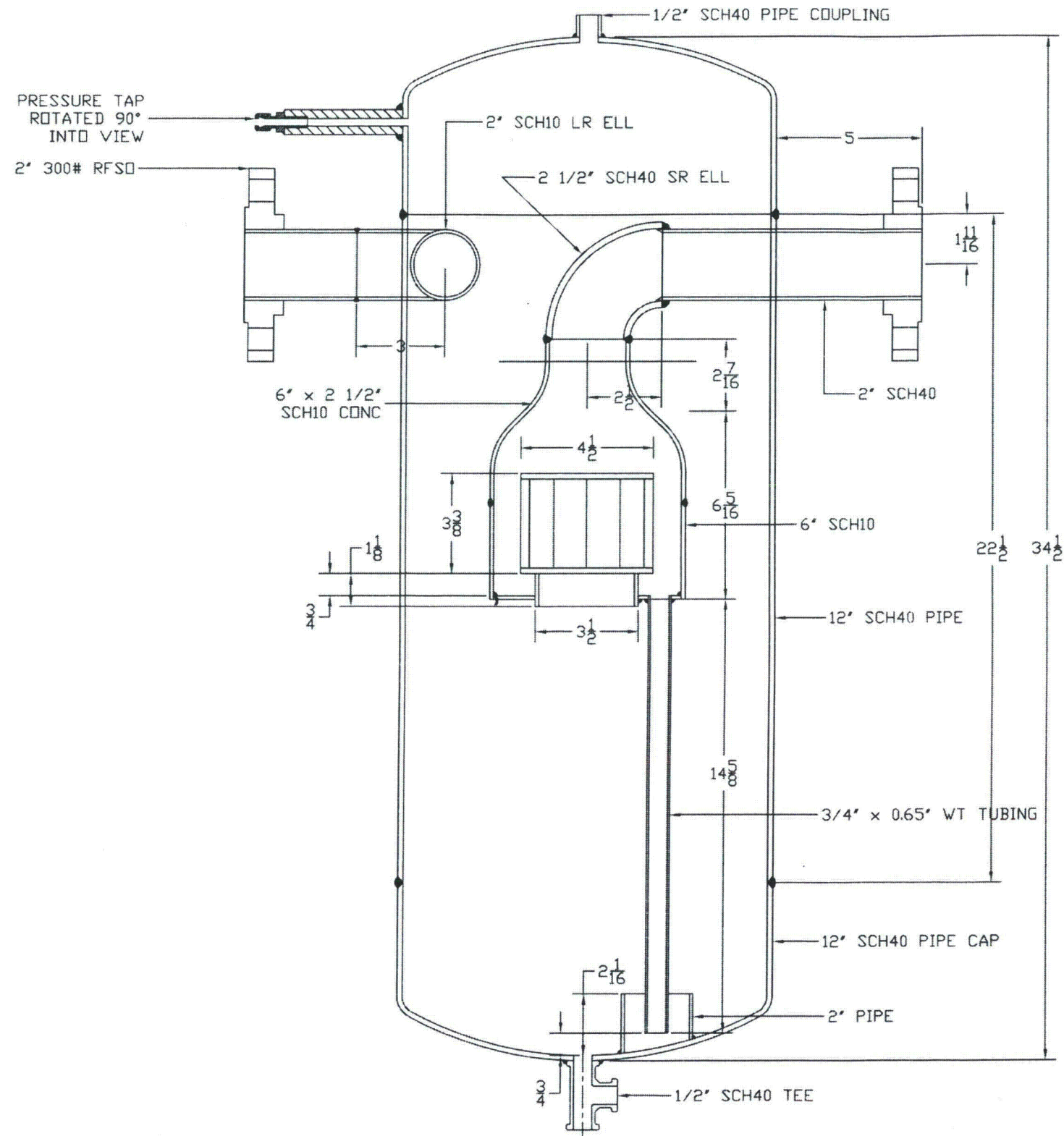
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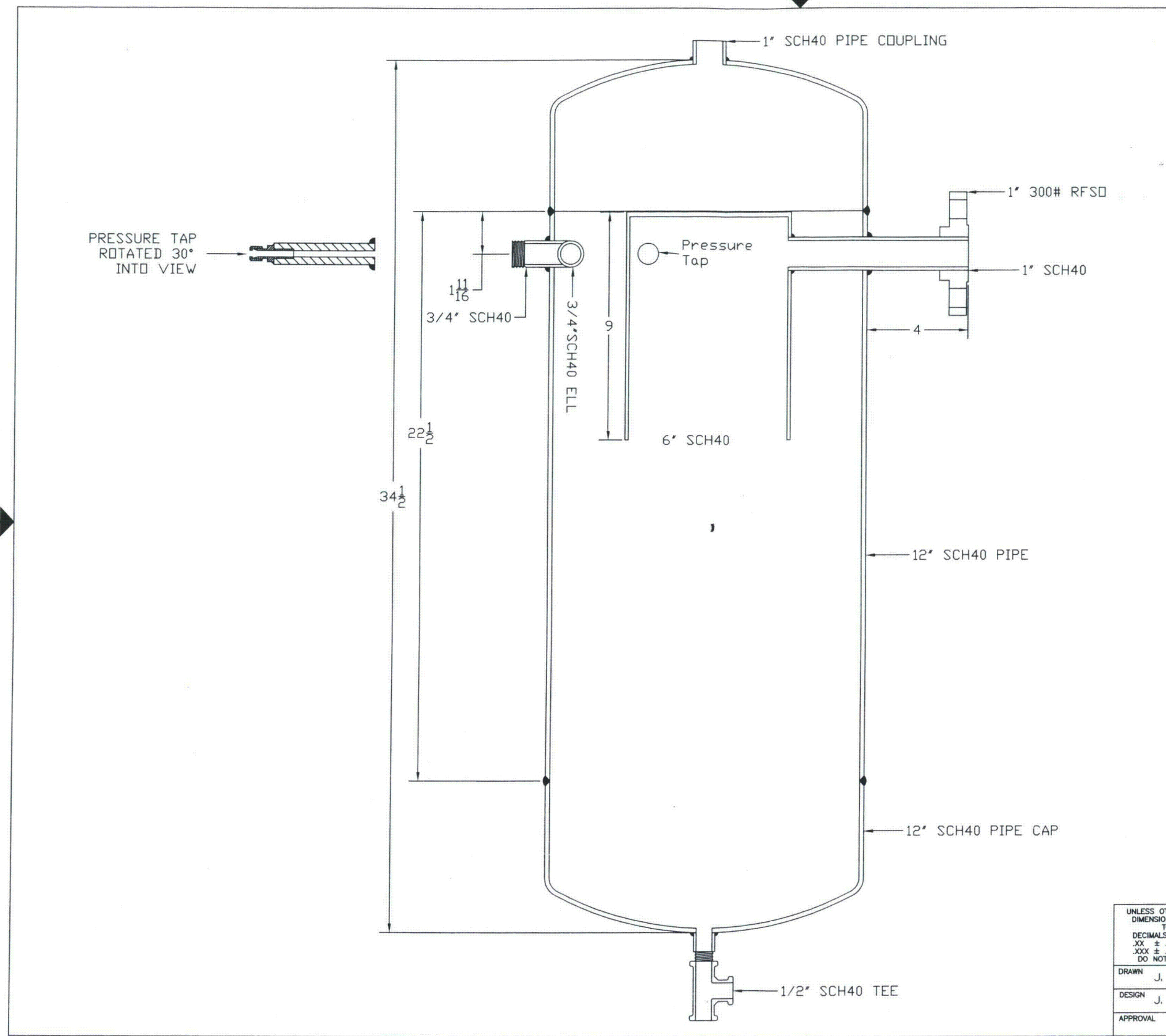
Oregon State University
Department of Nuclear Engineering
Thermal Hydraulic Test Facility
Radiation Center, Corvallis, Oregon 97331
Telephone (503)-737-4677 Fax (503)-737-4678

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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES		 Oregon State University Department of Nuclear Engineering Thermal Hydraulic Test Facility Radiation Center, Corvallis, Oregon 97331 Telephone (541)-737-4677 Fax (541)-737-4678	
DECIMALS	ANGULAR	DRAWN J. Groome DATE 7/26/03 DESIGN J. Groome 7/26/03 APPROVAL	
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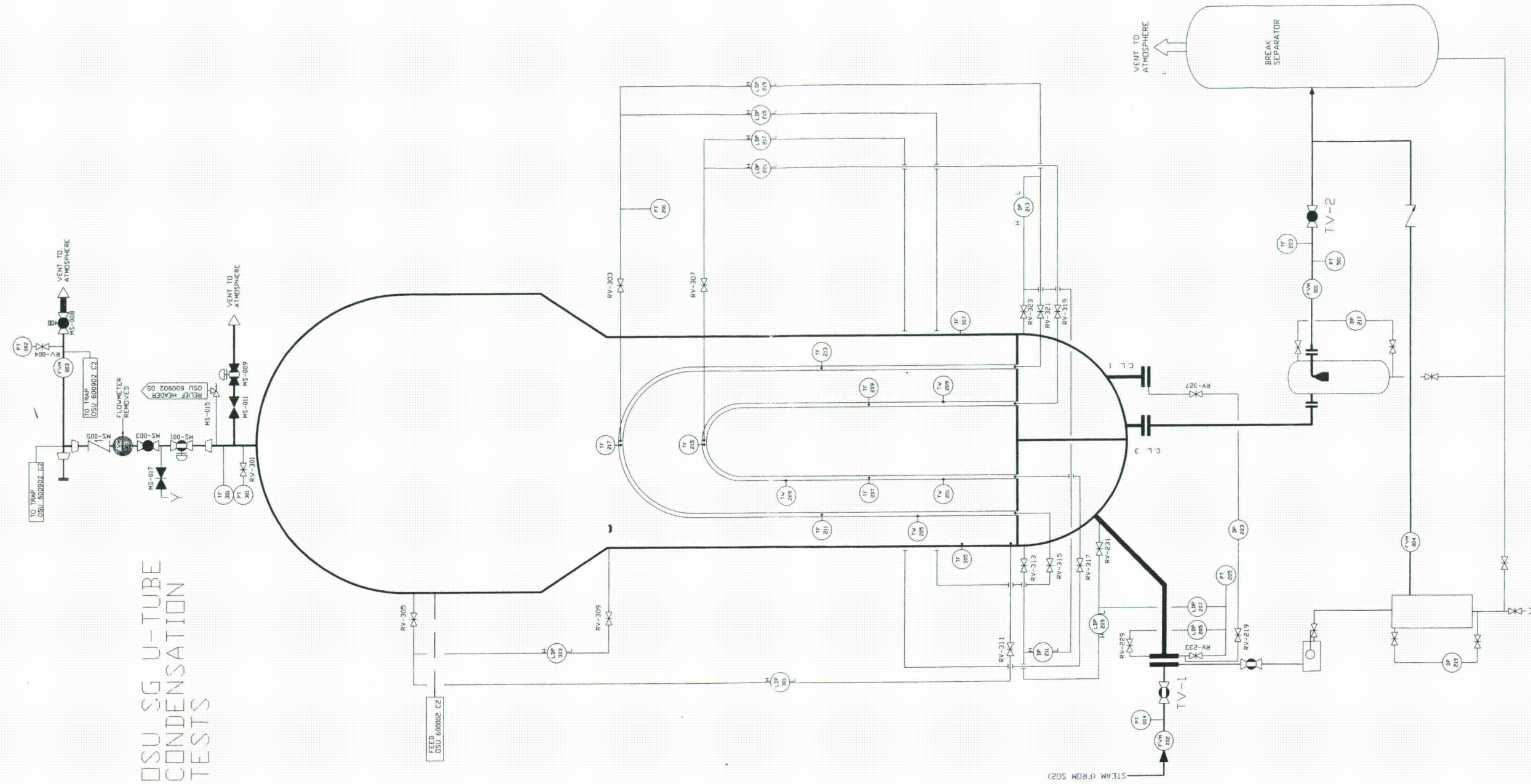
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DRAWN	J. Groome	DATE	7/26/05	SG Condensation Catch Tank	
DESIGN	J. Groome	7/26/05	SIZE	FSCM NO.	DWG NO. DSU 400305
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DSU SG U-TUBE
CONDENSATION
TESTS

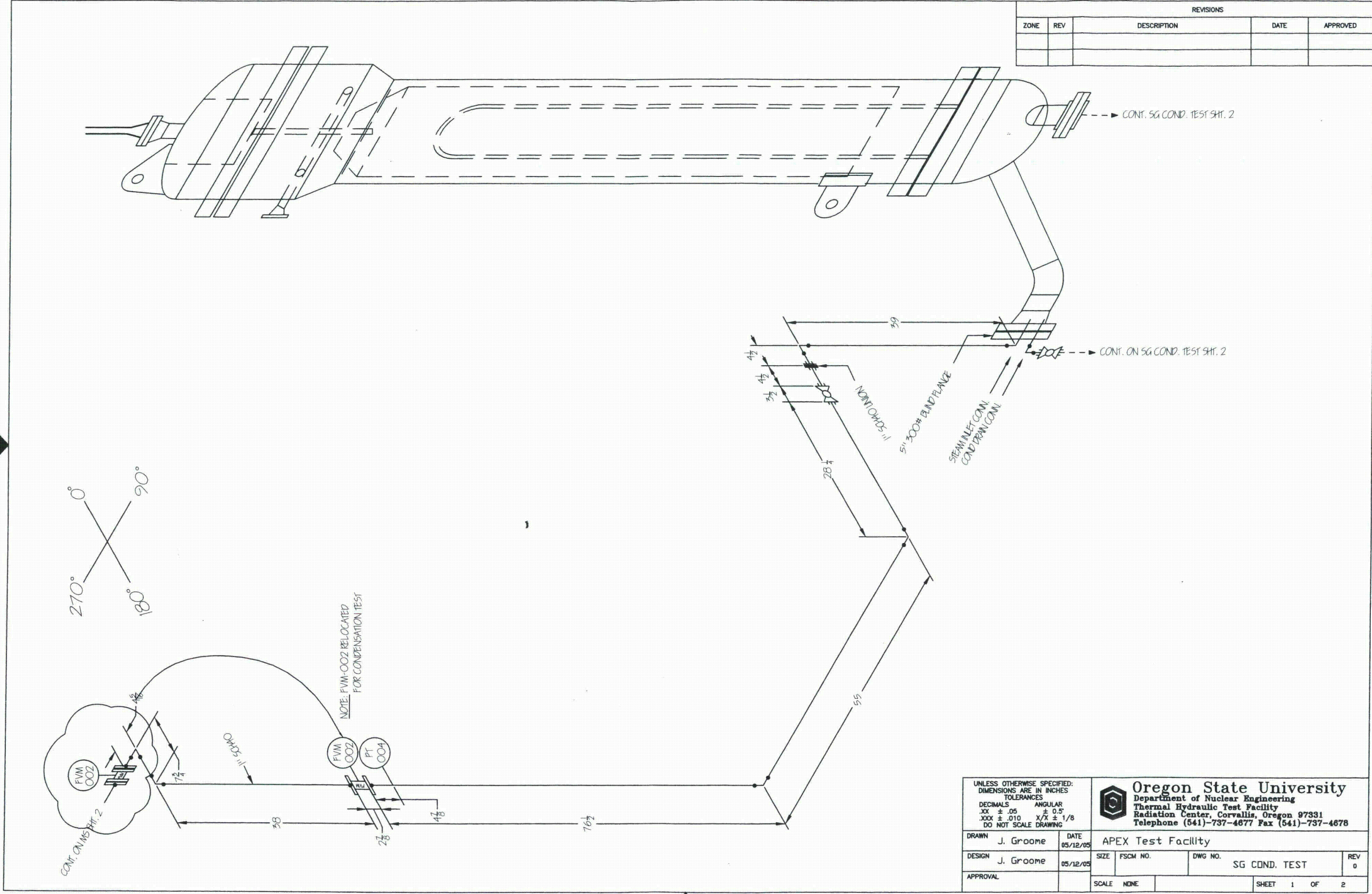


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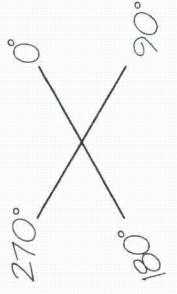
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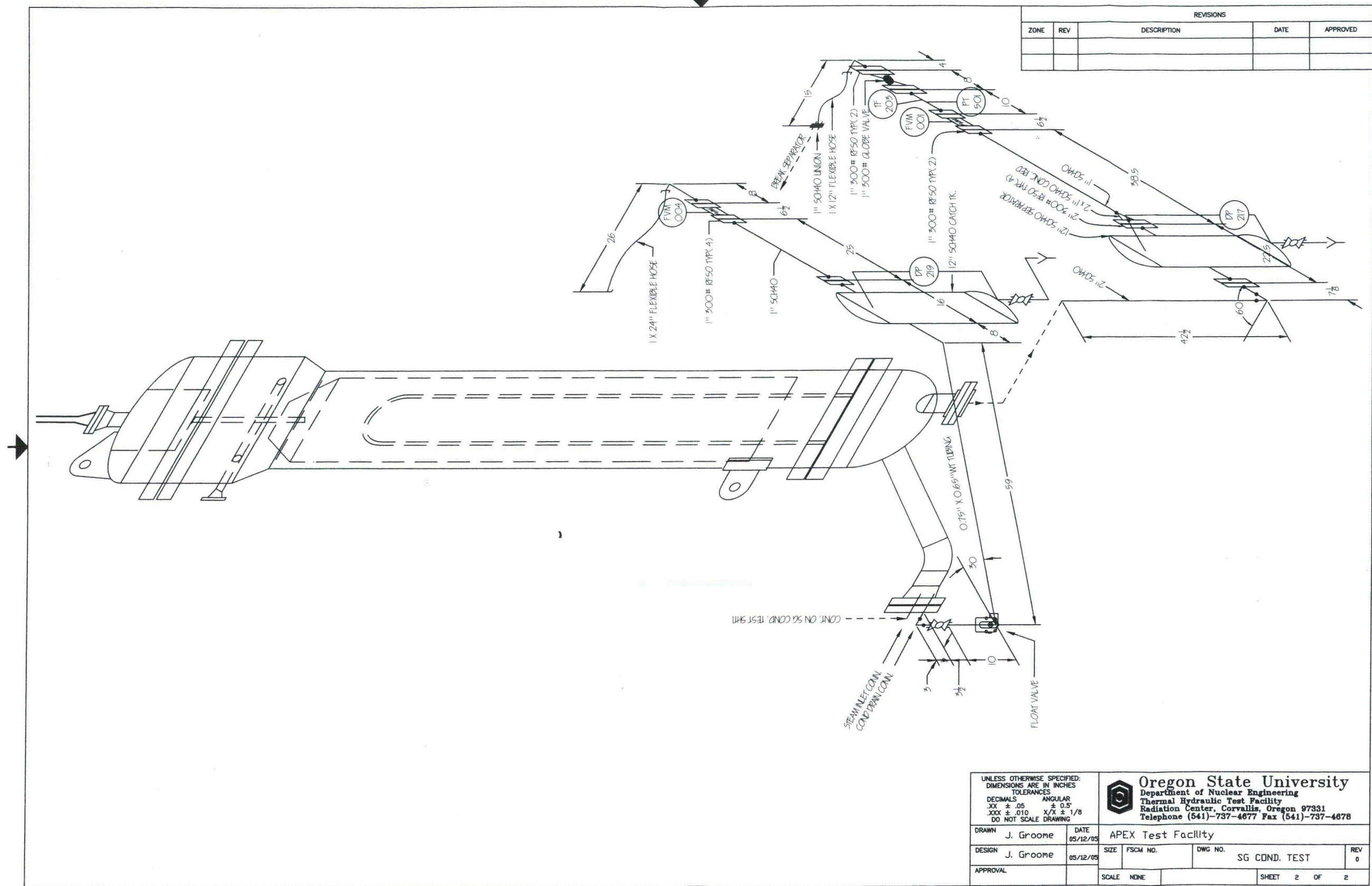


NOTE: FVM-002 RELOCATED FOR CONDENSATION TEST

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REVISIONS				
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Appendix B: Test Reports

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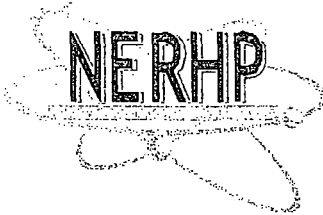
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**ADVANCED THERMAL HYDRAULIC
RESEARCH LABORATORY**

**STEAM GENERATOR U-TUBE CONDENSATION
TEST @ 200 PSIG**

NRC-COND-01

Revision 0





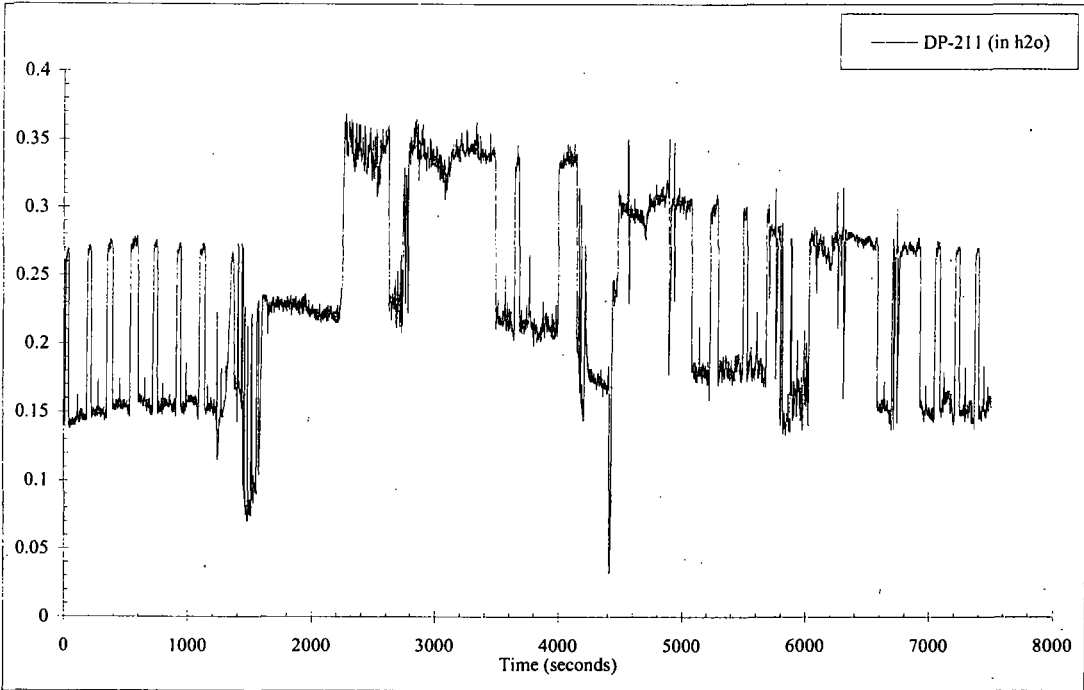
John Groome, Originator
Facility Operations Manager
Research Assistant

11/3/05
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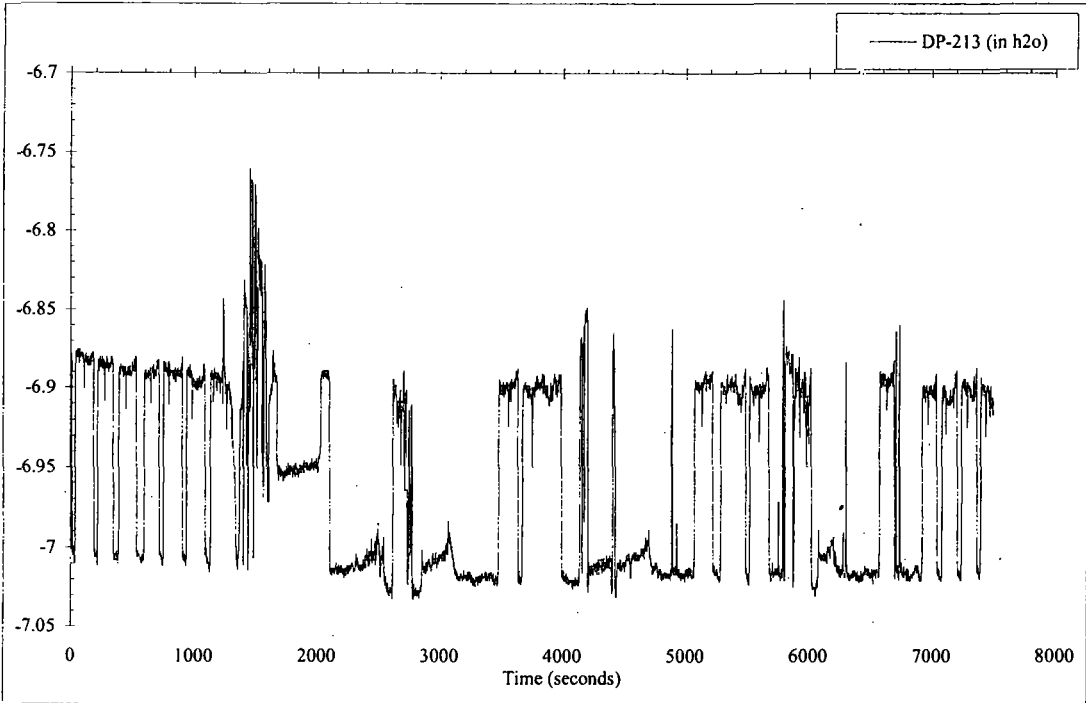


Brian Woods, Approval
Program Manager
Assistant Professor

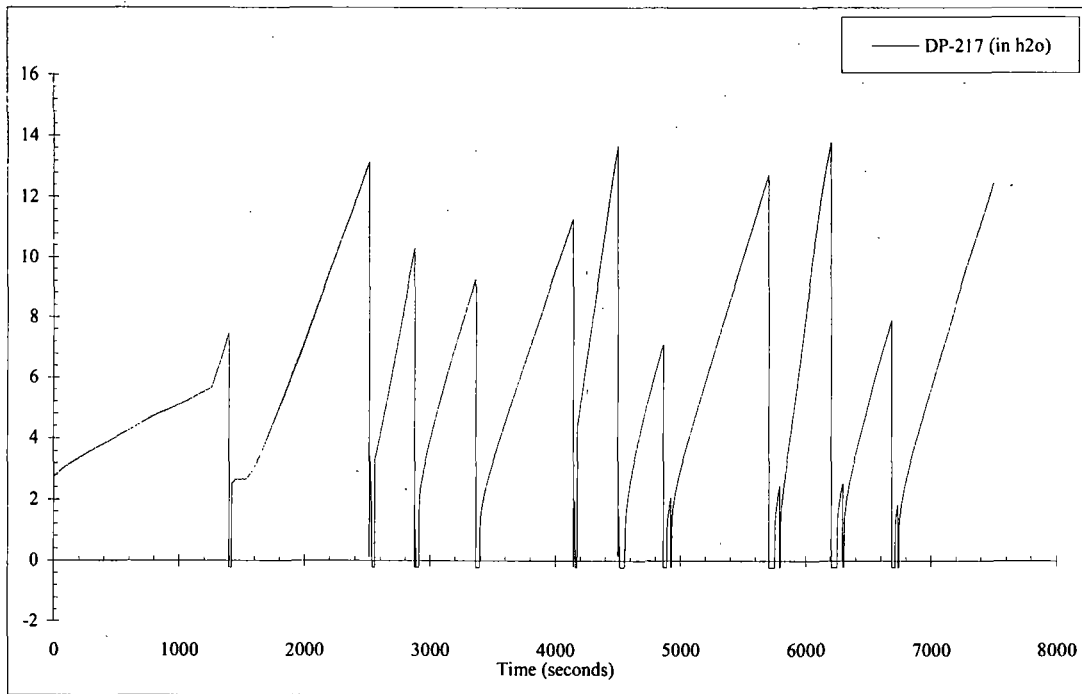
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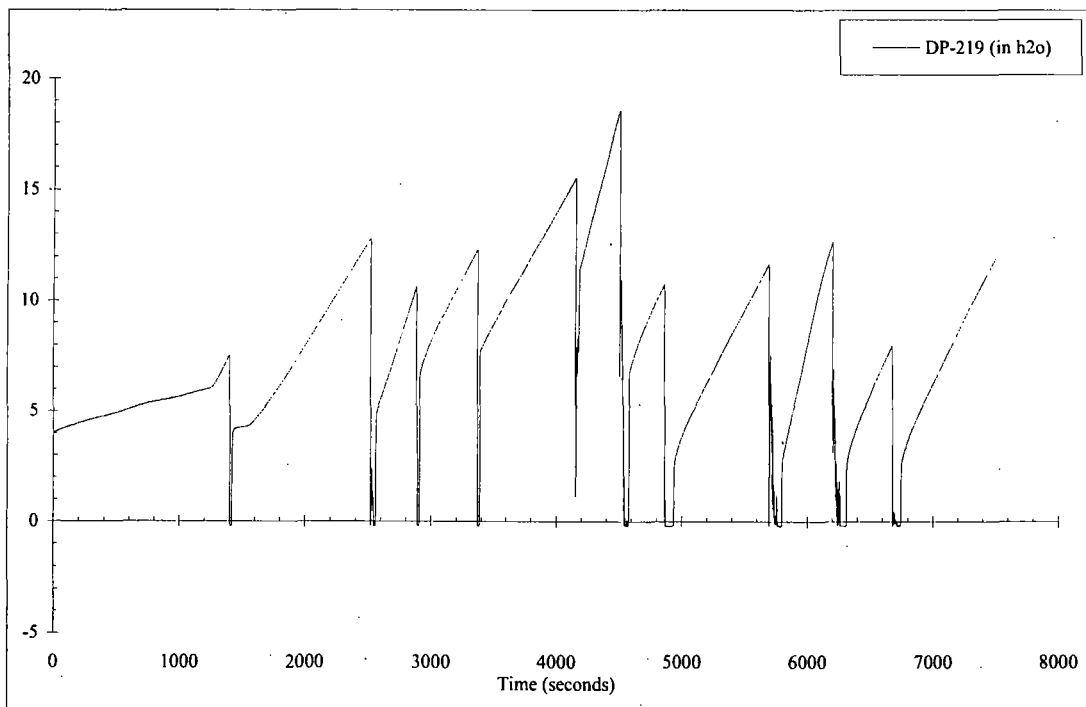
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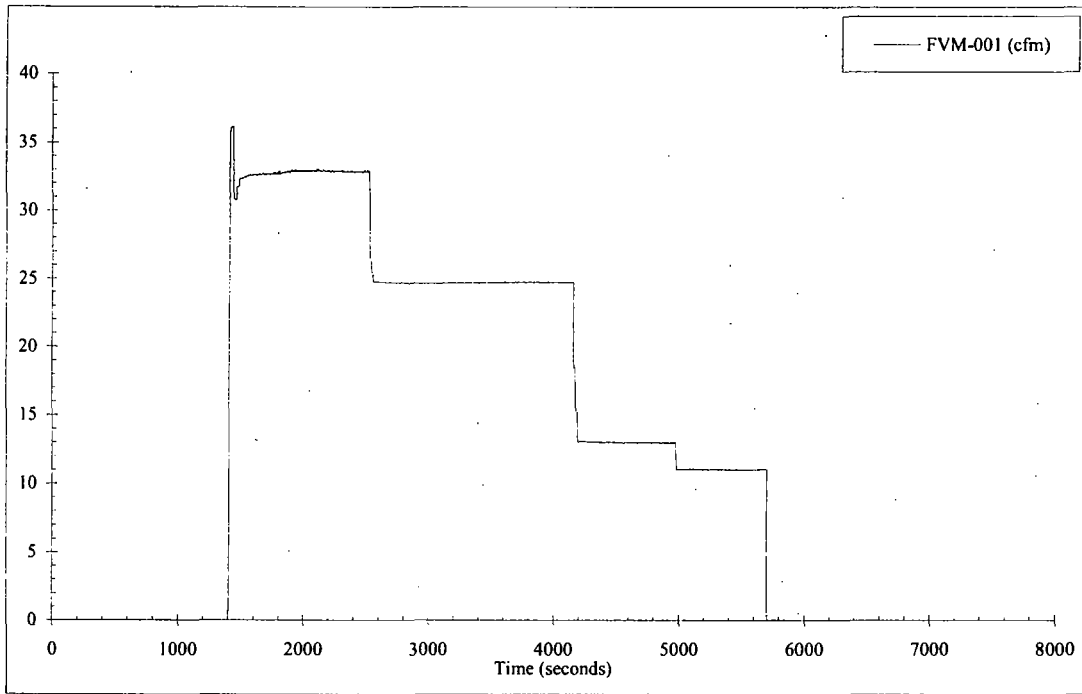
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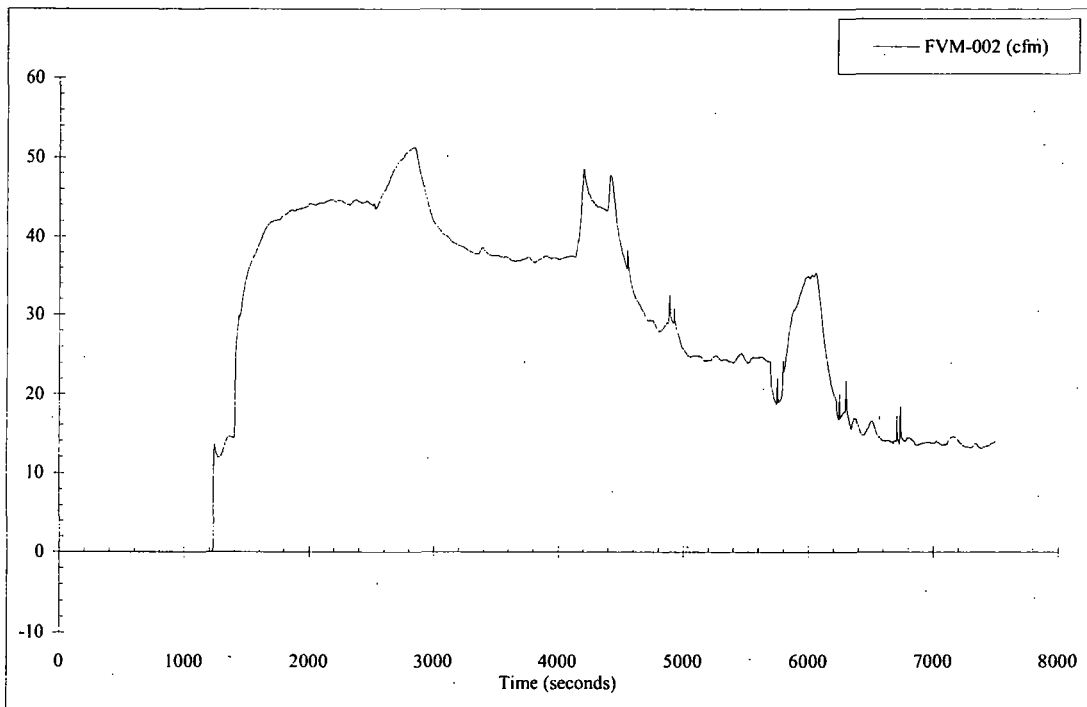
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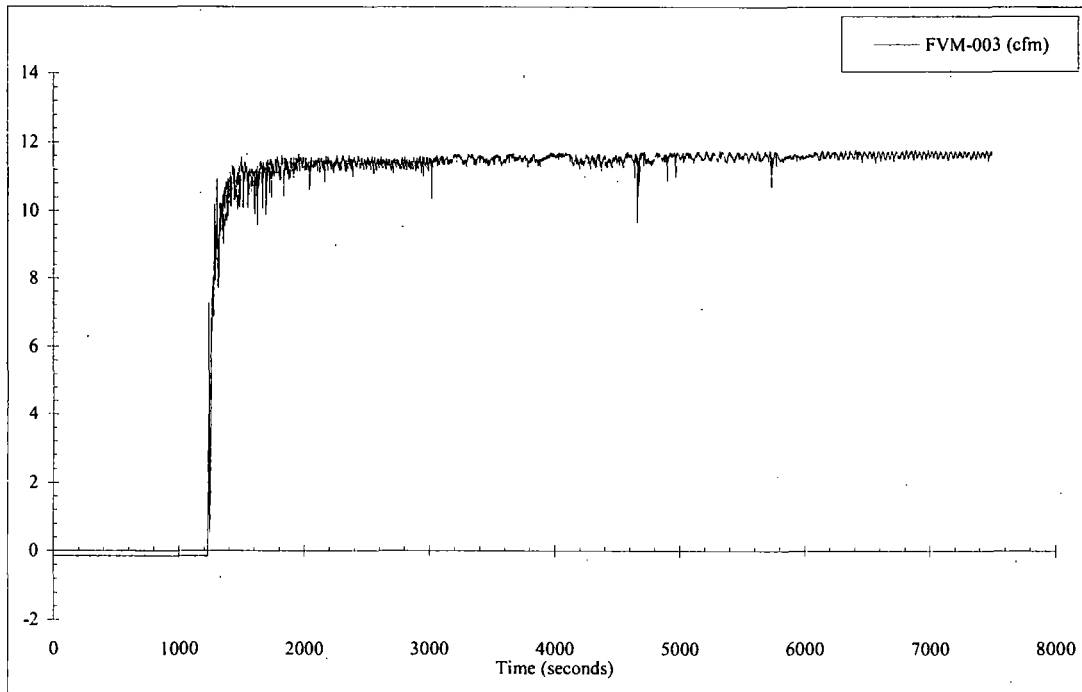
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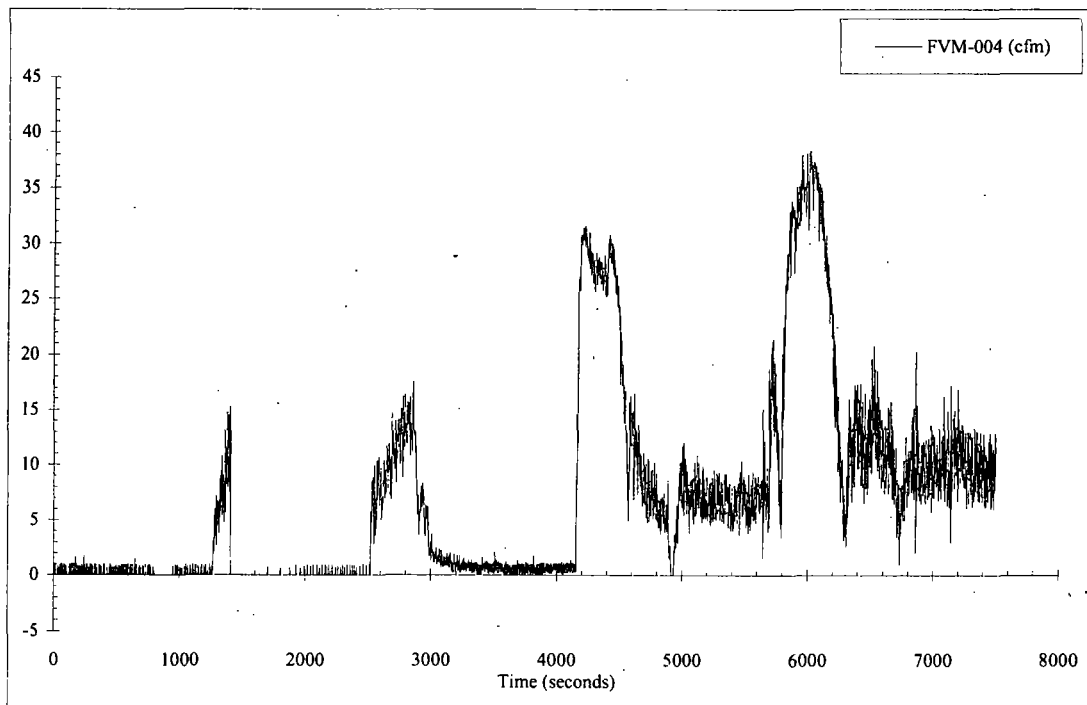
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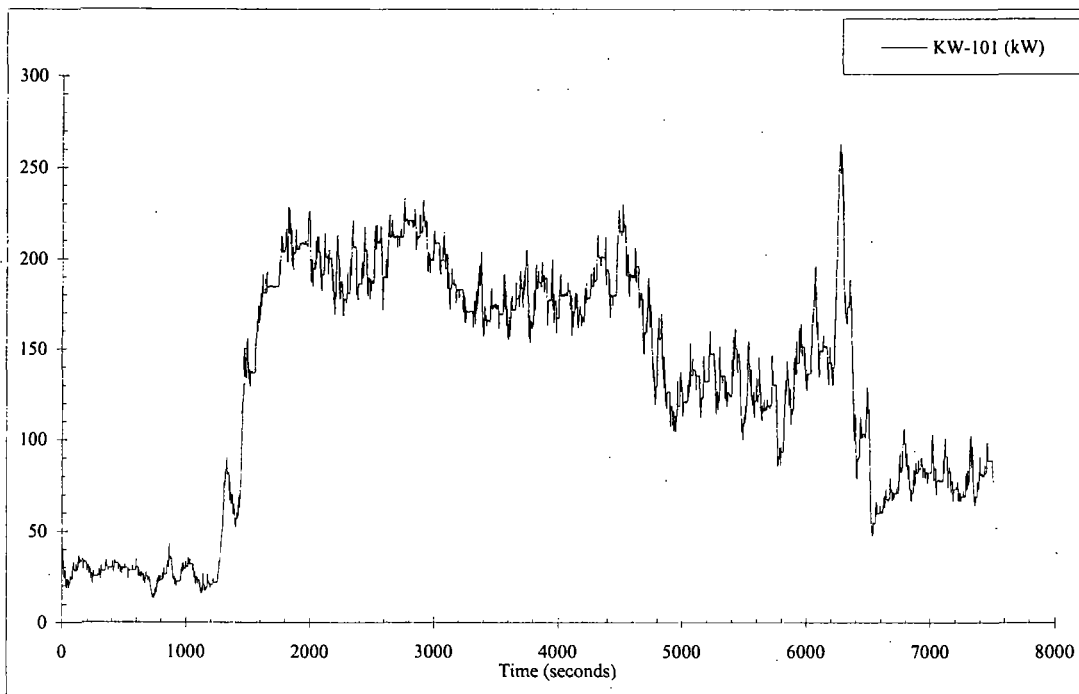
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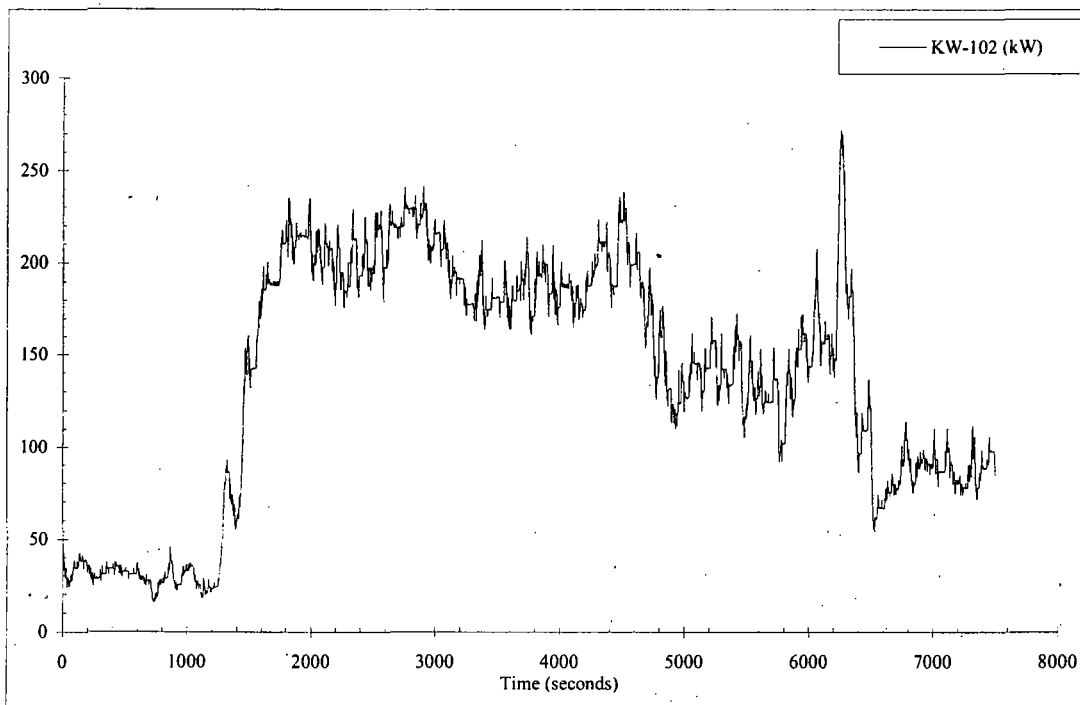
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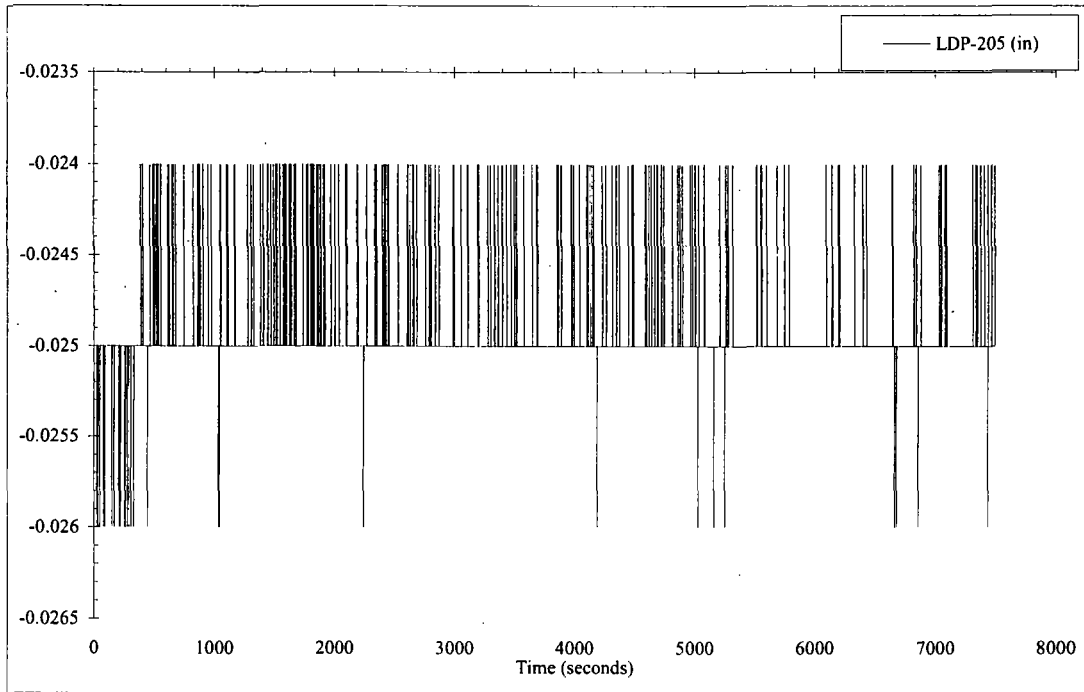
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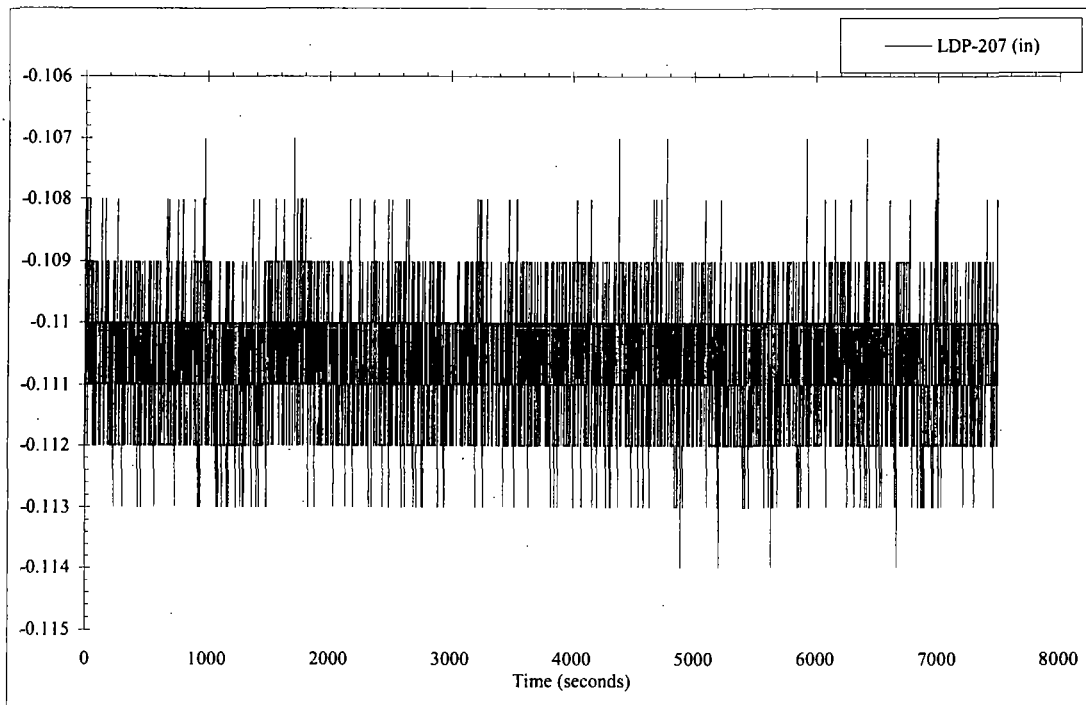
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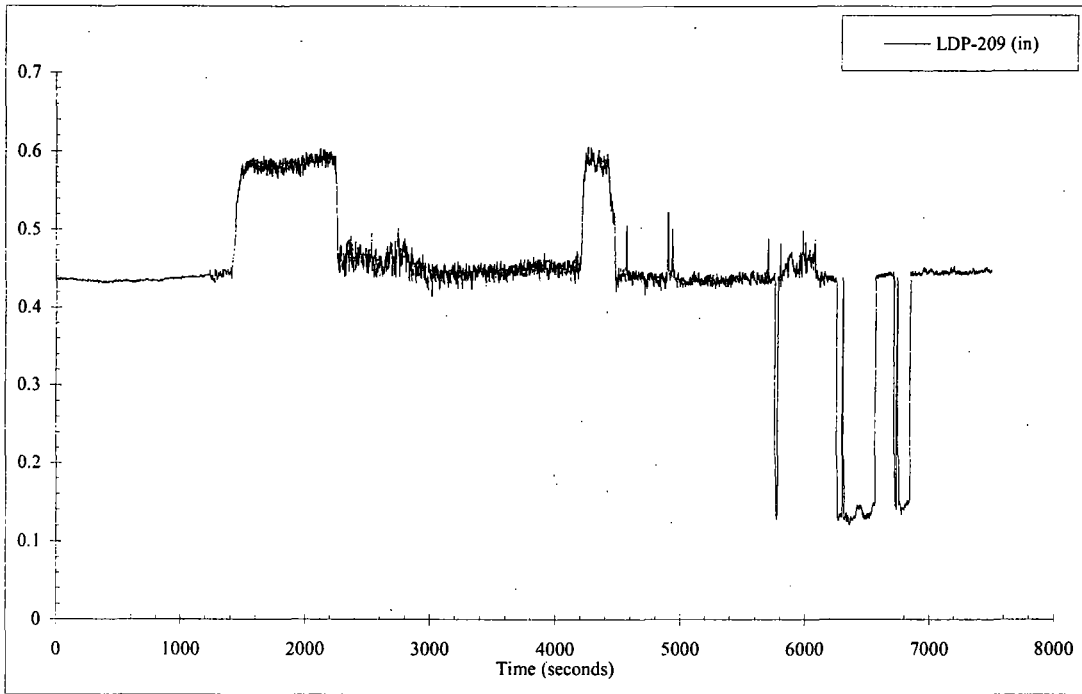
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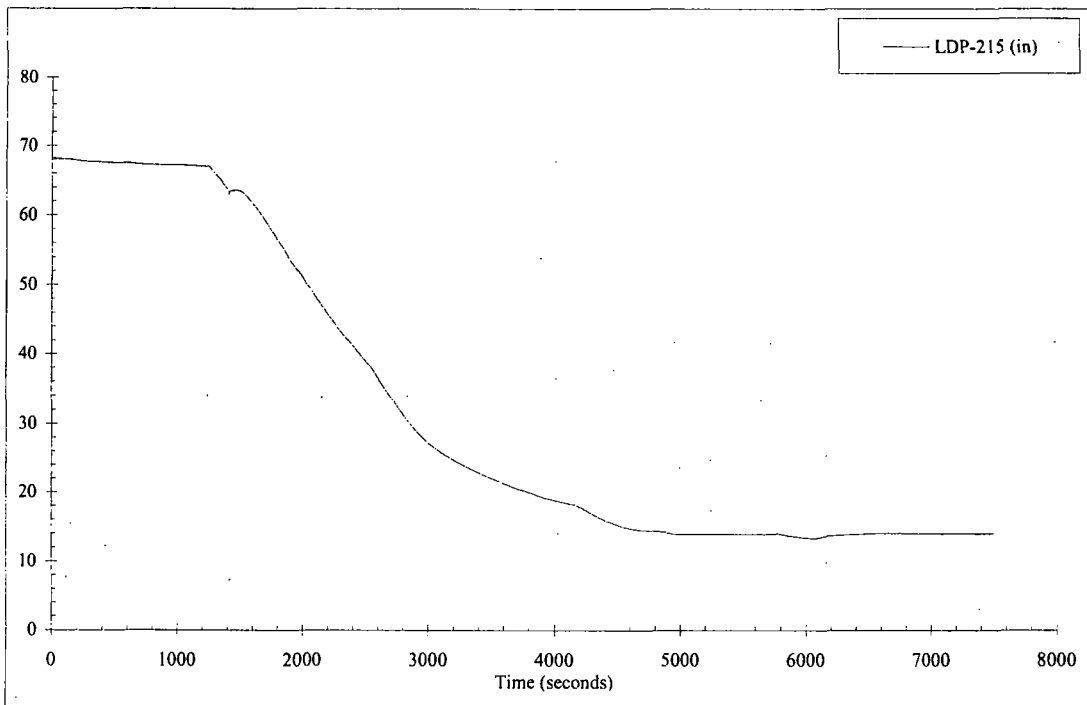
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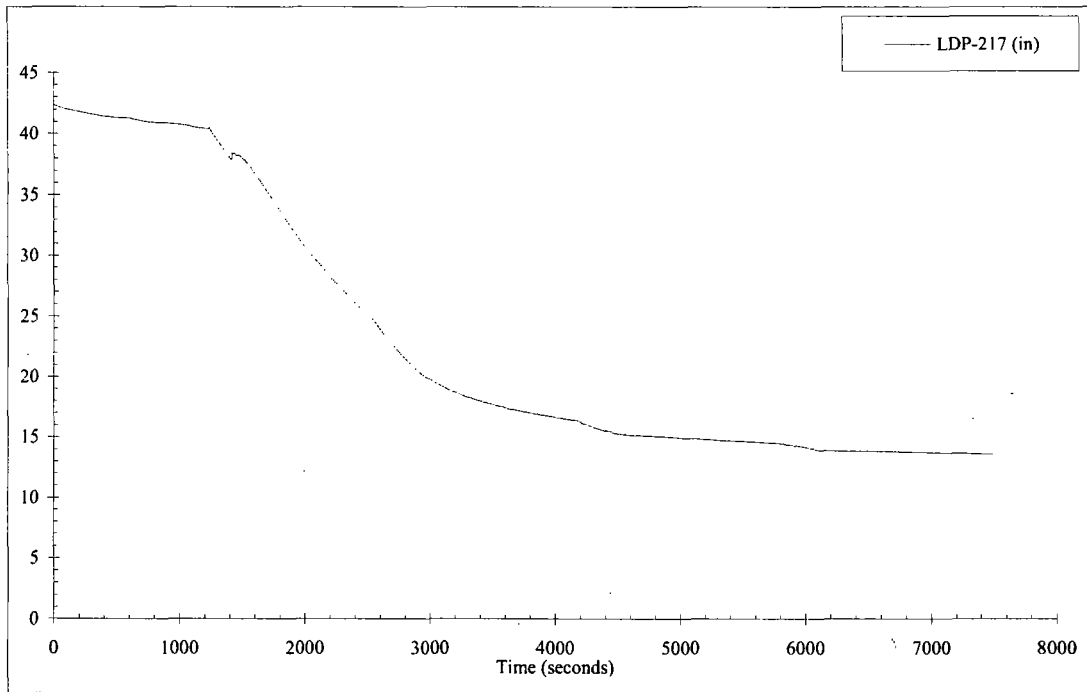
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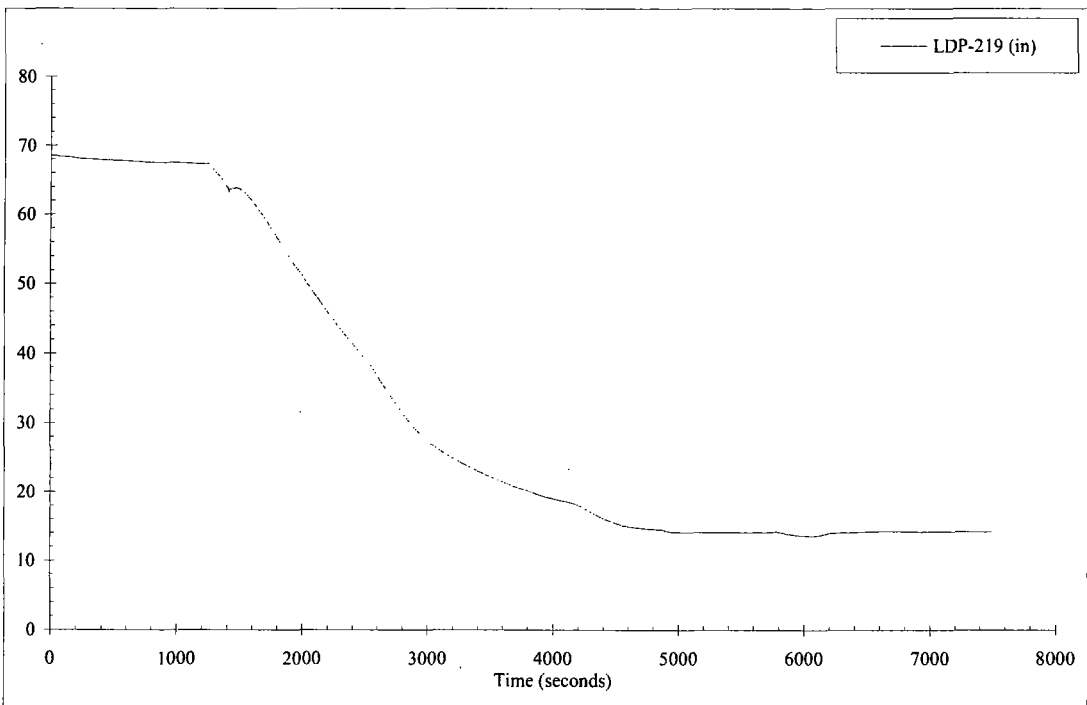
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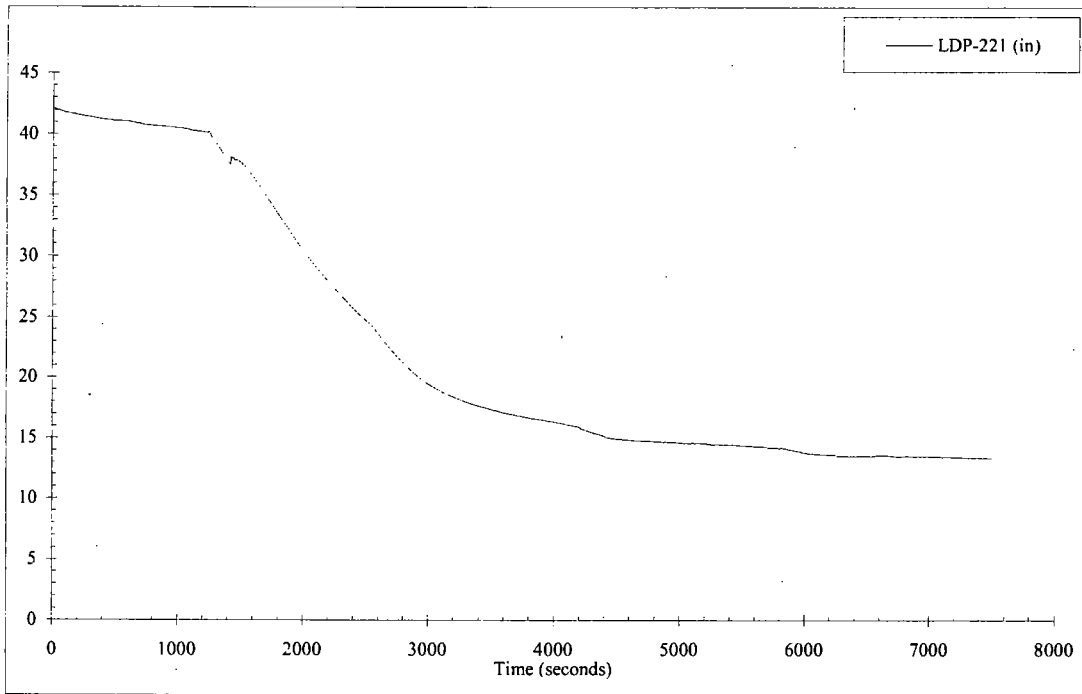
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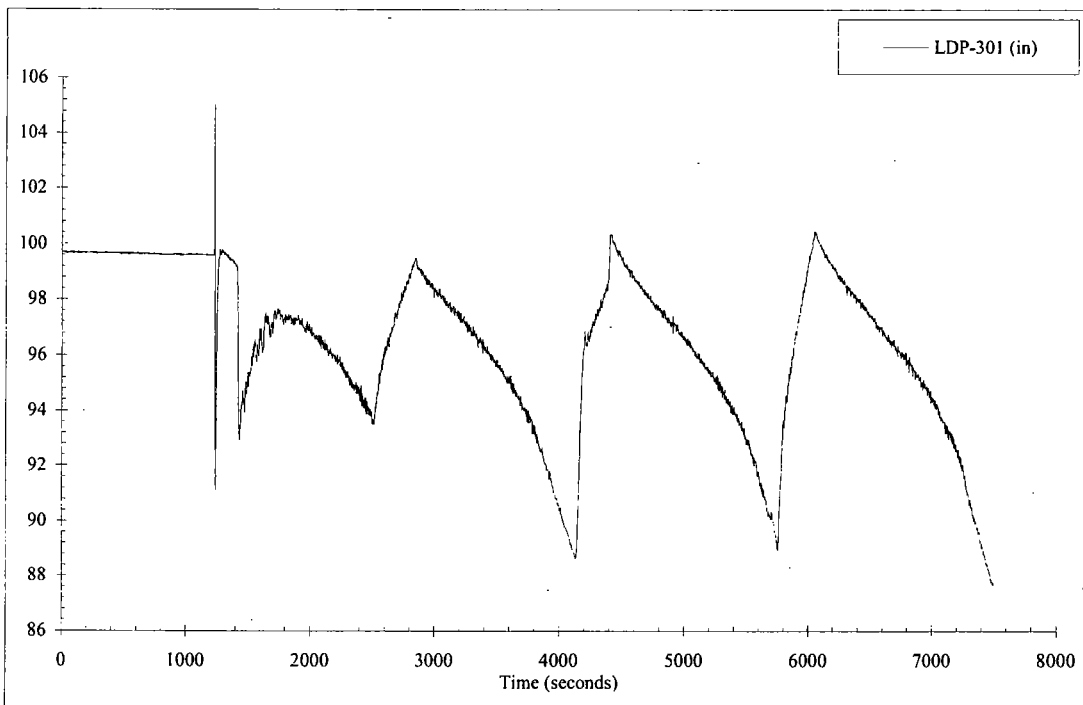
SG-1 Short Tube to HL Uncompensated Water Level



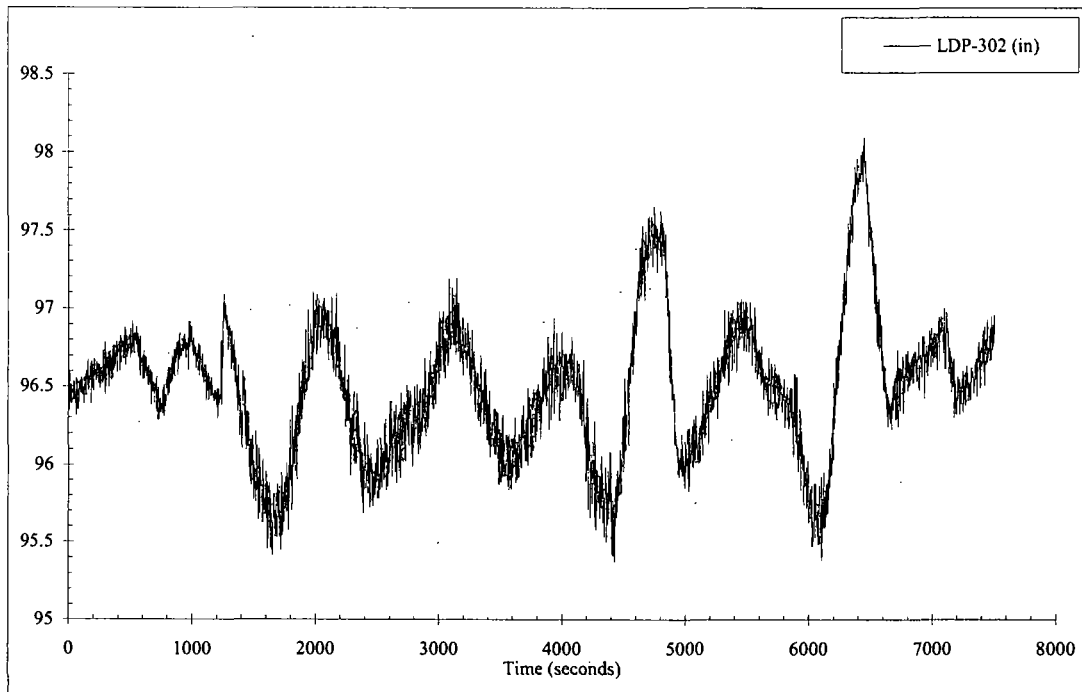
SG-1 Long Tube to CL Uncompensated Water Level



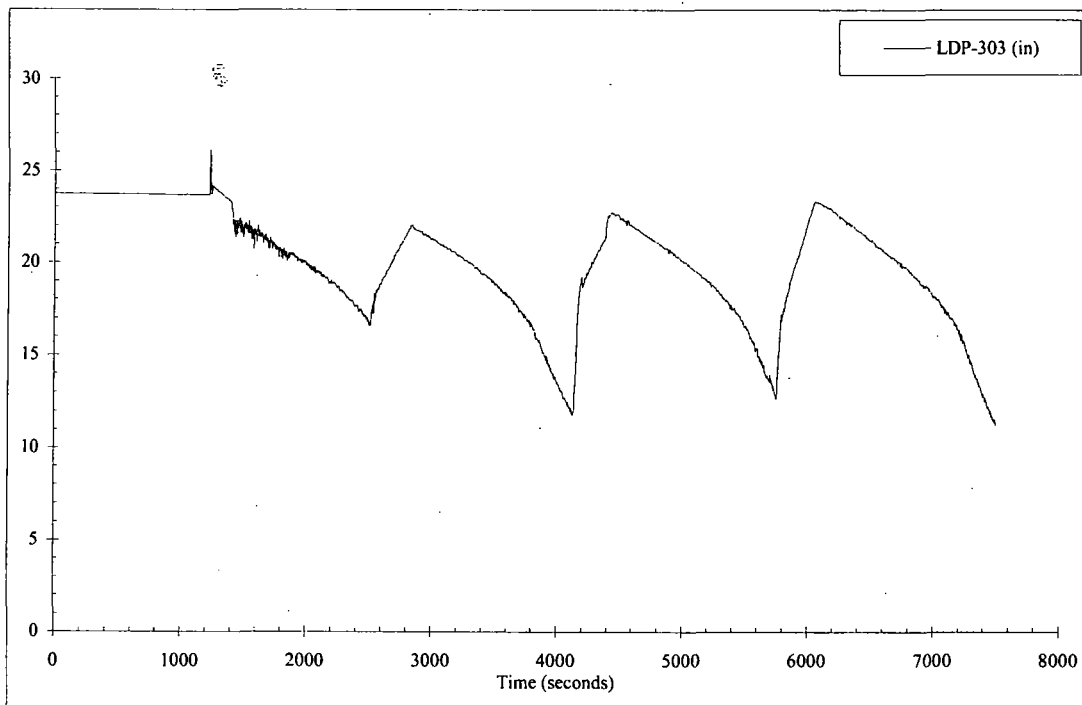
SG-1 Short Tube to CL Uncompensated Water Level



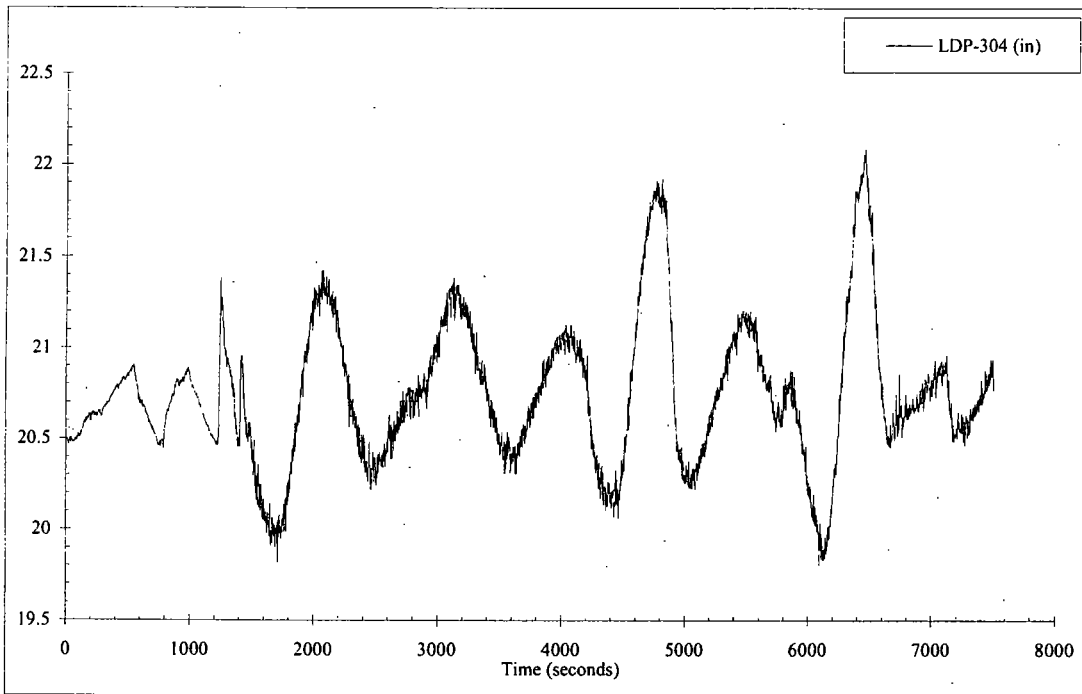
SG-1 WR Uncompensated Water Level



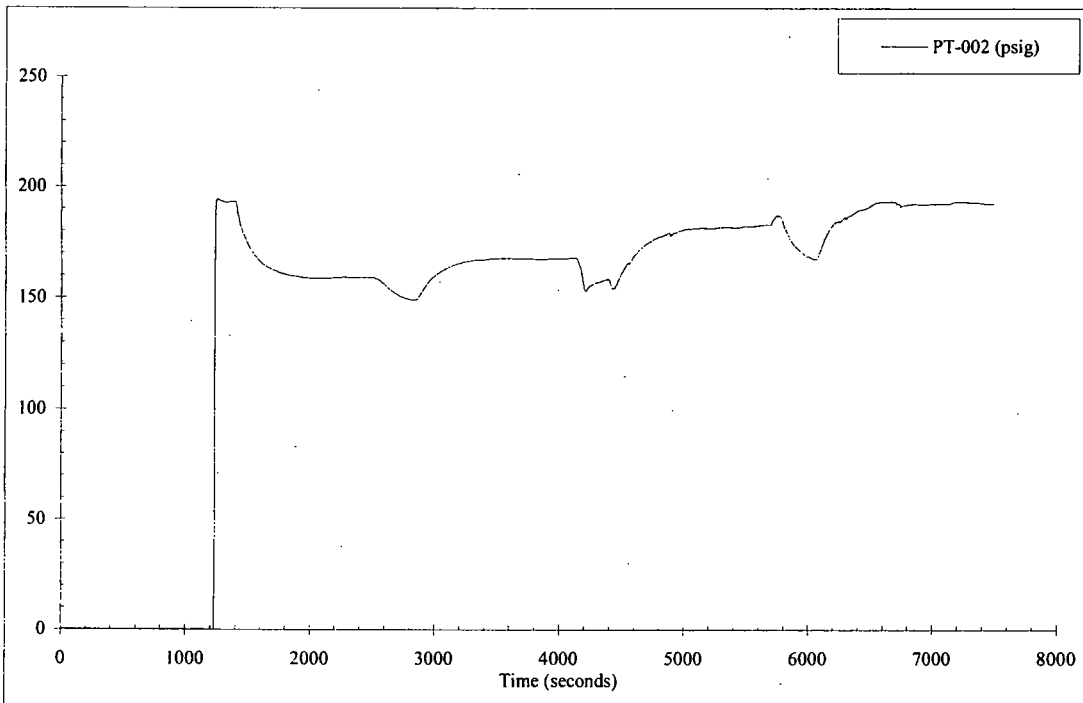
SG-2 WR Uncompensated Water Level



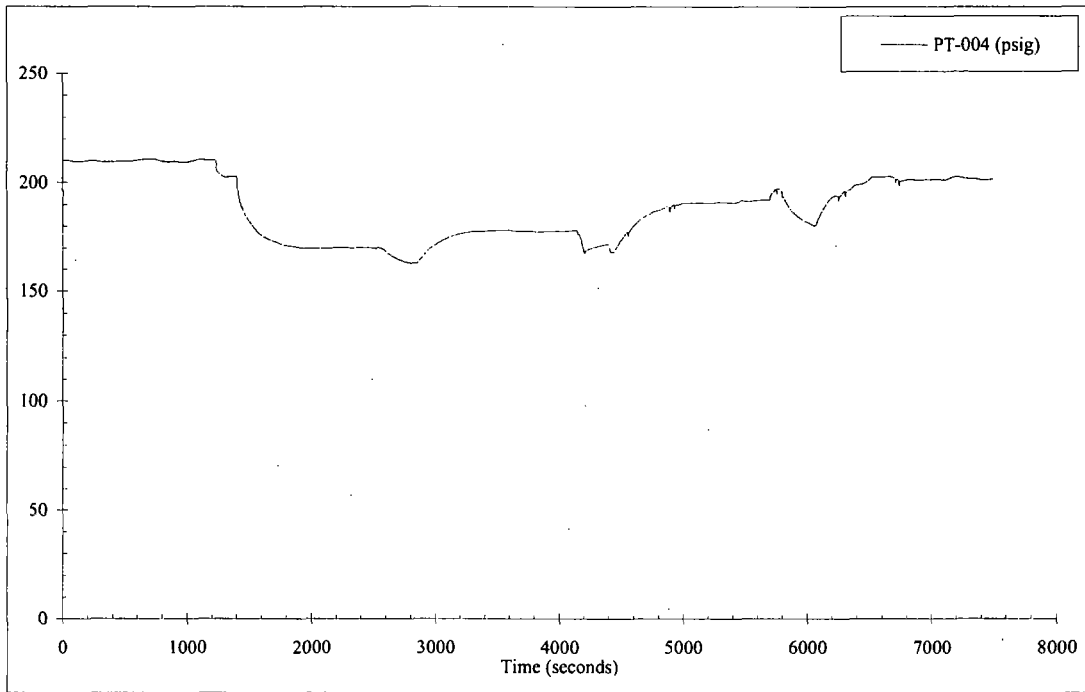
SG-1 NR Uncompensated Water Level



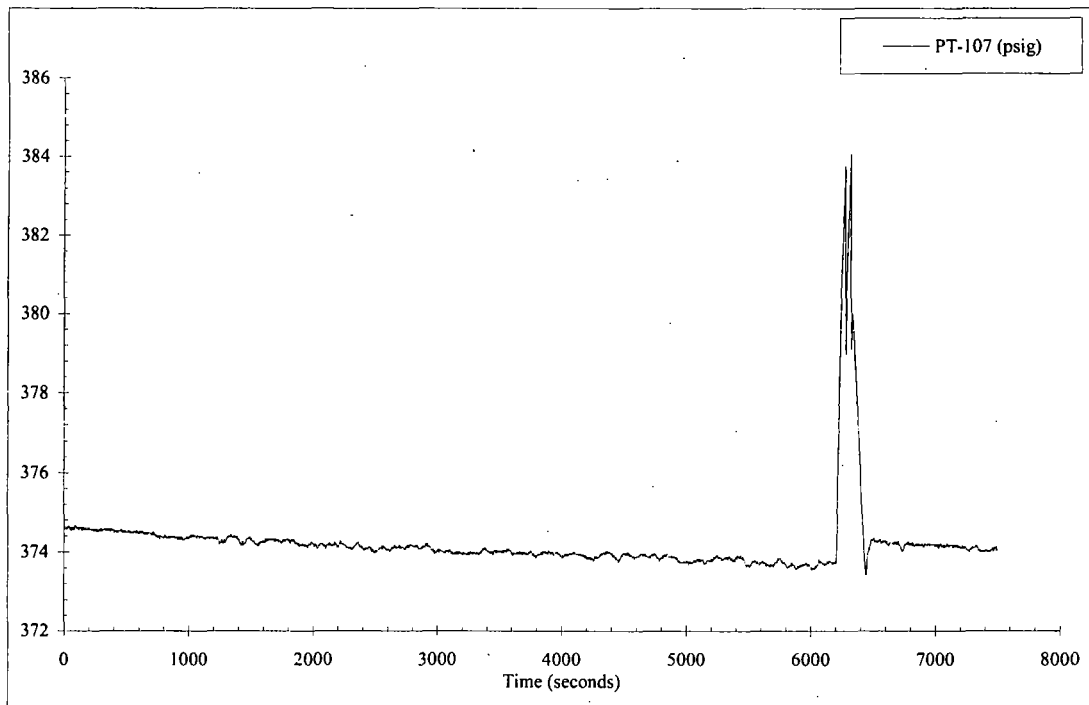
SG-2 NR Uncompensated Water Level



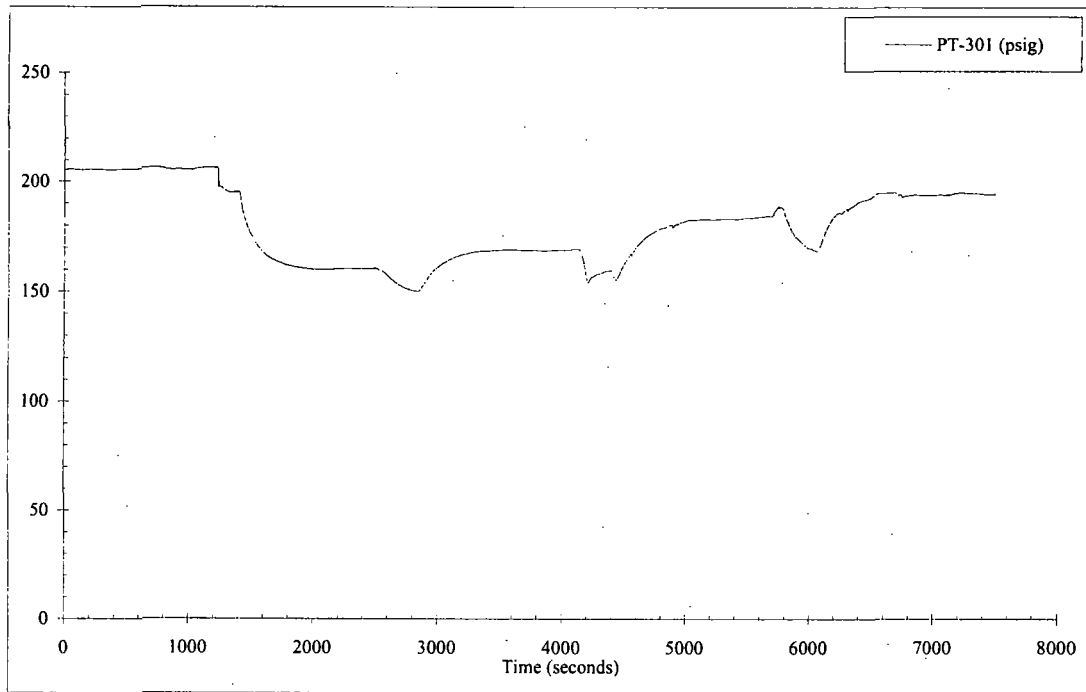
MS Header Pressure



Temp Steam Pressure for FVM-002



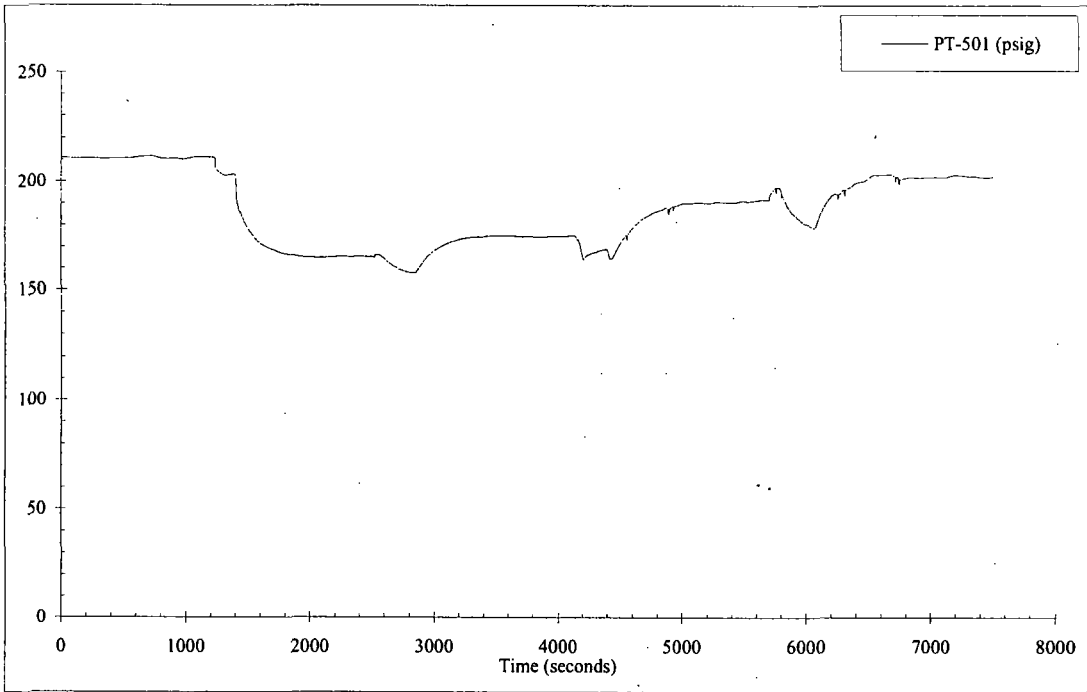
Rx Upper Head Pressure



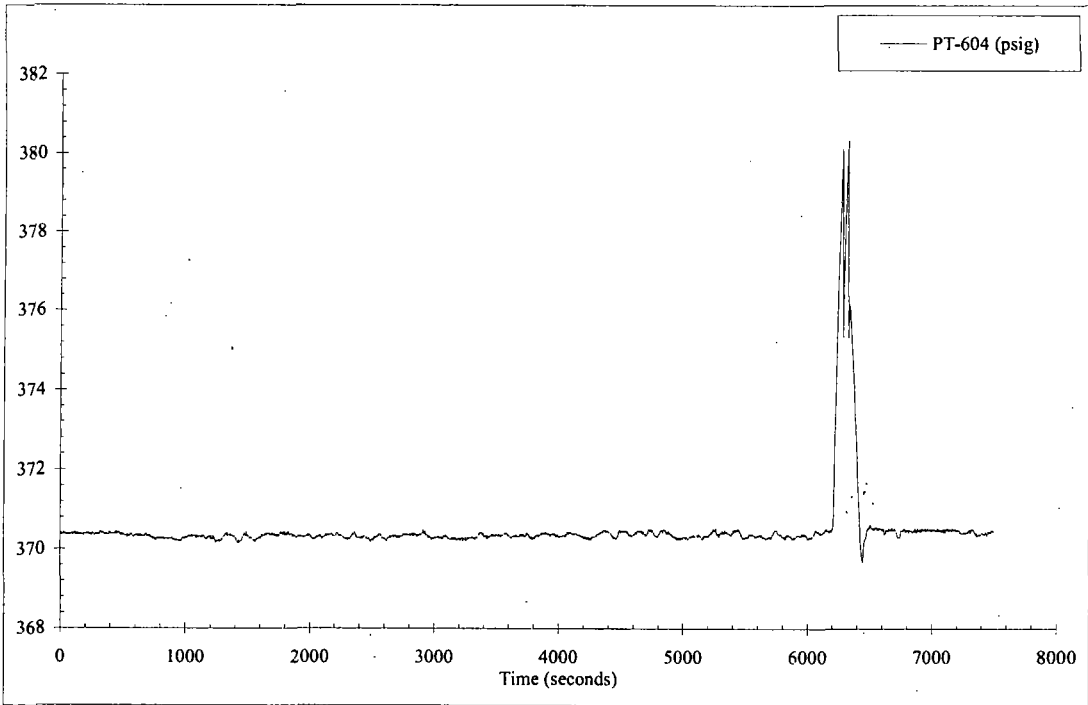
SG-1 Pressure



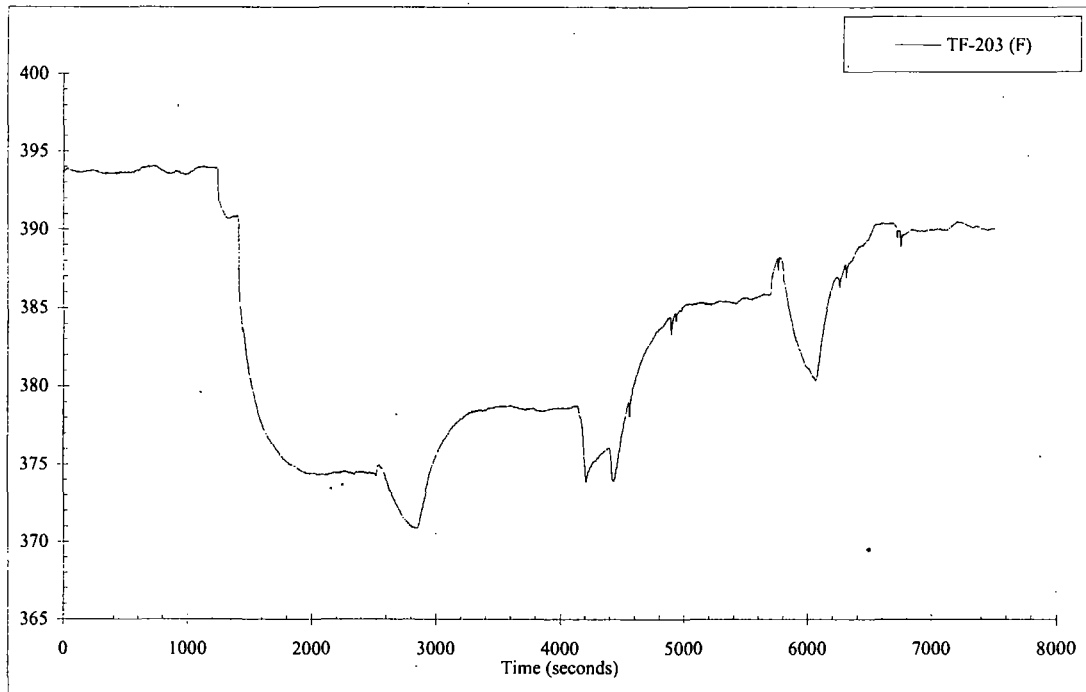
SG-2 Pressure



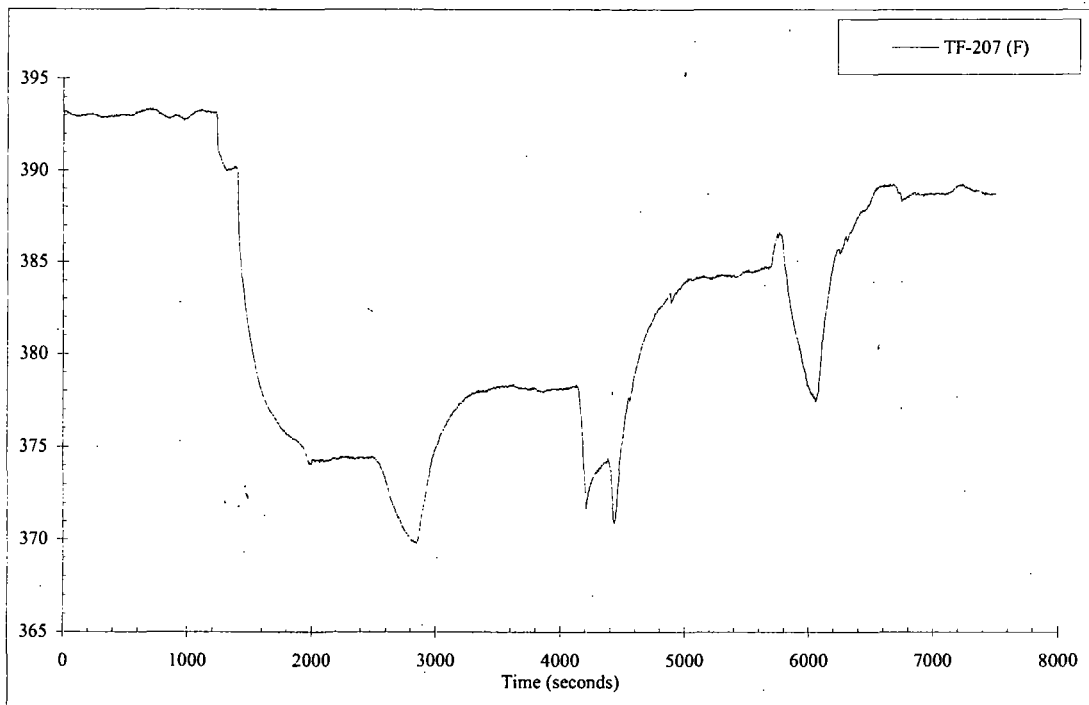
Separator Outlet Steam Pressure



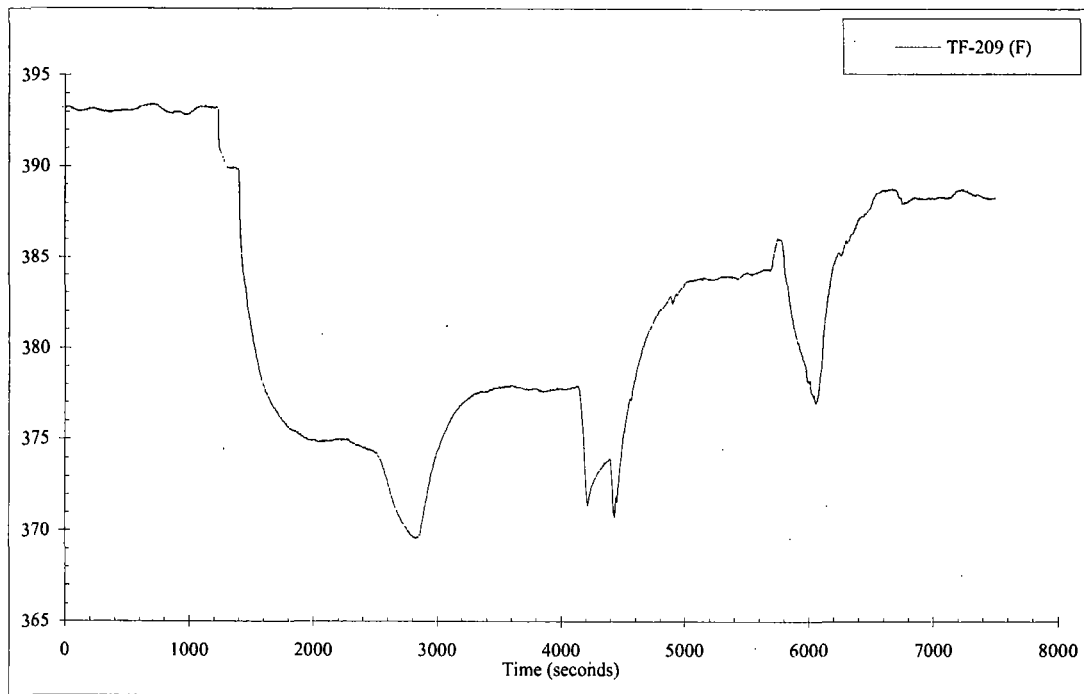
PZR WR Pressure



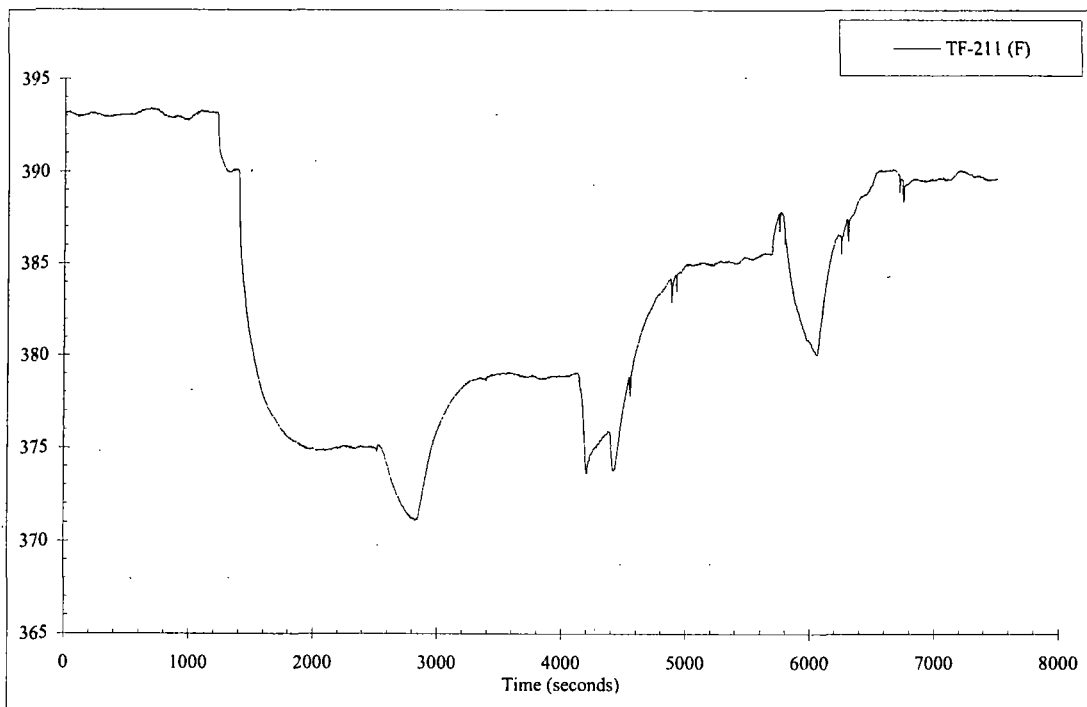
Separator Outlet Steam Temperature



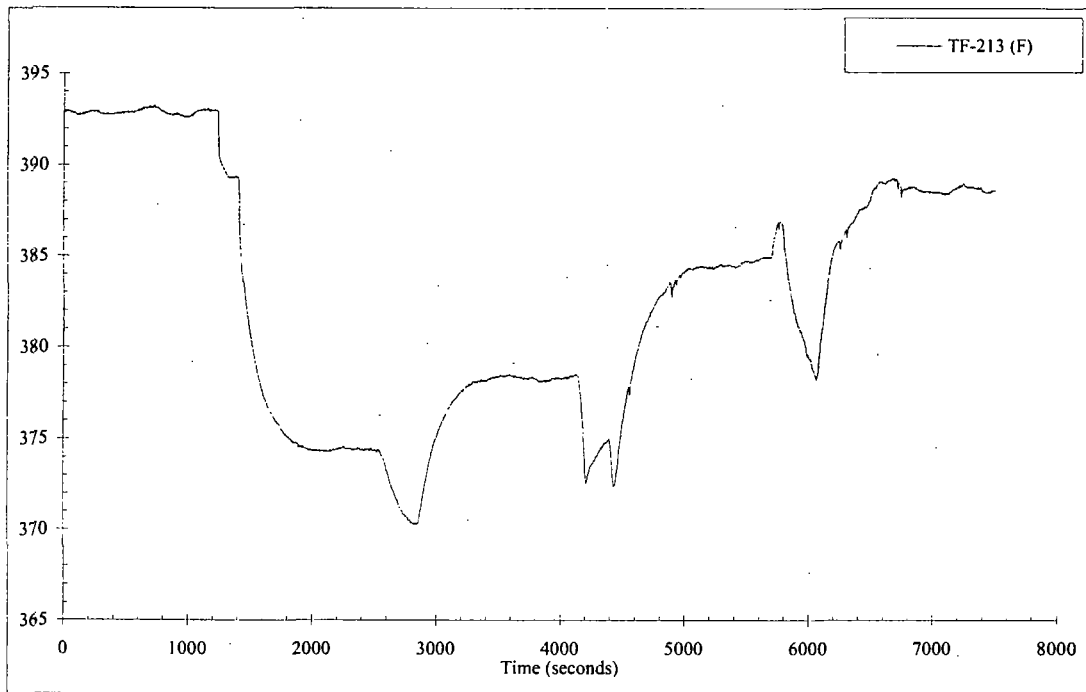
SG-1 Short Tube at Middle Outlet Side Temperature



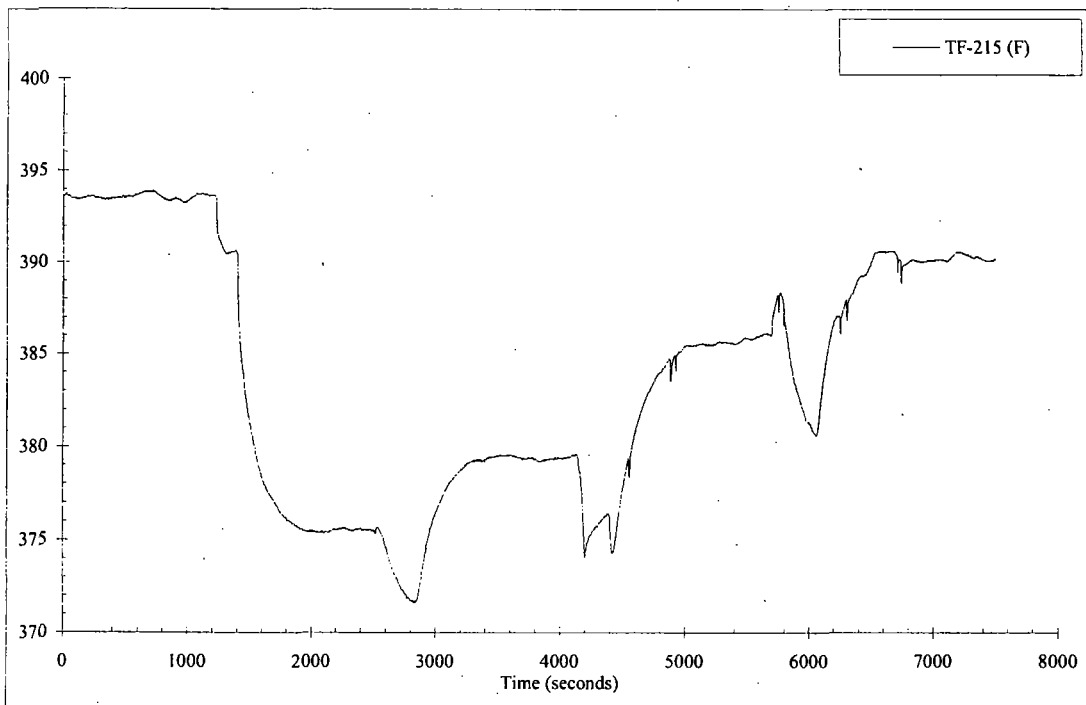
SG-1 Short Tube at Middle Inlet Side Temperature



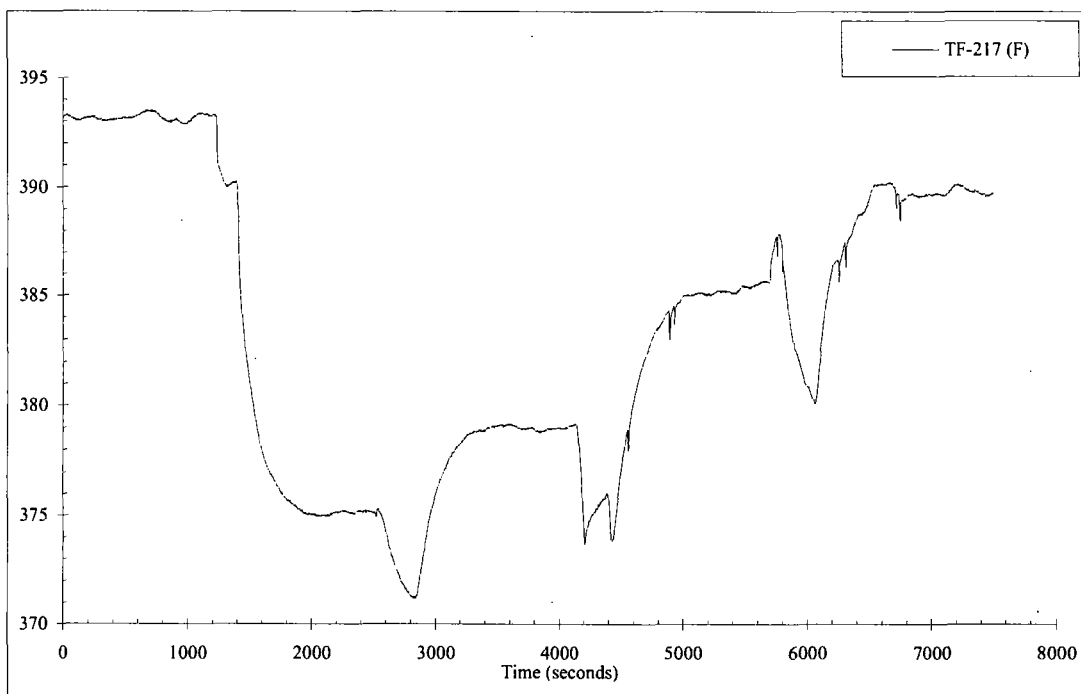
SG-1 Long Tube at Middle Outlet Temperature



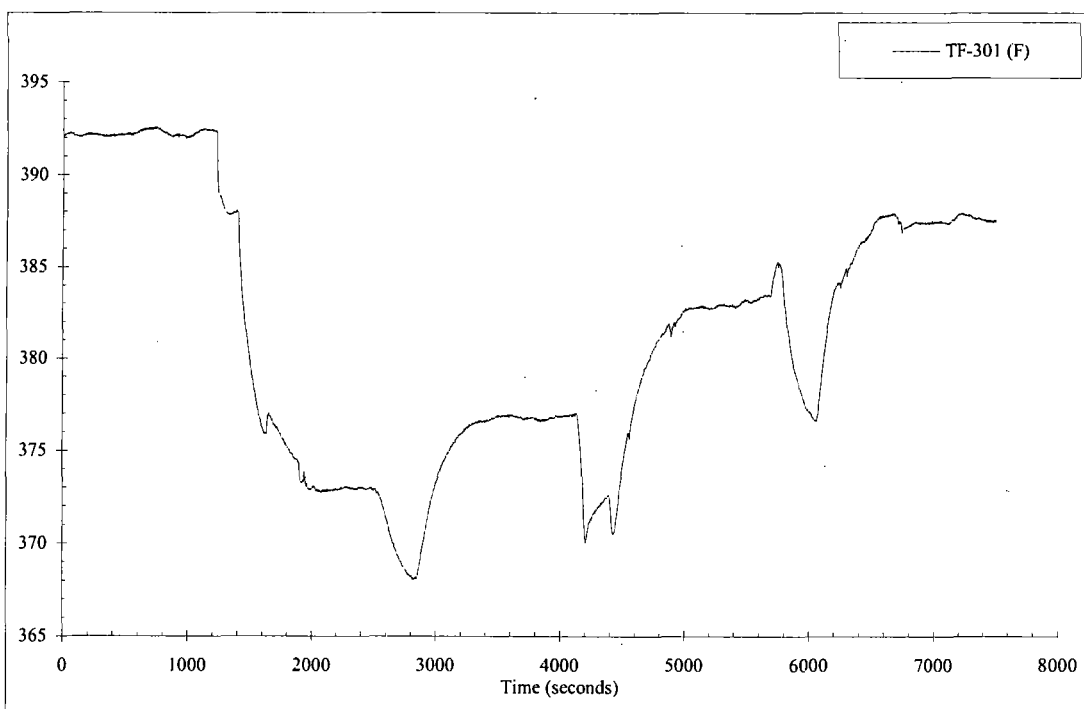
SG-1 Long Tube at Middle Inlet Temperature



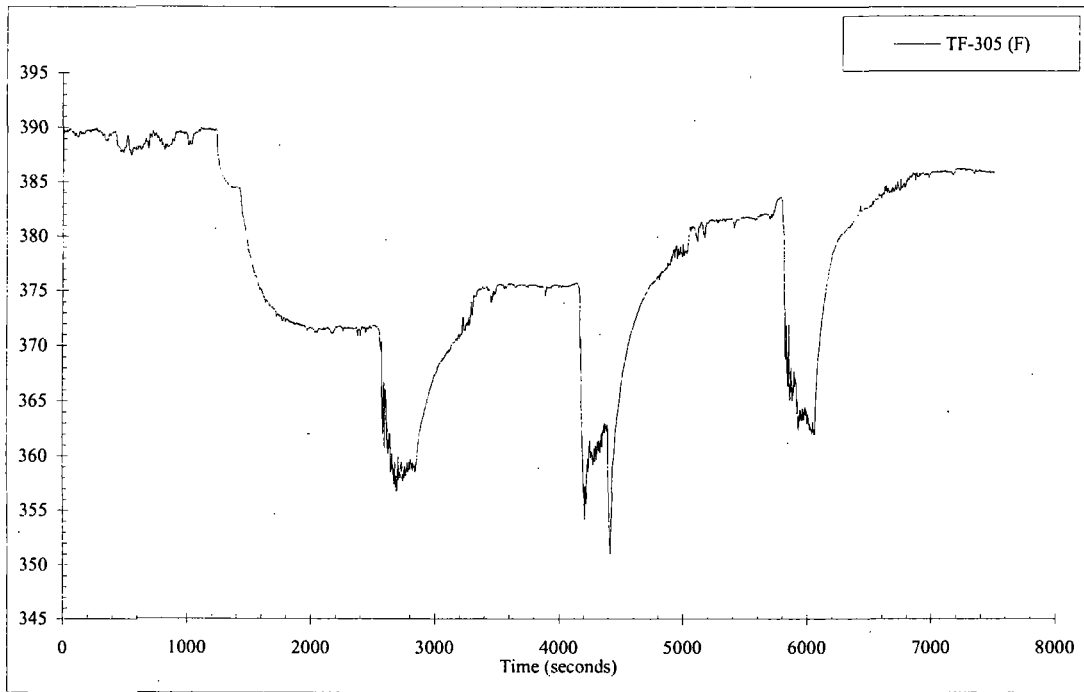
SG-1 Short Tube at Top Temperature



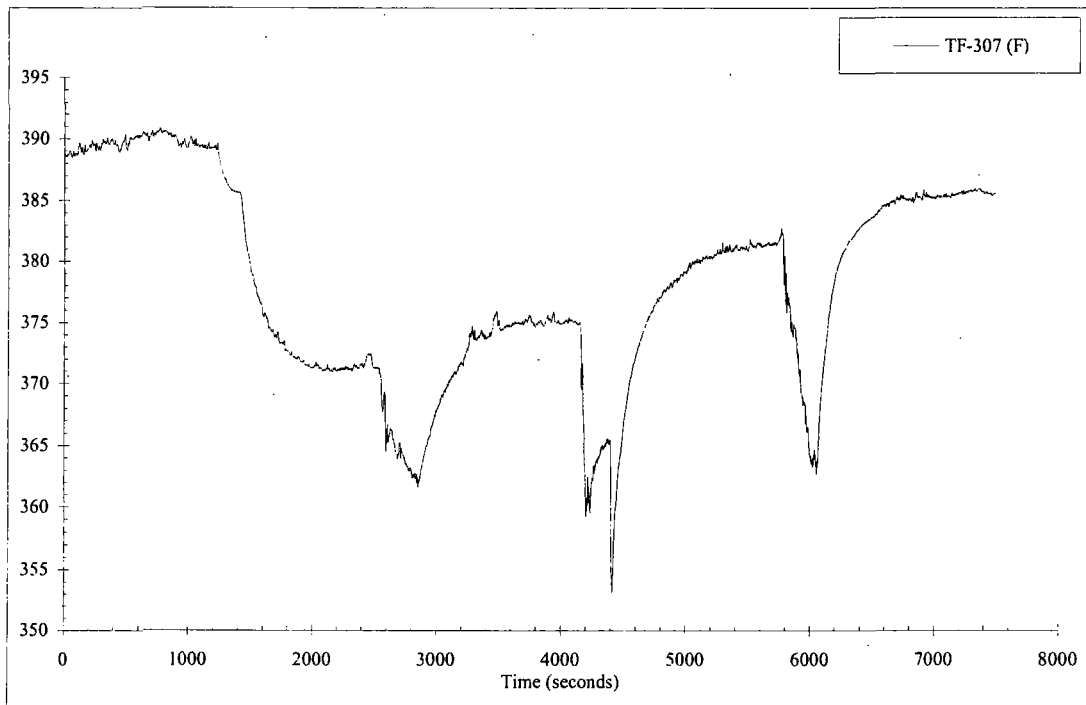
SG-1 Long Tube at Top Temperature



SG-1 Steam Temperature (SC-301)



SG-1 Downcomer HL Side Temperature



SG-1 Downcomer CL Side Temperature

NRC-COND-01: Steam Generator U-Tube Condensation Test @ 200 psig
 Oregon State University
 Start time = 11/03/2005 12:35:30
 End time = 11/03/2005 14:40:31
 File created on 11/04/2005 09:36:41

Timestamp	Interval (sec)	Tagname	Description	Value
12:33:30 PM	-119	TEST_SW	Facility Test Switch	In Test
12:33:31 PM	-118	dMuteSCR_Alarm	SCR Signal loss audible alarm	ON
12:55:59 PM	1229	M001_HS_O	SG-1 Strm Stop HS	Open
12:56:00 PM	1230	M001_STAT	SG-1 Steam Stop	Open
1:10:47 PM	2117	MF_001	FST Fill Valve	Open
1:14:57 PM	2367	MF_001	FST Fill Valve	Closed
1:25:31 PM	3001	MF_001	FST Fill Valve	Open
1:29:52 PM	3262	MF_001	FST Fill Valve	Closed
1:45:58 PM	4228	MF_001	FST Fill Valve	Open
1:51:35 PM	4565	MF_001	FST Fill Valve	Closed
2:13:14 PM	5864	MF_001	FST Fill Valve	Open
2:18:34 PM	6184	MF_001	FST Fill Valve	Closed
2:18:53 PM	6203	CVSP_HS_R	CVS Pump HS	Run
2:18:53 PM	6203	CVSP_X	CVS Pump	Running
2:20:08 PM	6278	R610_STAT	PZR Vent	Open
2:20:16 PM	6286	R610_STAT	PZR Vent	Closed
2:20:50 PM	6320	R610_STAT	PZR Vent	Open
2:21:00 PM	6330	R610_STAT	PZR Vent	Closed
2:21:02 PM	6332	CVSP_HS_R	CVS Pump HS	Off
2:21:02 PM	6332	CVSP_X	CVS Pump	Off
2:40:30 PM	7500	TEST_SW	Facility Test Switch	Normal

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
DASLogging	DSC Engine is logging data to the Citadel database	N/A	N/A	N/A	N/A	N/A
DASRunning	DSC Engine is running, but not necessarily logging data	N/A	N/A	N/A	N/A	N/A
DP-111	DP across Upper Core Plate	4.9931	0.9963	30	-30	Differential Pressure (in h2o)
DP-114	DP across Upper Support Plate	4.9796	0.9934	375	-375	Differential Pressure (in h2o)
DP-121	DVI-1/CL-1 Differential Pressure	4.9563	0.989	25	-25	Differential Pressure (in h2o)
DP-122	DVI-2/CL-2 Differential Pressure	4.9591	0.9931	25	-25	Differential Pressure (in h2o)
DP-123	DVI-1/CL-3 Differential Pressure	4.9743	0.9957	25	-25	Differential Pressure (in h2o)
DP-124	DVI-2/CL-4 Differential Pressure	4.9561	0.9924	25	-25	Differential Pressure (in h2o)
DP-125	HL-1 entrance losses	4.97	0.9951	30	0	Differential Pressure (in h2o)
DP-126	HL-2 entrance losses	4.9707	0.9949	30	0	Differential Pressure (in h2o)
DP-128	DVI-1 entrance losses	4.9709	0.9959	25	-25	Differential Pressure (in h2o)
DP-129	DVI-2 entrance losses	4.9736	0.9958	25	-25	Differential Pressure (in h2o)
DP-130	Upper Head Differential Pressure	4.9622	0.9941	50	-50	Differential Pressure (in h2o)
DP-201	CL-1 Differential Pressure	4.9689	0.9939	25	-25	Differential Pressure (in h2o)
DP-202	RCP-2 Differential Pressure	4.9588	0.9916	200	0	Differential Pressure (in h2o)
DP-203	RCP-1 Differential Pressure	4.9688	0.9941	200	0	Differential Pressure (in h2o)
DP-204	CL-2 Differential Pressure	4.9814	0.9969	25	-25	Differential Pressure (in h2o)
DP-205	RCP-3 Differential Pressure	4.978	0.995	200	0	Differential Pressure (in h2o)
DP-206	RCP-4 Differential Pressure	4.984	0.9959	200	0	Differential Pressure (in h2o)
DP-207	CL-3 Differential Pressure	4.9817	0.9967	25	-25	Differential Pressure (in h2o)
DP-208	CL-4 Differential Pressure	4.9905	0.9984	25	-25	Differential Pressure (in h2o)
DP-209	HL-1 Differential Pressure	4.9858	0.998	25	-25	Differential Pressure (in h2o)
DP-210	HL-2 Differential Pressure	4.9649	0.9933	25	-25	Differential Pressure (in h2o)
DP-211	SG-1 Short Tube Entrance Losses	4.9849	0.9979	25	0	Differential Pressure (in h2o)
DP-212	SG-2 Long Tube Exit Losses	4.9838	0.9979	25	0	Differential Pressure (in h2o)
DP-213	SG-1 Long Tube Exit Losses	4.9788	0.9965	15	-15	Differential Pressure (in h2o)
DP-214	SG-2 Long Tube Entrance Losses	4.981	0.9973	15	0	Differential Pressure (in h2o)
DP-215	Break Differential Pressure	4.9807	0.9981	500	0	Differential Pressure (psid)
DP-216	Break Differential Pressure	4.9729	0.9964	500	0	Differential Pressure (psid)
DP-217	HL-1 to CL1 Differential Pressure at SG1	4.9818	0.9966	36.67	0	Differential Pressure (in h2o)
DP-218	HL-2 to CL2 Differential Pressure at SG2	4.9889	0.9992	150	0	Differential Pressure (in h2o)
DP-219	HL-1 to CL3 Differential Pressure at SG1	4.9686	0.9949	30.95	0	Differential Pressure (in h2o)
DP-220	HL-2 to CL4 Differential Pressure at SG2	4.9627	0.9936	150	0	Differential Pressure (in h2o)
DP-221	HL-1 to CL1 Differential Pressure at Rx	4.9677	0.9951	150	0	Differential Pressure (in h2o)
DP-222	HL-2 to CL2 Differential Pressure at Rx	4.983	0.9975	150	0	Differential Pressure (in h2o)
DP-223	HL-1 to CL3 Differential Pressure at Rx	4.9915	0.9987	150	0	Differential Pressure (in h2o)
DP-224	HL-2 to CL4 Differential Pressure at Rx	4.9665	0.9944	150	0	Differential Pressure (in h2o)
DP-401	ACC-1 Injection Differential Pressure	4.979	0.9975	400	0	Differential Pressure (in h2o)
DP-402	ACC-2 Injection Differential Pressure	4.9736	0.9958	400	0	Differential Pressure (in h2o)
DP-501	CMT-1 Injection Differential Pressure	4.9675	0.9948	150	-150	Differential Pressure (in h2o)
DP-502	CMT-2 Injection Differential Pressure	4.9645	0.9947	150	-150	Differential Pressure (in h2o)
DP-503	CMT-1 Balance Line Differential Pressure	4.9858	0.998	150	-150	Differential Pressure (in h2o)
DP-504	CMT-2 Balance Line Differential Pressure	4.9955	1.0007	100	-100	Differential Pressure (in h2o)
DP-601	HL-1 to ADS4-1 Differential Pressure	4.9969	1.0008	10	0	Differential Pressure (psid)
DP-602	HL-2 to ADS4-2 Differential Pressure	4.967	0.9948	10	0	Differential Pressure (psid)
DP-603	ADS4-1 Venturi	4.9847	0.9985	100	0	Differential Pressure (in h2o)
DP-604	ADS4-2 Venturi	4.984	0.9941	100	0	Differential Pressure (in h2o)
DP-605	ADS4-1 Venturi outlet to Enlarger inlet	4.9881	0.9993	50	0	Differential Pressure (in h2o)
DP-606	ADS4-2 Venturi outlet to Enlarger inlet	4.9857	0.9991	50	0	Differential Pressure (in h2o)
DP-611	PZR Surge Line Differential Pressure	4.9773	0.9967	25	-25	Differential Pressure (in h2o)
DP-701	IRWST-1 Injection Differential Pressure	4.9872	0.9982	30	0	Differential Pressure (psid)
DP-702	IRWST-2 Injection Differential Pressure	4.9871	0.9981	30	0	Differential Pressure (psid)
DP-905	Break Separator Entrance Differential Pressure	4.9905	0.9994	100	0	Differential Pressure (psid)
FDP-604	ADS-2 Flow Differential Pressure	4.9738	0.9961	100	0	Differential Pressure (psid)
FDP-605	ADS-1 Flow Differential Pressure	4.9896	0.9993	250	0	Differential Pressure (psid)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
FDP-606	ADS-3 Flow Differential Pressure	5.0051	1.0023	100	0	Differential Pressure (psid)
FMM-001	SG-1 Feed Flow	4.9838	0.9961	6	0	Volumetric Flow Rate (gpm)
FMM-002	SG-2 Feed Flow	4.9642	0.9925	6	0	Volumetric Flow Rate (gpm)
FMM-201	CL-1 Loop Flow	4.9607	0.9921	100	-100	Volumetric Flow Rate (gpm)
FMM-202	CL-2 Loop Flow	4.9754	0.9943	100	-100	Volumetric Flow Rate (gpm)
FMM-203	CL-3 Loop Flow	4.9853	0.9974	100	-100	Volumetric Flow Rate (gpm)
FMM-204	CL-4 Loop Flow	4.9729	0.9936	100	-100	Volumetric Flow Rate (gpm)
FMM-205	DVI-1 Flow	4.9706	0.996	75	0	Volumetric Flow Rate (gpm)
FMM-206	DVI-2 Flow	4.9767	0.9969	75	0	Volumetric Flow Rate (gpm)
FMM-401	ACC-1 Injection Flow	4.9516	0.9932	40	0	Volumetric Flow Rate (gpm)
FMM-402	ACC-2 Injection Flow	4.9772	0.9965	40	0	Volumetric Flow Rate (gpm)
FMM-501	CMT-1 Injection Flow	4.9599	1.0006	75	0	Volumetric Flow Rate (gpm)
FMM-502	CMT-2 CL Balance Line Flow	4.9742	0.9994	70	0	Volumetric Flow Rate (gpm)
FMM-503	CMT-1 CL Balance Line Flow	4.9717	0.9985	75	0	Volumetric Flow Rate (gpm)
FMM-504	CMT-2 Injection Flow	4.9523	0.9925	20	0	Volumetric Flow Rate (gpm)
FMM-601	ADS1-3 Loop Seal Flow	5.0168	1.004	200	0	Volumetric Flow Rate (gpm)
FMM-602	ADS4-2 Loop Seal Flow	5.0507	1.0117	60	0	Volumetric Flow Rate (gpm)
FMM-603	ADS4-1 Loop Seal Flow	5.0571	1.0129	60	0	Volumetric Flow Rate (gpm)
FMM-701	IRWST/DVI-1 Injection Flow	4.9738	0.9954	40	0	Volumetric Flow Rate (gpm)
FMM-702	IRWST/DVI-2 Injection Flow	4.9724	0.9955	40	0	Volumetric Flow Rate (gpm)
FMM-703	IRWST Overflow	4.9663	0.9966	10	0	Volumetric Flow Rate (gpm)
FMM-801	CVSP Discharge Flow	4.9876	0.9998	8	0	Volumetric Flow Rate (gpm)
FMM-802	PRHR Inlet Flow	4.9656	0.9966	40	0	Volumetric Flow Rate (gpm)
FMM-803	RNSP to DVI-2 Flow	4.9629	0.9942	30	0	Volumetric Flow Rate (gpm)
FMM-804	PRHR Outlet Flow	4.9612	0.9963	40	0	Volumetric Flow Rate (gpm)
FMM-805	RNSP Discharge Flow	4.9711	0.9936	40	0	Volumetric Flow Rate (gpm)
FMM-901	Primary Sump-1 Recirculation Injection Flow	4.9673	0.9936	40	-40	Volumetric Flow Rate (gpm)
FMM-902	Primary Sump-2 Recirculation Injection Flow	4.9726	0.9948	40	-40	Volumetric Flow Rate (gpm)
FMM-905	Break Separator Loop Seal Flow	5.1224	1.0902	90	-90	Volumetric Flow Rate (gpm)
FVM-001	SG-1 Main Steam Flow	5.0202	1.0036	70	0	Steam Flow Rate (cfm)
FVM-002	SG-2 Main Steam Flow	4.9885	0.9986	70	0	Steam Flow Rate (cfm)
FVM-003	Main Steam Total Flow	5.0101	0.9988	140	0	Steam Flow Rate (cfm)
FVM-004	Catch Tank Steam Flow Rate	4.9885	1.001	70	0	Steam Flow Rate (cfm)
FVM-009	SG-1 PORV Blowdown Steam Flow	4.9836	0.9967	381	0	Steam Flow Rate (cfm)
FVM-010	SG-2 PORV Blowdown Steam Flow	4.9817	0.9971	381	0	Steam Flow Rate (cfm)
FVM-601	ADS1-3 Separator Steam Flow	4.9995	1.0017	2000	0	Steam Flow Rate (cfm)
FVM-602	ADS4-2 Separator 6-inch Line Steam Flow	5.006	1.0018	2000	0	Steam Flow Rate (cfm)
FVM-603	ADS4-1 Separator 6-inch Line Steam Flow	5.0062	1.0024	1600	0	Steam Flow Rate (cfm)
FVM-604	ADS4-2 Separator 2-inch Line Steam Flow	5.0034	1.0026	348	0	Steam Flow Rate (cfm)
FVM-605	ADS4-1 Separator 2-inch Line Steam Flow	5.0037	1.0028	348	0	Steam Flow Rate (cfm)
FVM-901	BAMS HDR 6-inch Line Steam Flow	5.0021	1.0023	5000	0	Steam Flow Rate (cfm)
FVM-902	BAMS HDR 10-inch Line Steam Flow	5.01	1.0027	12500	0	Steam Flow Rate (cfm)
FVM-903	Primary Sump Steam Exhaust Flow	4.9879	0.9949	22	0	Steam Flow Rate (cfm)
FVM-904	Break Separator 3-inch Line Steam Flow	4.9986	0.9979	400	0	Steam Flow Rate (cfm)
FVM-905	Break Separator 6-inch Line Steam Flow	5.0036	1.004	6000	0	Steam Flow Rate (cfm)
FVM-906	Break Separator 8-inch Line Steam Flow	5.0048	1.0025	4000	0	Steam Flow Rate (cfm)
HPS-201-1	CL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-201-2	CL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-201-3	CL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-202-1	CL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-202-2	CL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-202-3	CL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-203-1	CL-3 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-203-2	CL-3 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-203-3	CL-3 Fluid temperature	10	0	10	0	Voltage (V)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
HPS-204-1	CL-4 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-204-2	CL-4 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-204-3	CL-4 Fluid temperature	10	0	10	0	Voltage (V)
HPS-205-1	HL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-205-2	HL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-205-3	HL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-206-1	HL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-206-2	HL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-206-3	HL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-509-1	CMT-1 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-509-2	CMT-1 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-509-3	CMT-1 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-512-1	CMT-2 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-512-2	CMT-2 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-512-3	CMT-2 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-604-1	Lower PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-604-2	Lower PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-604-3	Lower PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-606-1	ADS1-3 Common Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-606-2	ADS1-3 Common Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-606-3	ADS1-3 Common Inlet Fluid temperature	10	0	10	0	Voltage (V)
HPS-607-1	Upper PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-607-2	Upper PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-607-3	Upper PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-801-1	PRHR HX Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-801-2	PRHR HX Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-801-3	PRHR HX Inlet Fluid temperature	10	0	10	0	Voltage (V)
KW-101	Rx Heater Group 1 Power	4.3222	1.1171	472	0	Power (kW)
KW-102	Rx Heater Group 2 Power	4.1621	1.0045	486	0	Power (kW)
KW-103	Rx Heater Group 1 Power	4.8931	0.9786	496	0	Power (kW)
KW-104	Rx Heater Group 2 Power	4.912	0.9946	492	0	Power (kW)
KW-601	PZR Heater Power	4.9435	0.982	24.3	0	Power (kW)
LCT-701	IRWST Weight	4.9831	0.9976	40000	0	Mass (lbm)
LCT-901	Primary Sump Weight	4.977	0.9969	28800	0	Mass (lbm)
LCT-902	Secondary Sump Weight	4.9845	0.9983	16700	0	Mass (lbm)
LDP-001	FST Uncompensated Water Level	5.0056	1.0017	91.88	0	Water Level (in)
LDP-101	CL to Bypass Holes Uncompensated Water Level (270)	4.9645	0.9945	5.561	0	Water Level (in)
LDP-102	CL to Bypass Holes Uncompensated Water Level (180)	4.9725	0.9963	5.938	0	Water Level (in)
LDP-103	DVI to CL Uncompensated Water Level (270)	4.9807	0.9982	11.692	0	Water Level (in)
LDP-104	DVI to CL Uncompensated Water Level (180)	4.9748	0.9992	12.376	0	Water Level (in)
LDP-105	Upper Core Plate to DVI Uncompensated Water Level (270)	5.0076	1.0058	11.929	0	Water Level (in)
LDP-106	Bottom of Core to Lower Core Plate Uncompensated Water Level (180)	4.9732	0.9985	8.198	0	Water Level (in)
LDP-107	Bottom of Core to Lower Core Plate Uncompensated Water Level (270)	4.9713	0.9958	8.223	0	Water Level (in)
LDP-108	Bottom of Core to Lower Core Plate Uncompensated Water Level (0)	4.9683	0.9953	8.562	0	Water Level (in)
LDP-109	Lower Core Plate to Mid-Core Spacer Grid Uncompensated Water Level (0)	4.984	0.9988	19.763	0	Water Level (in)
LDP-110	Mid-Core Spacer Grid to Upper-Core Spacer Grid Uncompensated Water Level (0)	4.9909	0.9991	20.02	0	Water Level (in)
LDP-112	Upper Core Plate to DVI Uncompensated Water Level (0)	4.9755	0.9963	4.696	0	Water Level (in)
LDP-113	DVI to Bottom of Upper Support Plate Uncompensated Water Level (0)	4.9849	0.9986	15.614	0	Water Level (in)
LDP-115	Upper Support Plate to Top of Rx Uncompensated Water Level (0)	4.9896	0.9996	24.28	0	Water Level (in)
LDP-116	Bottom of Rx to Bottom of Bypass Holes Uncompensated Water Level (270)	4.9638	0.9949	77.59	0	Water Level (in)
LDP-117	Upper Core Spacer Grid to DVI Uncompensated Water Level (180)	4.9838	0.9983	11.383	0	Water Level (in)
LDP-118	Lower Core Plate to Upper Core Plate Uncompensated Water Level (270)	4.9848	0.9988	39.98	0	Water Level (in)
LDP-119	Lower Core Plate to Upper Core Support Grid Uncompensated Water Level (180)	4.988	0.9996	40.26	0	Water Level (in)
LDP-127	Rx Wide Range Uncompensated Water Level	4.999	1.0007	98.97	0	Water Level (in)
LDP-138	Upper Core Spacer Grid to Bottom of Upper Support Plate Uncompensated Water Level (180)	4.9639	0.9946	39.3	0	Water Level (in)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
LDP-139	Top of Lower Core Plate to Upper Core Spacer Grid Uncompensated Water Level	4.9837	0.9982	24.166	0	Water Level (in)
LDP-140	Bottom of Rx to Bottom of Flow Holes (180) Uncompensated Water Level	4.9981	1.0014	78.02	0	Water Level (in)
LDP-141	Upper Core Plate to Lower Support Plate Uncompensated Water Level	4.9843	0.9994	20.135	0	Water Level (in)
LDP-201	CL-1 Uncompensated Water Level	4.9961	1.0002	2.496	0	Water Level (in)
LDP-202	CL-2 Uncompensated Water Level	4.9924	0.9994	2.223	0	Water Level (in)
LDP-203	CL-3 Uncompensated Water Level	4.9923	0.9994	2.532	0	Water Level (in)
LDP-204	CL-4 Uncompensated Water Level	4.9594	0.9927	2.47	0	Water Level (in)
LDP-205	HL-1 Uncompensated Water Level	4.9663	0.9945	4.085	0	Water Level (in)
LDP-206	HL-2 Uncompensated Water Level	4.9653	0.9944	4.013	0	Water Level (in)
LDP-207	SG-1 to HL-1 Elbow Plenum Uncompensated Water Level	4.9779	0.9972	17.91	0	Water Level (in)
LDP-208	SG-2 to HL-2 Elbow Plenum Uncompensated Water Level	4.9825	0.9969	19.247	0	Water Level (in)
LDP-209	SG-1 to HL-1 Plenum Uncompensated Water Level	4.9954	1.0002	10.939	0	Water Level (in)
LDP-210	SG-2 to CL-4 Plenum Uncompensated Water Level	4.9677	0.9943	16.988	0	Water Level (in)
LDP-211	SG-1 to CL-3 Plenum Uncompensated Water Level	4.9613	0.993	16.793	0	Water Level (in)
LDP-212	SG-2 to CL-2 Plenum Uncompensated Water Level	4.9836	0.9982	16.772	0	Water Level (in)
LDP-213	SG-1 to CL-1 Plenum Uncompensated Water Level	4.9864	0.9978	16.747	0	Water Level (in)
LDP-214	SG-2 to HL-2 Plenum Uncompensated Water Level	4.9953	1.0002	11.571	0	Water Level (in)
LDP-215	SG-1 Long Tube to HL Uncompensated Water Level	4.99	0.9992	102.06	0	Water Level (in)
LDP-216	SG-2 Short Tube to HL Uncompensated Water Level	4.9717	0.9955	95.55	0	Water Level (in)
LDP-217	SG-1 Short Tube to HL Uncompensated Water Level	4.9618	0.9932	96.25	0	Water Level (in)
LDP-218	SG-2 Long Tube to HL Uncompensated Water Level	4.9658	0.9943	103.14	0	Water Level (in)
LDP-219	SG-1 Long Tube to CL Uncompensated Water Level	4.9867	0.9992	102.45	0	Water Level (in)
LDP-220	SG-2 Short Tube to CL Uncompensated Water Level	4.9786	0.9971	96	0	Water Level (in)
LDP-221	SG-1 Short Tube to CL Uncompensated Water Level	4.985	0.9986	95.98	0	Water Level (in)
LDP-222	SG-2 Long Tube to CL Uncompensated Water Level	4.9628	0.9947	102.71	0	Water Level (in)
LDP-301	SG-1 WR Uncompensated Water Level	5.0022	1.0006	119.25	0	Water Level (in)
LDP-302	SG-2 WR Uncompensated Water Level	4.9995	1.0003	119.02	0	Water Level (in)
LDP-303	SG-1 NR Uncompensated Water Level	4.9699	0.9934	31.81	0	Water Level (in)
LDP-304	SG-2 NR Uncompensated Water Level	4.9748	0.995	31.52	0	Water Level (in)
LDP-401	ACC-1 Uncompensated Water Level	4.987	0.9951	38.26	0	Water Level (in)
LDP-402	ACC-2 Uncompensated Water Level	5.166	1.0332	38.34	0	Water Level (in)
LDP-501	CMT-1 NR Uncompensated Water Level (Bottom)	4.9834	0.9986	5.31	0	Water Level (in)
LDP-502	CMT-2 WR Uncompensated Water Level	5.1958	1.0396	57.5	0	Water Level (in)
LDP-503	CMT-1 NR Uncompensated Water Level (Middle)	4.984	0.9979	46.77	0	Water Level (in)
LDP-504	CMT-2 NR Uncompensated Water Level (Bottom)	4.9793	0.9972	5.226	0	Water Level (in)
LDP-505	CMT-1 NR Uncompensated Water Level (Top)	4.994	1	5.486	0	Water Level (in)
LDP-506	CMT-2 NR Uncompensated Water Level (Middle)	4.9823	0.9975	46.96	0	Water Level (in)
LDP-507	CMT-1 WR Uncompensated Water Level	5.1887	1.0383	57.5	0	Water Level (in)
LDP-508	CMT-2 NR Uncompensated Water Level (Top)	4.9913	0.9994	5.309	0	Water Level (in)
LDP-509	CL-3 to CMT-1 Balance Line Uncompensated Water Level	4.9772	0.9968	78.84	0	Water Level (in)
LDP-510	CL-1 to CMT-2 Balance Line Uncompensated Water Level	4.9653	0.9942	78.28	0	Water Level (in)
LDP-601	PZR WR Uncompensated Water Level	5.0006	0.9991	140.47	0	Water Level (in)
LDP-602	PZR Surge Line Uncompensated Water Level	4.9777	0.997	47.5	0	Water Level (in)
LDP-605	PZR Upper Surge Line Pipe Uncompensated Water Level	4.9735	0.9963	3.533	0	Water Level (in)
LDP-606	PZR Surge Line Pipe Level at PZR Inlet Uncompensated Water Level	4.9724	0.9958	18.696	0	Water Level (in)
LDP-607	PZR Middle Surge Line Pipe Uncompensated Water Level	4.9737	0.996	4.127	0	Water Level (in)
LDP-608	PZR Lower Surge Line Pipe Uncompensated Water Level	4.9731	0.9964	3.82	0	Water Level (in)
LDP-609	PZR Surge Line Pipe Uncompensated Water Level at HL-2	4.996	1.0011	14.717	0	Water Level (in)
LDP-610	ADS1-3 Separator Uncompensated Water Level	5.193	1.0399	45.24	0	Water Level (in)
LDP-611	ADS4-1 Separator Uncompensated Water Level	5.1628	1.0342	55.97	0	Water Level (in)
LDP-612	ADS4-2 Separator Uncompensated Water Level	5.1859	1.0386	56.6	0	Water Level (in)
LDP-701	IRWST Uncompensated Water Level	5.0202	1.0048	115.8	0	Water Level (in)
LDP-801	PRHR HX Inlet Head Uncompensated Water Level	4.9945	1.0013	6.971	0	Water Level (in)
LDP-802	PRHR HX WR Uncompensated Water Level	4.9871	0.9998	57.08	0	Water Level (in)
LDP-901	Primary Sump Uncompensated Water Level	5.0016	1.0015	104.36	0	Water Level (in)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
LDP-902	Secondary Sump Uncompensated Water Level	5.0018	1.0007	102.56	0	Water Level (in)
LDP-903	CRT Uncompensated Water Level	5.1669	1.0346	32.358	0	Water Level (in)
LDP-905	Break Separator Uncompensated Water Level	5.1788	1.0378	130.68	0	Water Level (in)
LT-120	Rx Vessel Capacitance Probe Water Level	5.0053	1.0042	99	50	Water Level (in)
PT-001	MFP Discharge Pressure	5.0658	1.0121	600	0	Pressure (psig)
PT-002	MS Header Pressure	4.9759	0.9962	500	0	Pressure (psig)
PT-003	Lab Barometer	4.9656	0.9944	20	10	Pressure (psia)
PT-004	Temp Steam Pressure for FVM-002	5.0031	1.002	400	0	Pressure (psig)
PT-009	SG-1 PORV Blowdown Pressure	4.9816	0.9983	300	0	Pressure (psig)
PT-010	SG-2 PORV Blowdown Pressure	4.9924	1.0004	300	0	Pressure (psig)
PT-101	CL-1 Pressure at Rx Flange	4.9877	0.9986	500	0	Pressure (psig)
PT-102	CL-2 Pressure at Rx Flange	4.9706	0.9958	10	0	Pressure (psig)
PT-103	CL-3 Pressure at Rx Flange	4.9646	0.9946	10	0	Pressure (psig)
PT-104	CL-4 Pressure at Rx Flange	4.9882	0.9988	500	0	Pressure (psig)
PT-107	Rx Upper Head Pressure	5.0478	1.0096	500	0	Pressure (psig)
PT-108	Bottom of Rx Pressure	4.9637	0.9938	500	0	Pressure (psig)
PT-109	DVI-1 Pressure at Rx Flange	4.9874	0.998	500	0	Pressure (psig)
PT-110	DVI-2 Pressure at Rx Flange	4.9825	0.9984	10	0	Pressure (psig)
PT-111	Rx Annular Pressure at Flow Bypass Holes	4.9886	0.9982	500	0	Pressure (psig)
PT-112	Rx Annular Pressure at Bottom of Rx	4.977	0.9958	10	0	Pressure (psig)
PT-113	Rx Pressure Below Mid-Core Spacer Grid	4.9616	0.9921	500	0	Pressure (psig)
PT-201	SG-1 Long Tube Pressure (Top)	4.9935	1.0008	500	0	Pressure (psig)
PT-202	HL-2 Pressure at SG-2 Flange	4.9841	0.9978	500	0	Pressure (psig)
PT-203	CL Break Pressure at Break Valve	4.988	0.9982	500	0	Pressure (psig)
PT-204	SG-2 Long Tube Pressure (Top)	4.9974	1.0005	500	0	Pressure (psig)
PT-205	HL-1 Pressure at SG-1 Flange	4.9842	0.9993	10	0	Pressure (psig)
PT-206	HL Break Pressure at Break Valve	4.9869	0.9982	500	0	Pressure (psig)
PT-301	SG-1 Pressure	5.0617	1.0123	500	0	Pressure (psig)
PT-302	SG-2 Pressure	5.1023	1.0219	500	0	Pressure (psig)
PT-401	ACC-1 Pressure	4.9908	0.9993	300	0	Pressure (psig)
PT-402	ACC-2 Pressure	4.9802	0.9975	300	0	Pressure (psig)
PT-501	CMT-1 Pressure	4.982	0.9979	300	0	Pressure (psig)
PT-502	CMT-2 Pressure	4.9869	0.998	500	0	Pressure (psig)
PT-602	PZR NR Pressure	4.9747	0.9988	400	300	Pressure (psig)
PT-603	PZR NR Pressure	4.9616	0.9944	10	0	Pressure (psig)
PT-604	PZR WR Pressure	4.9794	0.9942	500	0	Pressure (psig)
PT-605	ADS1-3 Separator Pressure	4.9725	0.9966	100	0	Pressure (psig)
PT-606	IRWST Sparger Line Pressure	4.9653	0.995	100	0	Pressure (psig)
PT-610	ADS4-2 Separator Pressure	4.9845	0.9983	10	0	Pressure (psig)
PT-611	ADS4-1 Separator Pressure	4.9806	0.9977	10	0	Pressure (psig)
PT-701	IRWST Pressure	5.0436	1.0087	15	0	Pressure (psig)
PT-801	CVSP Discharge Pressure	4.9909	0.9993	500	0	Pressure (psig)
PT-802	RNSP Discharge Pressure	4.9768	0.9962	250	0	Pressure (psig)
PT-901	Primary Sump Pressure	4.9659	0.9947	10	0	Pressure (psig)
PT-902	BAMS Header Pressure	4.9988	1.0013	16	0	Pressure (psig)
PT-905	Break Separator Pressure	5.0265	1.0067	20	0	Pressure (psig)
TF-005	Lab Ambient Temperature at Ground Level	1000	0	1000	0	Fluid Temperature (F)
TF-006	Lab Ambient Temperature at Second Level	1000	0	1000	0	Fluid Temperature (F)
TF-007	Lab Ambient Temperature at Third Level	1000	0	1000	0	Fluid Temperature (F)
TF-009	SG-1 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-010	SG-2 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-101	CL-3 Temperature (SC-101)	450	40	450	40	Fluid Temperature (F)
TF-101-1.3D-2	CL-1 Downcomer Temperature at 1.3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-1	CL-1 Downcomer Temperature at 2D, 120 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-2	CL-1 Downcomer Temperature at 2D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-101-2D-3	CL-1 Downcomer Temperature at 2D, 150 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-1	CL-1 Downcomer Temperature at 3D, 104 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-2	CL-1 Downcomer Temperature at 3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-3	CL-1 Downcomer Temperature at 3D, 166 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-1	CL-1 Downcomer Temperature at 4D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-2	CL-1 Downcomer Temperature at 4D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-1	CL-1 Downcomer Temperature at 8D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-2	CL-1 Downcomer Temperature at 8D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102	CL-4 Temperature (SC-102)	450	40	450	40	Fluid Temperature (F)
TF-102-1.3D-2	CL-2 Downcomer Temperature at 1.3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-1	CL-2 Downcomer Temperature at 2D, 210 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-2	CL-2 Downcomer Temperature at 2D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-3	CL-2 Downcomer Temperature at 2D, 240 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-1	CL-2 Downcomer Temperature at 3D, 194 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-2	CL-2 Downcomer Temperature at 3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-3	CL-2 Downcomer Temperature at 3D, 256 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-4D-2	CL-2 Downcomer Temperature at 4D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-1	CL-2 Downcomer Temperature at 8D, 180 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-2	CL-2 Downcomer Temperature at 8D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-1.3D-2	CL-3 Downcomer Temperature at 1.3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-1	CL-3 Downcomer Temperature at 2D, 30 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-2	CL-3 Downcomer Temperature at 2D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-3	CL-3 Downcomer Temperature at 2D, 60 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-1	CL-3 Downcomer Temperature at 3D, 14 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-2	CL-3 Downcomer Temperature at 3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-3	CL-3 Downcomer Temperature at 3D, 76 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-4D-2	CL-3 Downcomer Temperature at 4D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-1	CL-3 Downcomer Temperature at 8D, 0 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-2	CL-3 Downcomer Temperature at 8D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-1.3D-2	CL-4 Downcomer Temperature at 1.3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-1	CL-4 Downcomer Temperature at 2D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-2	CL-4 Downcomer Temperature at 2D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-3	CL-4 Downcomer Temperature at 2D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1	CL-4 Downcomer Temperature at 3D, 284 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1.5	CL-4 Downcomer Temperature at 3D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2	CL-4 Downcomer Temperature at 3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2.5	CL-4 Downcomer Temperature at 3D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-3	CL-4 Downcomer Temperature at 3D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1	CL-4 Downcomer Temperature at 4D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.3	CL-4 Downcomer Temperature at 4D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.6	CL-4 Downcomer Temperature at 4D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2	CL-4 Downcomer Temperature at 4D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.3	CL-4 Downcomer Temperature at 4D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.6	CL-4 Downcomer Temperature at 4D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1	CL-4 Downcomer Temperature at 8D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.3	CL-4 Downcomer Temperature at 8D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.6	CL-4 Downcomer Temperature at 8D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2	CL-4 Downcomer Temperature at 8D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.3	CL-4 Downcomer Temperature at 8D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.6	CL-4 Downcomer Temperature at 8D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-105	CL-1 Temperature (SC-105)	450	40	450	40	Fluid Temperature (F)
TF-106	CL-2 Temperature (SC-106)	450	40	450	40	Fluid Temperature (F)
TF-107	CL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-108	CL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-113	DVI-1/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-114	DVI-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-115	DVI-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-116	DVI-2/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-118	Lower Rx Vessel Layer Y-Y at 30 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-120	Top of Rx at 8.5 inches & 350 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-125	Lower Rx Vessel Layer A-A at 225 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-127	Lower Rx Vessel Layer A-A at 315 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-128	Lower Rx Vessel Layer C-C at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-129	Lower Rx Vessel Layer C-C at 32 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-130	Lower Rx Vessel Layer G-G at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-131	Lower Rx Vessel Layer G-G at 11.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-132	Upper Rx Vessel Layer F-F at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-133	Upper Rx Vessel Layer F-F at 8 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-134	Upper Rx Vessel Layer E-E at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-135	Upper Rx Vessel Layer E-E at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-140	HL-2 Temperature at Rx Flange (SC-140)	450	40	450	40	Fluid Temperature (F)
TF-141	HL-1 Temperature at Rx Flange (SC-141)	450	40	450	40	Fluid Temperature (F)
TF-142	HL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-143	HL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-147	Upper Rx Vessel Layer I-I at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-148	Upper Rx Vessel Layer I-I at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-149	Upper Rx Vessel Layer H-H at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-150	Upper Rx Vessel Layer H-H at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-151	Upper Rx Vessel Layer E-E at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-152	Upper Rx Vessel Layer E-E at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-153	Upper Rx Vessel Layer F-F at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-154	Upper Rx Vessel Layer F-F at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-155	Lower Rx Vessel Layer G-G at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-156	Lower Rx Vessel Layer G-G at 191.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-157	Lower Rx Vessel Layer C-C at 212 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-158	Lower Rx Vessel Layer C-C at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-162	Lower Rx Vessel Layer A-A at 45 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-163	Lower Rx Vessel Layer A-A at 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-164	Upper Rx Vessel Layer H-H at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-165	Upper Rx Vessel Layer H-H at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-166	Upper Rx Vessel Layer I-I at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-167	Rx Heater Rod B2-319 at 40.13 inches	1000	0	1000	0	Fluid Temperature (F)
TF-168	Upper Rx Vessel Layer K-K at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-169	Upper Rx Vessel Layer M-M at 90 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-170	Upper Rx Vessel Layer M-M at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-171	Top of Rx Down to within 0.50 inches of Upper Support Plate Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-172	Lower Rx Vessel Layer AA-AA at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-173	Lower Rx Vessel Layer AA-AA at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-201	CL-1 at RCP-1 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-202	CL-2 at RCP-2 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-203	CL-3 at RCP-3 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-204	CL-4 at RCP-4 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-205	HL-1 Temperature at SG-1 Head (SC-205)	450	40	450	40	Fluid Temperature (F)
TF-206	HL-2 Temperature at SG-2 Head (SC-206)	450	40	450	40	Fluid Temperature (F)
TF-207	SG-1 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-208	SG-2 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-209	SG-1 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-210	SG-2 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-211	SG-1 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-212	SG-2 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-213	SG-1 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-214	SG-2 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-215	SG-1 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-216	SG-2 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-217	SG-1 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-218	SG-2 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-221	CL-3 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-222	CL-4 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-223	CL-3 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-224	CL-4 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-225	CL-3 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-226	CL-4 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-227	CL-3 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-228	CL-4 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-229	CL-3 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-230	CL-4 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-231	CL-3 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-232	CL-4 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-1	CL-1 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-2	CL-1 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-3	CL-1 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-1	CL-2 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-2	CL-2 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-3	CL-2 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-1	CL-3 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-2	CL-3 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-3	CL-3 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-1	CL-4 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-2	CL-4 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-3	CL-4 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-255	CL-1 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-256	CL-2 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-257	CL-3 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-258	CL-4 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-301	SG-1 Steam Temperature (SC-301)	450	40	450	40	Fluid Temperature (F)
TF-305	SG-1 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-306	SG-2 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-307	SG-1 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-308	SG-2 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-310	SG-2 Steam Temperature (SC-310)	450	40	450	40	Fluid Temperature (F)
TF-311	SG-1 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-312	SG-2 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-401	ACC-1 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-402	ACC-2 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-403	ACC-1 N2 Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-404	ACC-2 N2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-405	ACC-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-406	ACC-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-501	CMT-1 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-502	CMT-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-503	CMT-1 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-504	CMT-2 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-505	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-506	CMT-2 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-507	CMT-1 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-508	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-509	CMT-1 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-510	CMT-2 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-511	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-512	CMT-2 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-513	CMT-1 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-514	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-515	CMT-1 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-516	CMT-2 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-517	CMT-1 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-518	CMT-2 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-519	CMT-1 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-520	CMT-2 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-521	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-522	CMT-2 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-523	CMT-1 Long T/C Rod at 49.05 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-524	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-525	CMT-1 at 1/2 Upper-Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-526	CMT-2 SPARGER 213 TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-527	CMT-1 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-528	CMT 213 HEAD TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-529	CMT-1 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-530	CMT-2 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-531	CMT-1 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-532	CMT-2 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-533	CMT-1 CL Balance Line at CL-3 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-535	CMT-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-536	CMT-2 CL Balance Line at CL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-537	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-538	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-539	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-540	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-541	CMT-1 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-542	CMT-2 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-543	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-544	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-546	CMT-2 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-547	CMT-1 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-548	CMT-2 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-549	CMT-1 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-550	CMT-2 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-551	CMT-1 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-552	CMT-2 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-553	CMT-1 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-554	CMT-2 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-555	CMT-1 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-556	CMT-2 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-557	CMT-1 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-558	CMT-2 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-559	CMT-1 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-560	CMT-2 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-561	CMT-1 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-562	CMT-2 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-563	CMT-1 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-564	CMT-2 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-601	PZR Surge Line at PZR Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-602	ADS1-3 Common Line at PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-603	PZR Surge Line at HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-605	PZR Water Space Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-608	PZR Temperature (SC-608)	450	40	450	40	Fluid Temperature (F)
TF-609	ADS4-1 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-610	ADS4-2 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-614	PZR Steam Vent Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-615	ADS1-3 Common Line From PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-616	ADS1-3 Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-617	ADS1-3 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-618	ADS4-2 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-619	ADS4-1 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-620	ADS4-2 Inlet From HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-621	ADS4-1 Inlet From HL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-622	ADS4-2 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-623	ADS4-1 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-701	IRWST/PRHR T/C Rod at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-702	IRWST/PRHR T/C Rod at 7.98 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-703	IRWST/PRHR T/C Rod at 15.97 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-704	IRWST/PRHR T/C Rod at 25.85 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-705	IRWST/PRHR T/C Rod at 35.73 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-706	IRWST/PRHR T/C Rod at 45.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-707	IRWST/PRHR T/C Rod at 55.49 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-708	IRWST/PRHR T/C Rod at 65.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-709	IRWST/PRHR T/C Rod at 75.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-710	IRWST/PRHR T/C Rod at 86.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-711	IRWST/PRHR T/C Rod at 97.47 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-712	IRWST/PRHR T/C Rod at 108.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-713	IRWST Discharge to DVI-01 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-714	IRWST Discharge to DVI-02 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-715	IRWST Sparger T/C Rod at 8.97 inches Temperature (SC-715)	1000	0	1000	0	Fluid Temperature (F)
TF-716	IRWST Sparger T/C Rod at 36.63 inches Temperature	240	40	240	40	Fluid Temperature (F)
TF-717	IRWST Sparger T/C Rod at 66.34 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-718	IRWST Sparger T/C Rod at 98.45 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-719	IRWST Sparger Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-720	IRWST/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-721	IRWST/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-722	IRWST Steam Exhaust Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-723	IRWST/Primary Sump Overflow Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-801	CVSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-802	RNSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-803	PRHR HX Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-804	PRHR HX Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-805	PRHR HX Long Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-806	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-808	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-809	PRHR HX Long Tube at Center Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-810	PRHR HX Short Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-811	PRHR HX Long Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-812	PRHR HX Outlet Head Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-813	RNSP Discharge to DVI-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-814	RNSP Discharge to DVI-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-901	Primary Sump Inlet from Fill Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-902	Secondary Sump Temperature (SC-902)	240	40	240	40	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-903	Primary Sump Temperature (SC-903)	240	40	240	40	Fluid Temperature (F)
TF-904	Primary Sump/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-905	Primary Sump at Secondary Sump Crossover Level Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-906	Primary Sump Exhaust Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-907	Primary Sump at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-908	Break Separator Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-909	Primary Sump/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-910	CRP Discharge to Primary Sump Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-911	CRP Discharge to IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-912	Break Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-913	Break Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-914	Condensate Return Tank Temperature (SC-914)	200	40	200	40	Fluid Temperature (F)
TF-915	Break Separator 6-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-916	BAMS Header 10-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-917	BAMS Header Temperature (SC-917)	240	40	240	40	Fluid Temperature (F)
TF-918	Break Separator 8-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TH-103	Rx Heater Rod Temperature (SCTH-101-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-211	Rx Heater Rod Temperature (SCTH-103-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-305	Rx Heater Rod Temperature (SCTH-304-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-309	Rx Heater Rod Temperature (SCTH-102-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-401	Rx Heater Rod Temperature (SCTH-104-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-507	Rx Heater Rod Temperature (SCTH-314-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-601	PZR Heater Rod #1	1000	0	1000	0	Internal Rod Temperature (F)
TH-602	PZR Heater Rod #2	1000	0	1000	0	Internal Rod Temperature (F)
TH-603	PZR Heater Rod #3	1000	0	1000	0	Internal Rod Temperature (F)
TH-604	PZR Heater Rod #4	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-1	Core Thermocouple Rod D-001 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-2	Core Thermocouple Rod D-001 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-3	Core Thermocouple Rod D-001 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-4	Core Thermocouple Rod D-001 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-5	Core Thermocouple Rod D-001 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-6	Core Thermocouple Rod D-001 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-1	Core Thermocouple Rod D-303 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-2	Core Thermocouple Rod D-303 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-3	Core Thermocouple Rod D-303 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-4	Core Thermocouple Rod D-303 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-5	Core Thermocouple Rod D-303 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-6	Core Thermocouple Rod D-303 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-1	Core Thermocouple Rod E-308 at 22.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-2	Core Thermocouple Rod E-308 at 34.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-3	Core Thermocouple Rod E-308 at 46.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-4	Core Thermocouple Rod D-001 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-5	Core Thermocouple Rod D-001 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-6	Core Thermocouple Rod D-303 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-1	Core Thermocouple Rod D-313 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-2	Core Thermocouple Rod D-313 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-3	Core Thermocouple Rod D-313 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-4	Core Thermocouple Rod D-313 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-5	Core Thermocouple Rod D-313 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-6	Core Thermocouple Rod D-313 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-1	Core Thermocouple Rod F-318 at 28.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-2	Core Thermocouple Rod F-318 at 40.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-3	Core Thermocouple Rod F-318 at 51.86 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-4	Core Thermocouple Rod D-303 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-5	Core Thermocouple Rod D-313 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)

B-36

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TR-318-6	Core Thermocouple Rod D-313 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TW-104-1.5D-2	CL-4 Downcomer Wall Temperature at 1.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-2	CL-4 Downcomer Wall Temperature at 3.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-3	CL-4 Downcomer Wall Temperature at 3.5D, 345 degrees	1000	0	1000	0	Wall Temperature (F)
TW-201	SG-1 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-202	SG-2 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-203	SG-1 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-204	SG-2 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-205	SG-1 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-206	SG-2 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-208	SG-2 Long Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-209	SG-1 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-210	SG-2 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-601	ADS1-3 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-602	ADS4-2 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-603	ADS4-1 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-801	PRHR HX Long Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-802	PRHR HX Short Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-803	PRHR HX Long Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-804	PRHR HX Short Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-805	PRHR HX Short Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-806	PRHR HX Long Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-807	PRHR HX Short Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-808	PRHR HX Long Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-905	Break Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)

B-37



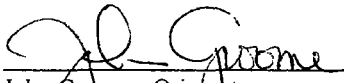
DEPARTMENT OF NUCLEAR ENGINEERING &
RADIATION HEALTH PHYSICS

**ADVANCED THERMAL HYDRAULIC
RESEARCH LABORATORY**

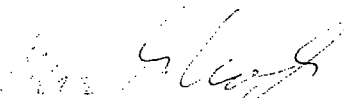
**STEAM GENERATOR U-TUBE CONDENSATION
TEST @ 285 PSIG**

NRC-COND-02

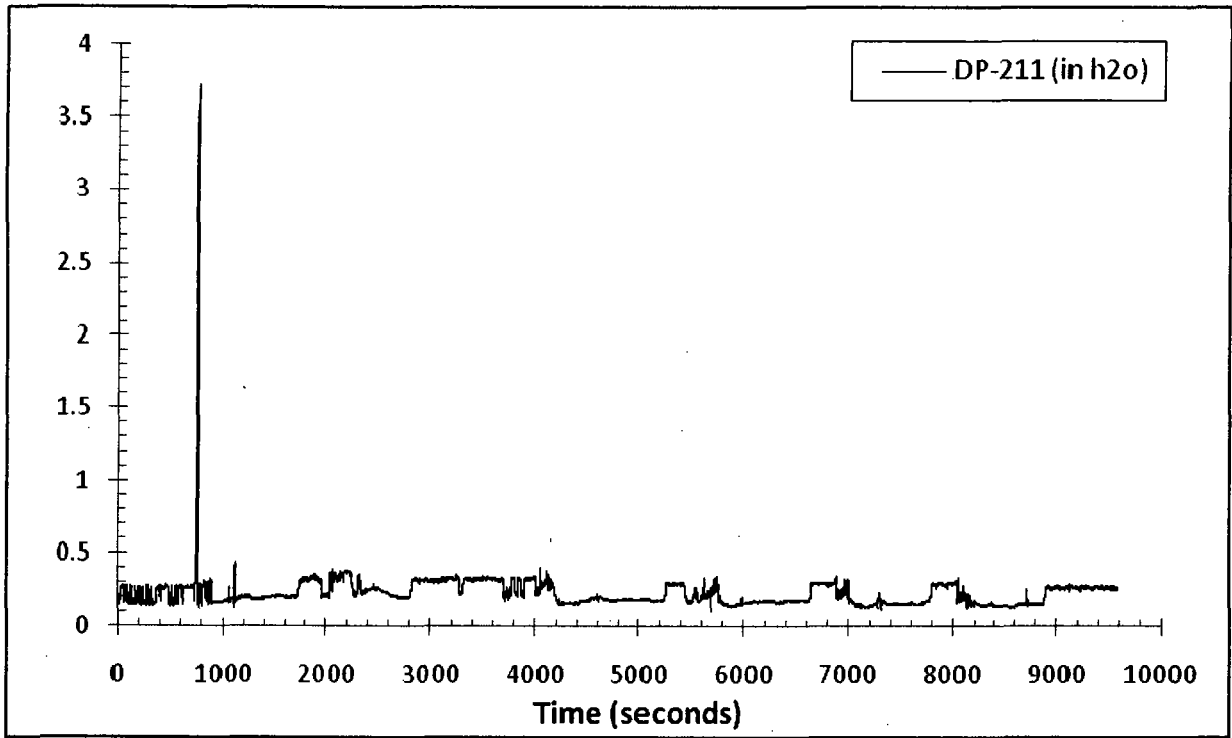
Revision 0

 12/14/05

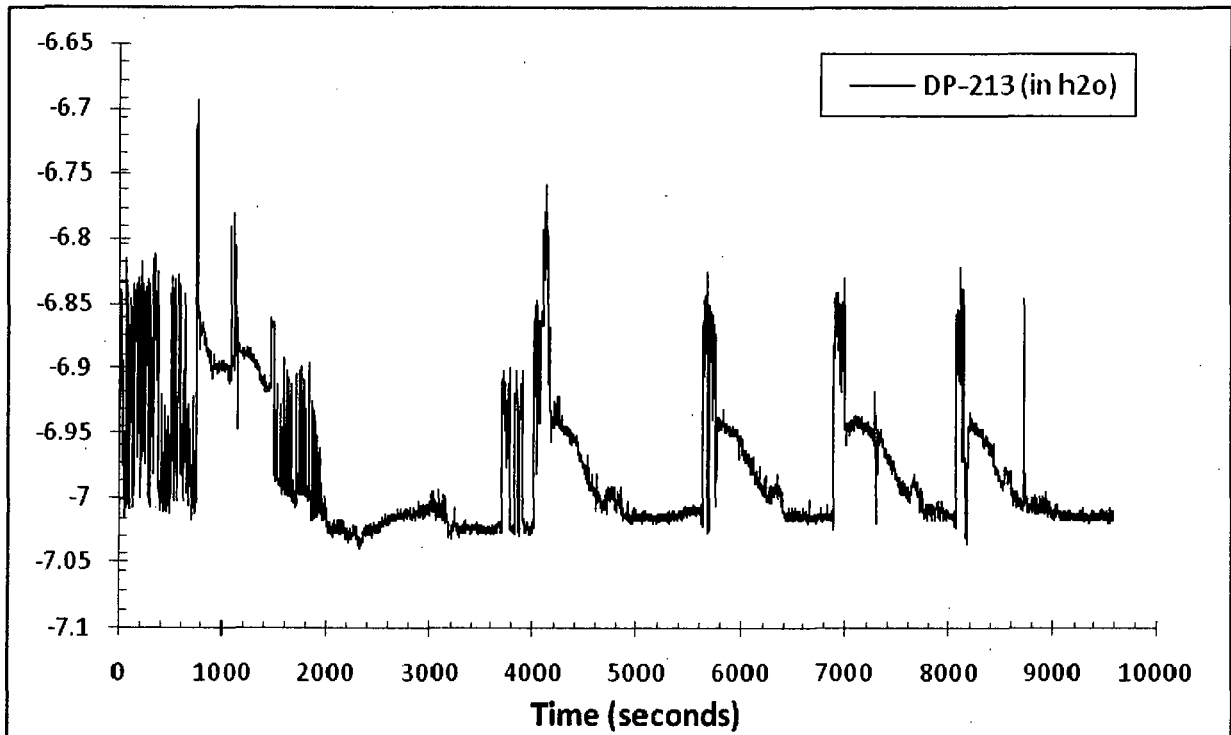
John Groome, Originator Date
Facility Operations Manager
Research Assistant

 12/14/05

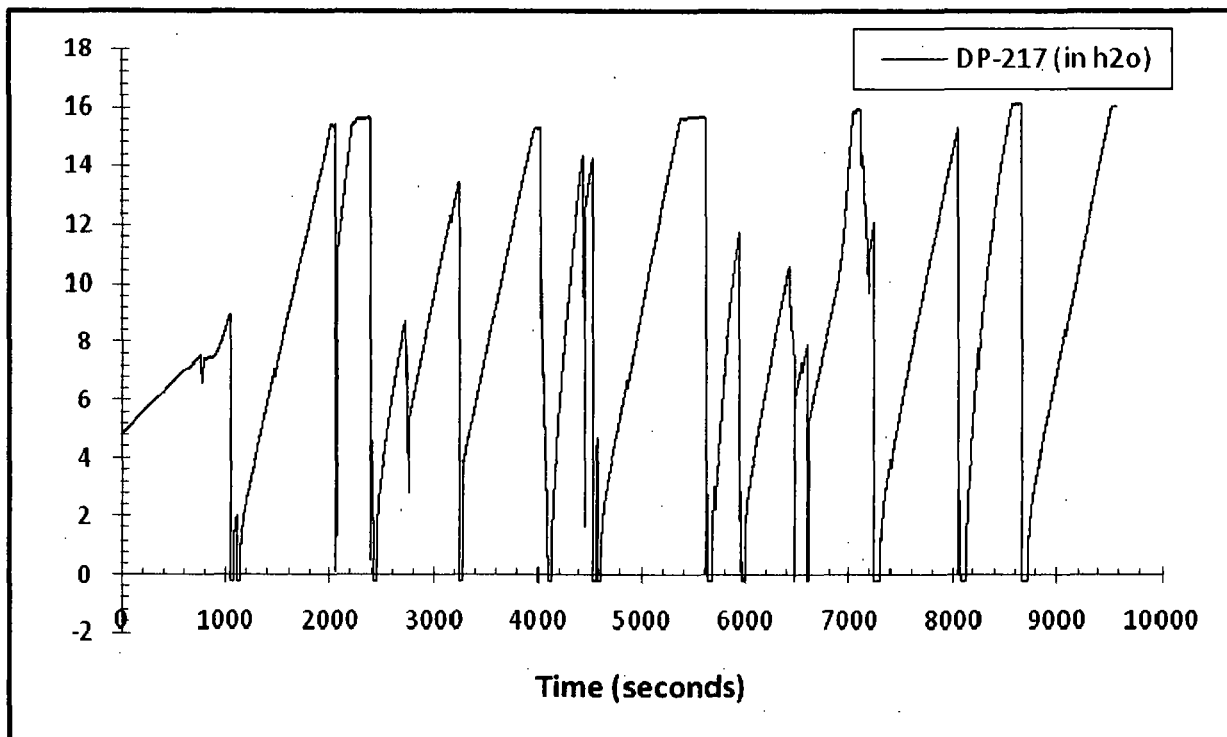
Brian Woods, Approval Date
Program Manager
Assistant Professor



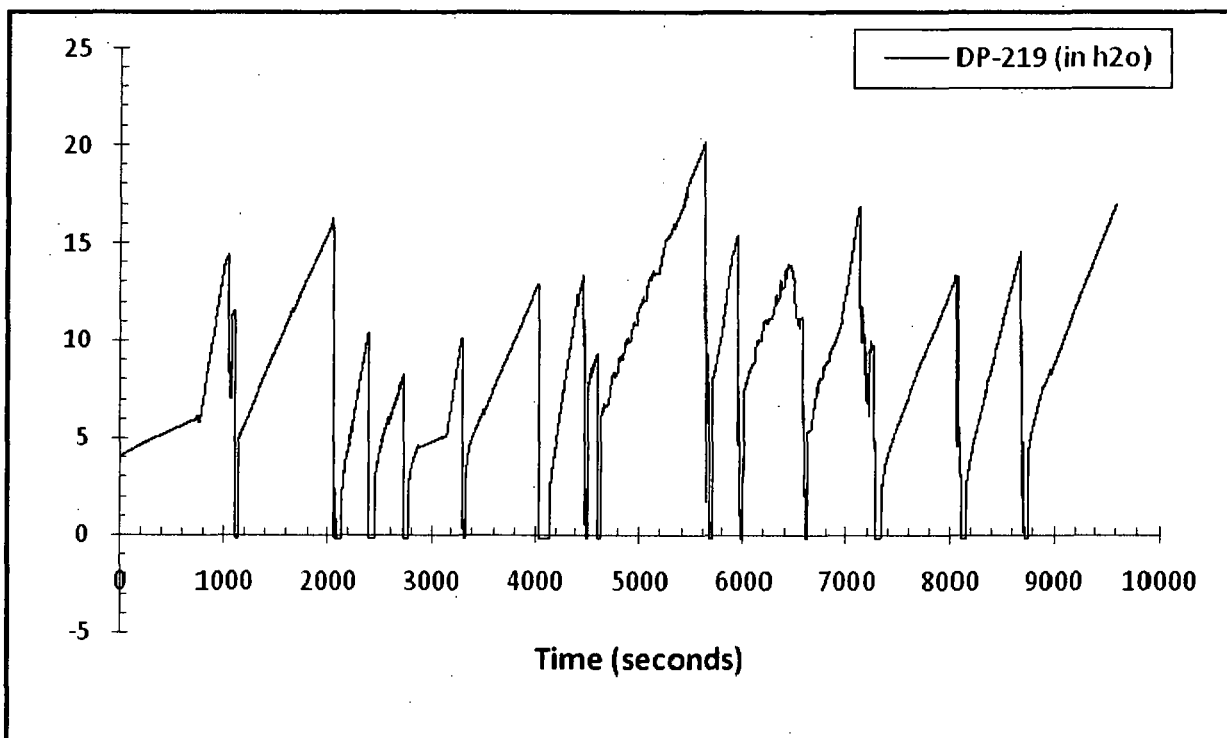
SG-1 Short Tube Entrance Losses



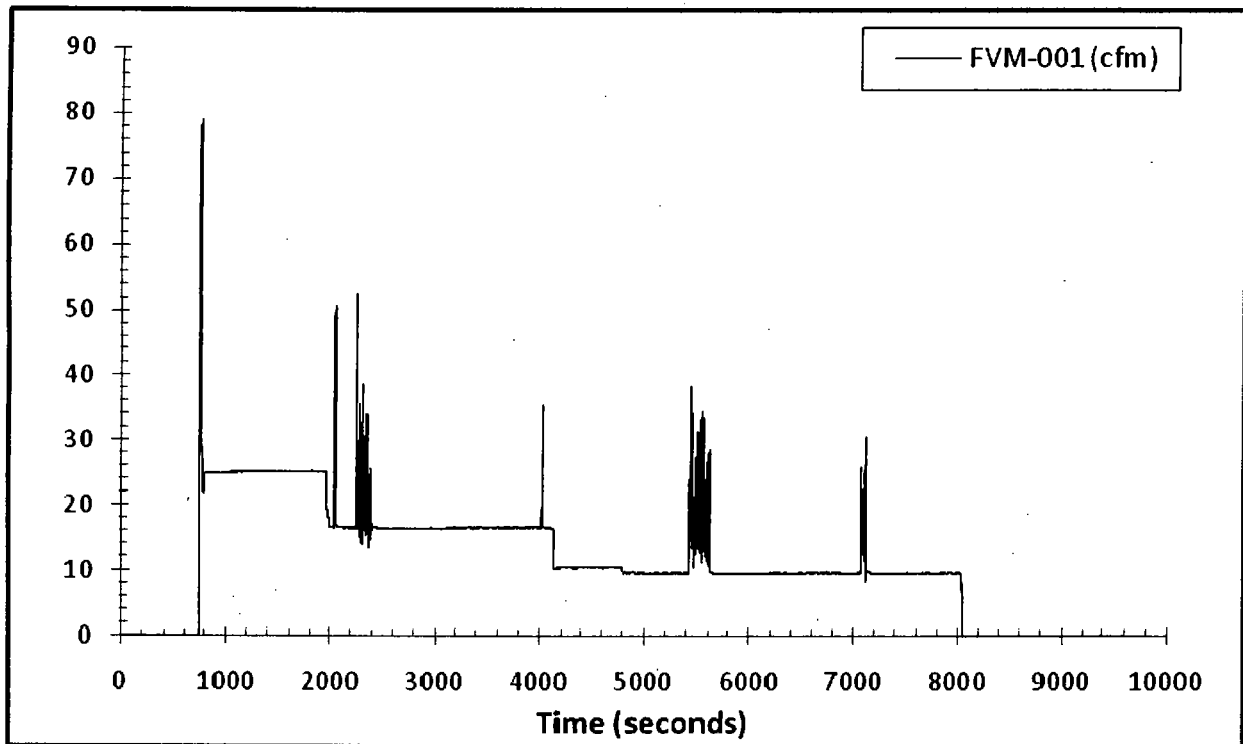
SG-1 Long Tube Exit Losses



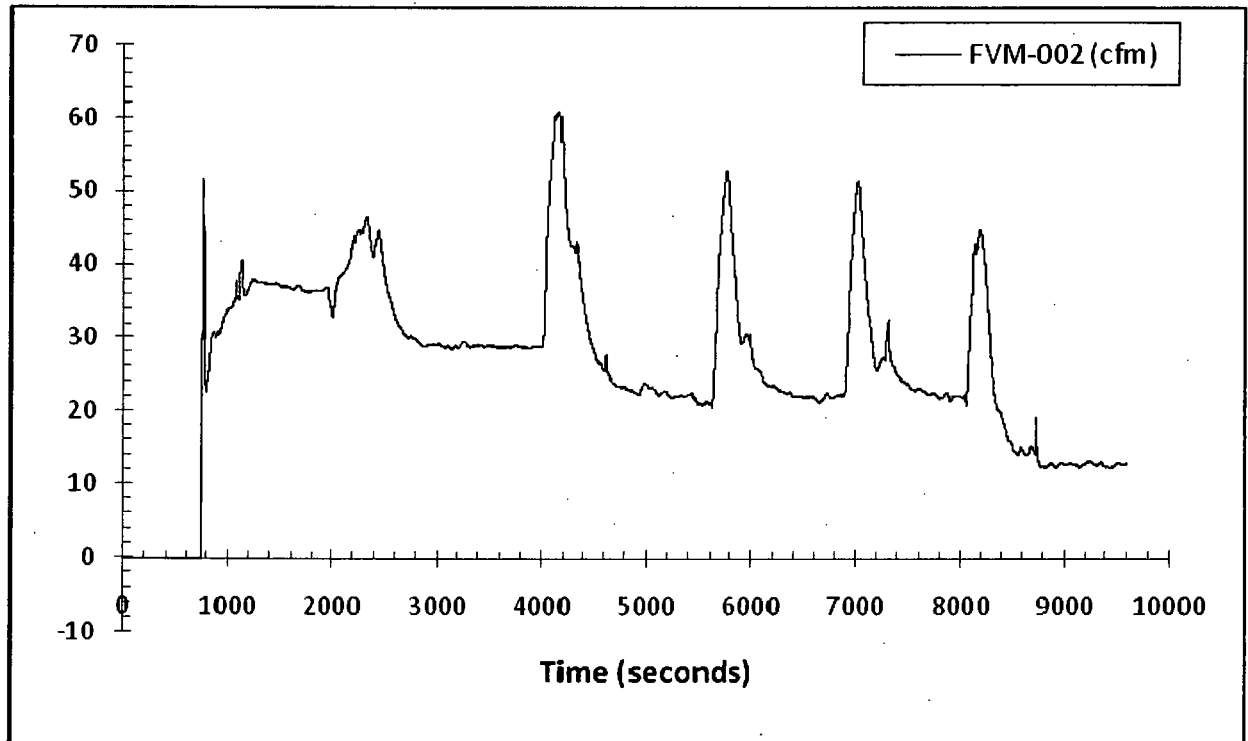
Separator Uncompensated Water Level



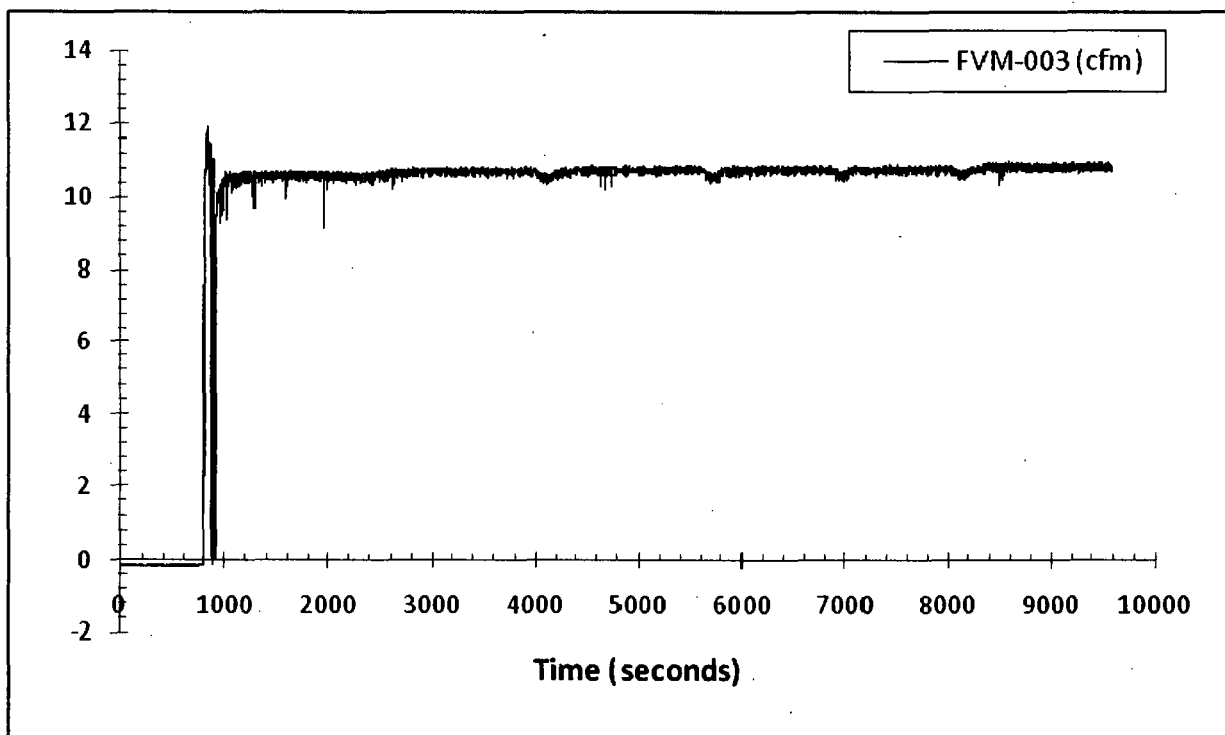
Catch Tank Uncompensated Water Level



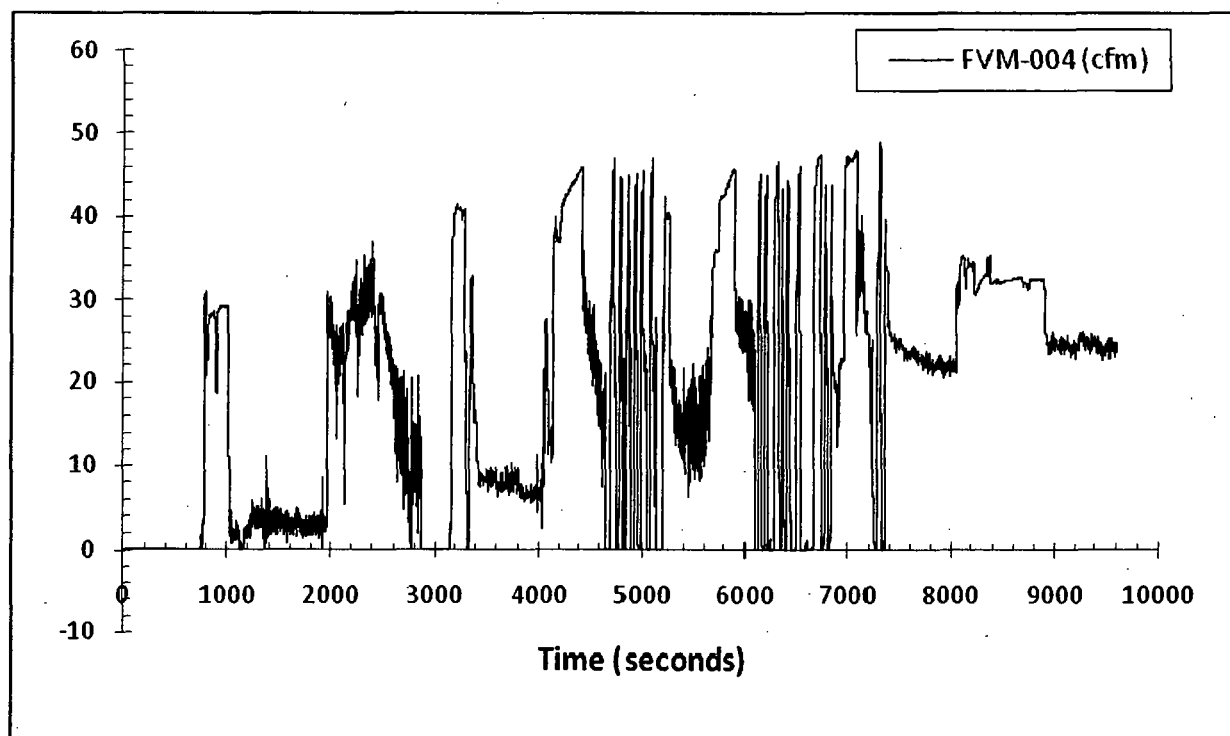
Separator Outlet Steam Flowrate



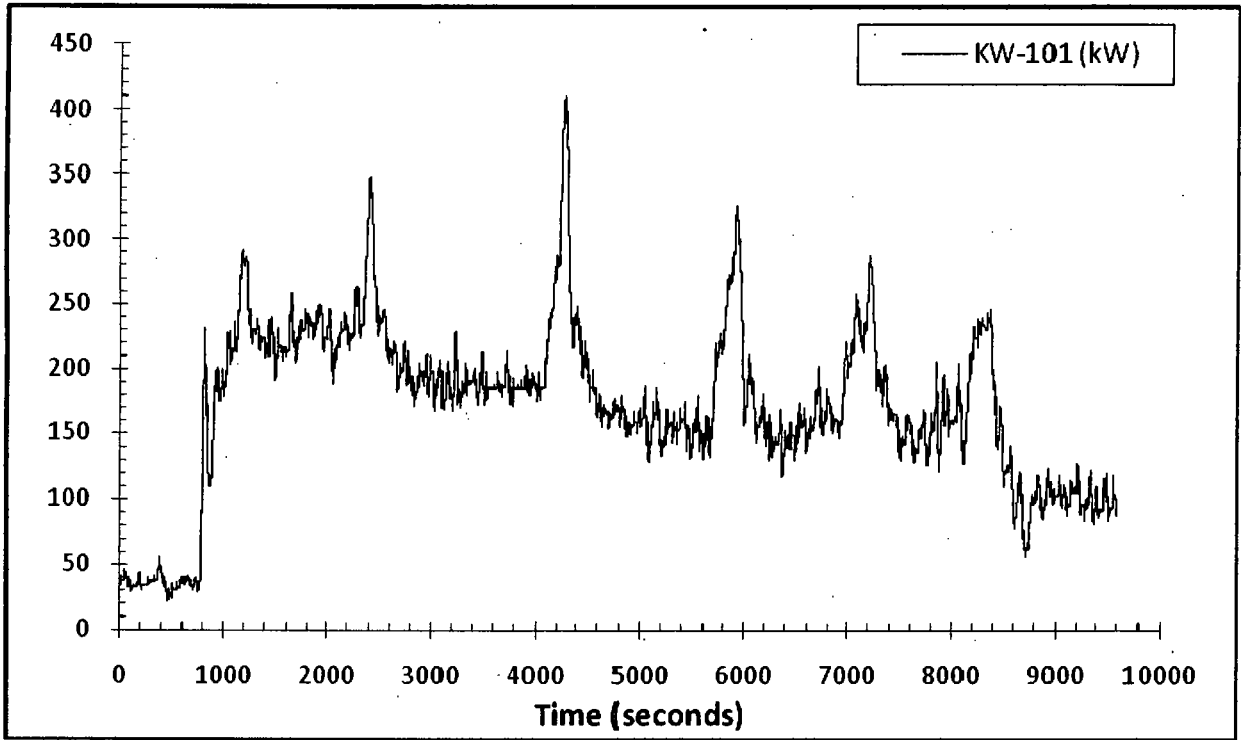
SG-2 Main Steam Flow



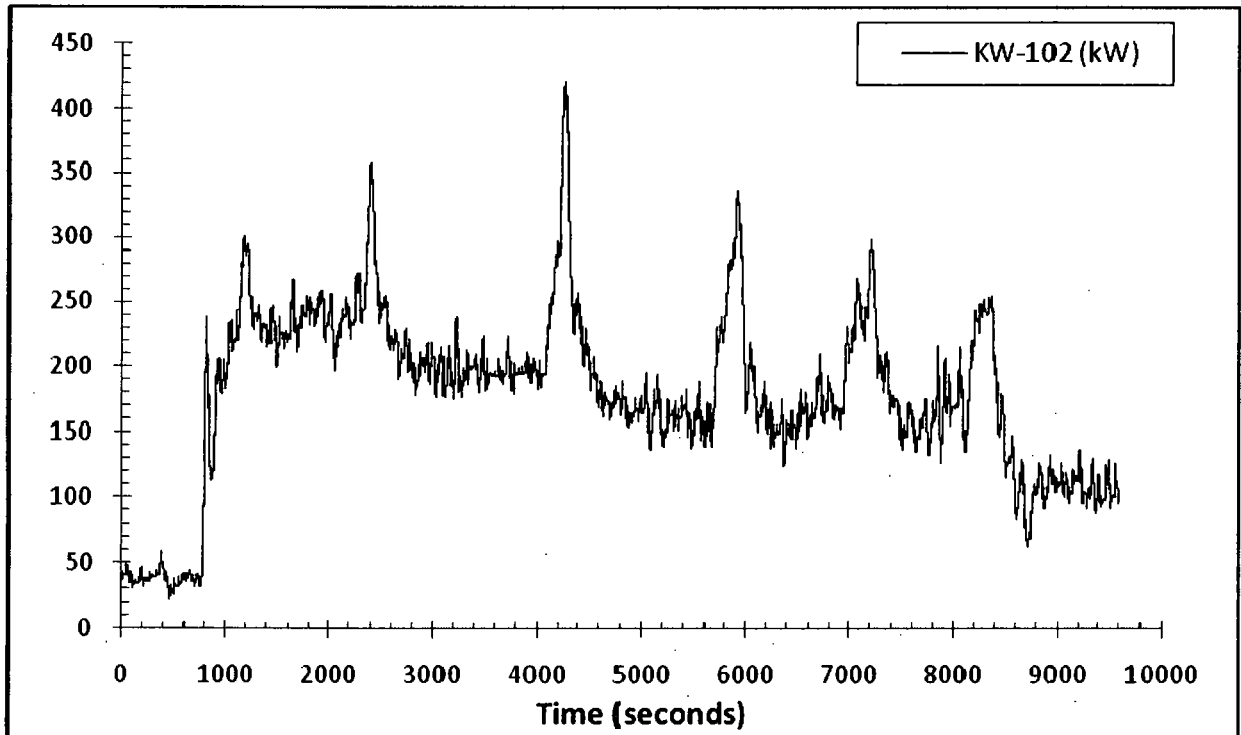
Main Steam Total Flow



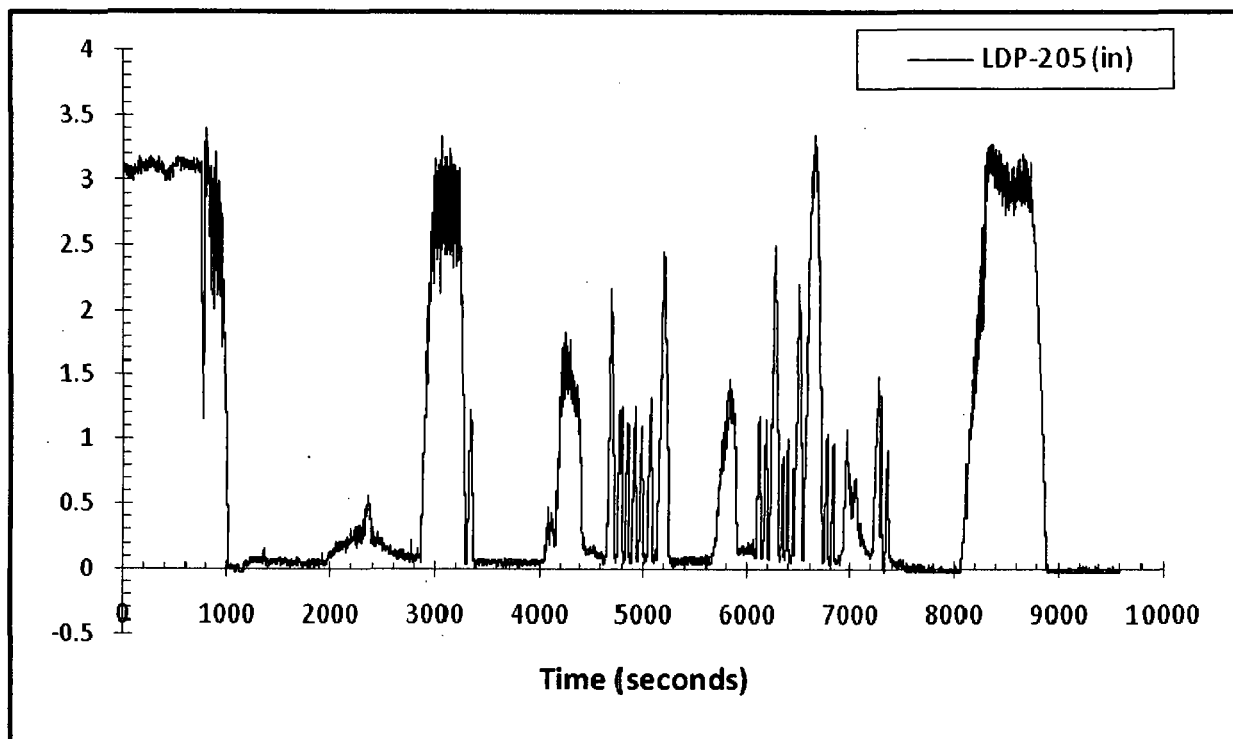
Catch Tank Steam Flow Rate



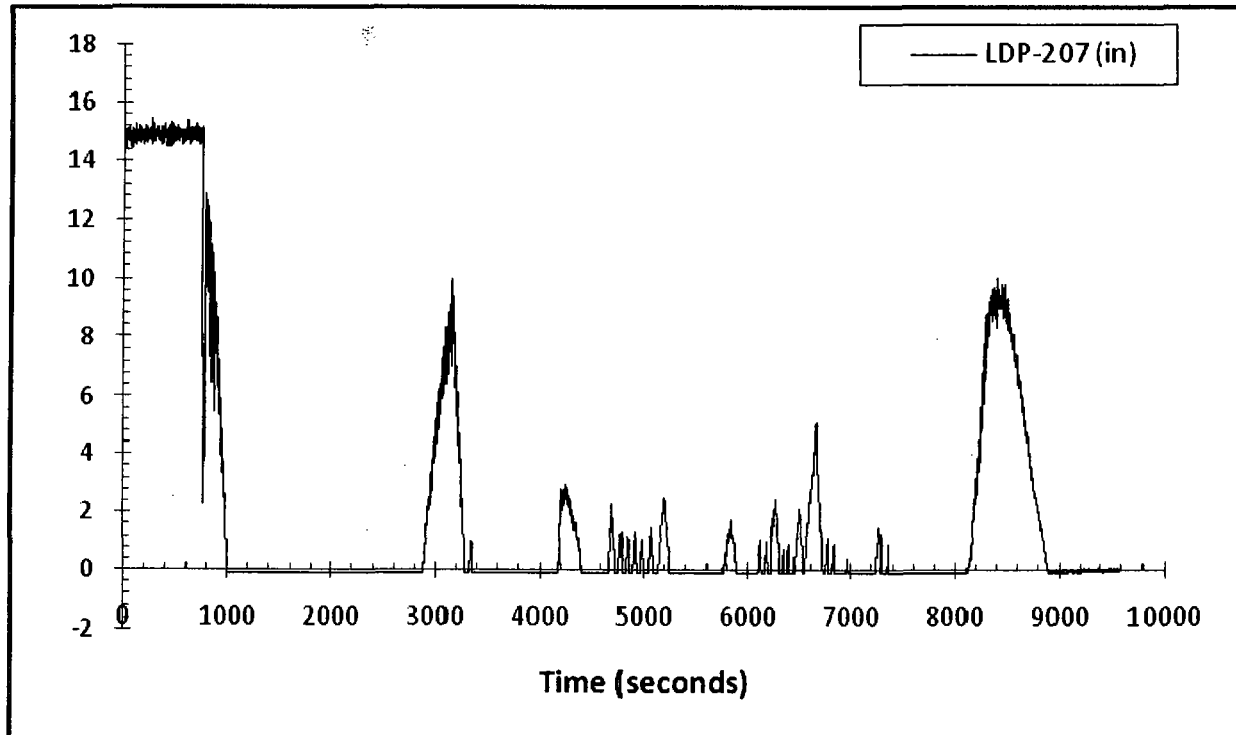
Rx Heater Group 1 Power



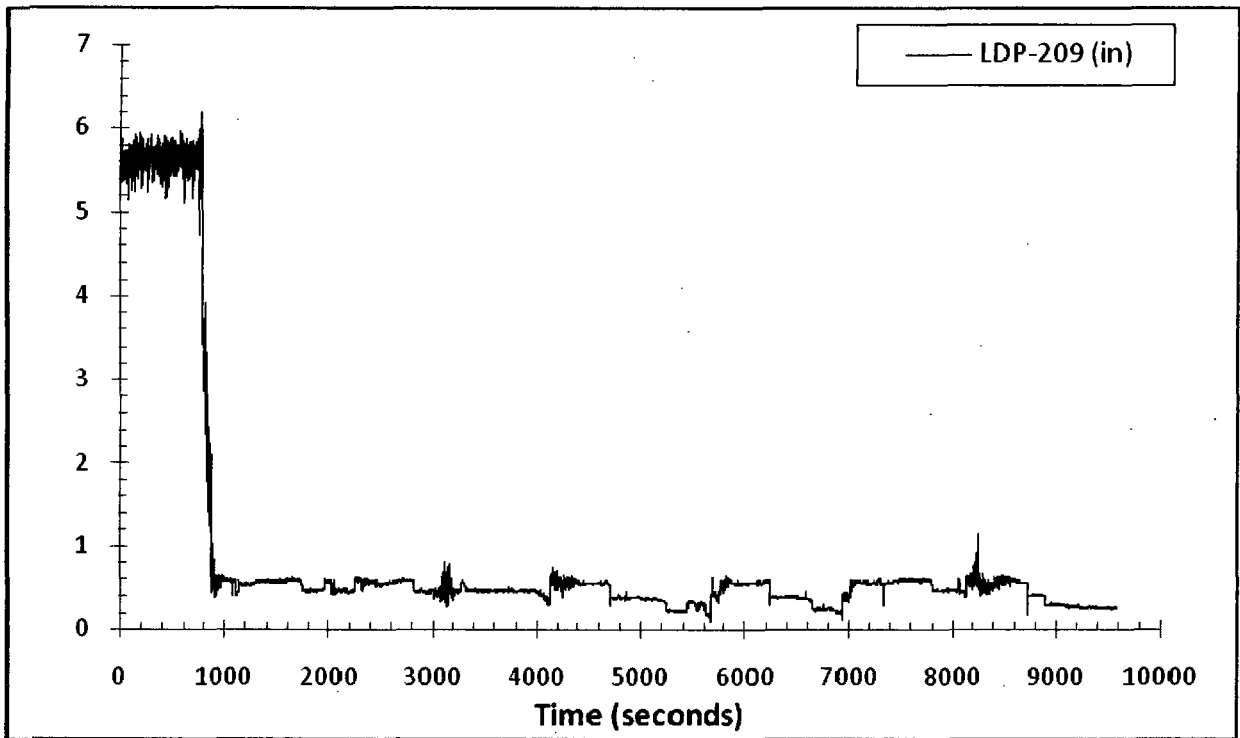
Rx Heater Group 2 Power



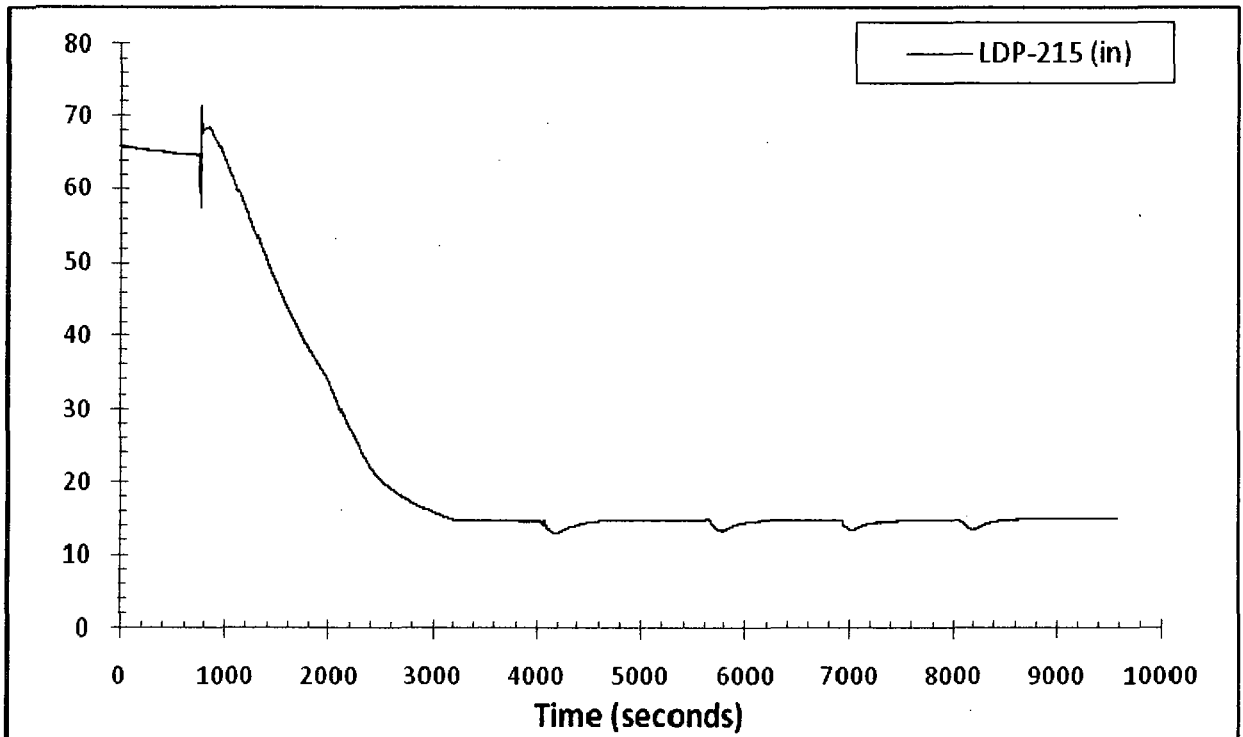
HL-1 Uncompensated Water Level



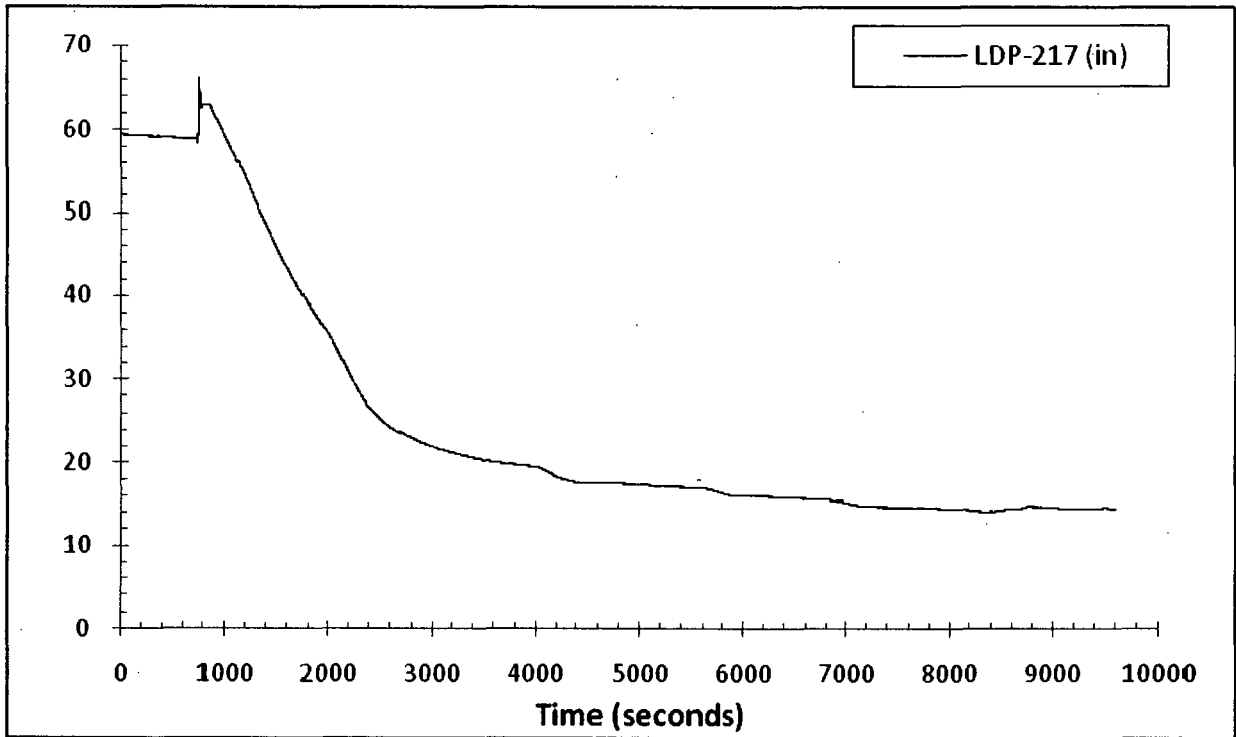
SG-1 to HL-1 Elbow Plenum Uncompensated Water Level



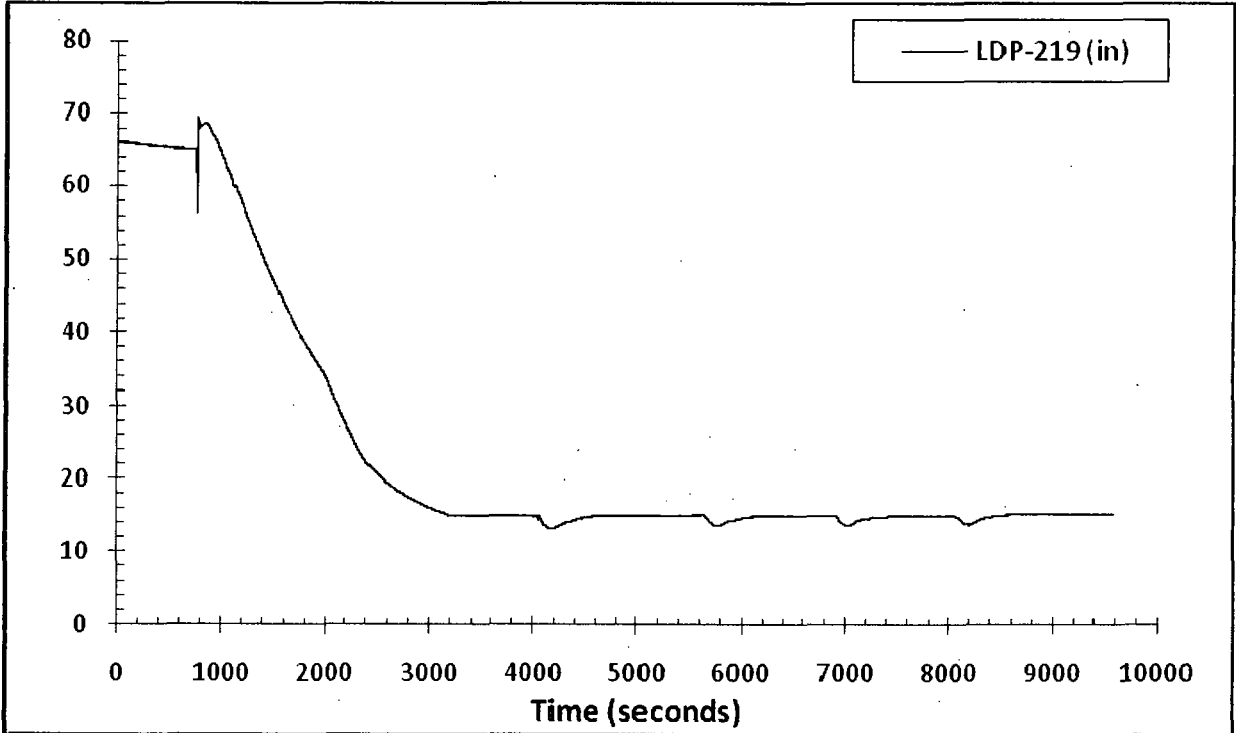
SG-1 to HL-1 Plenum Uncompensated Water Level



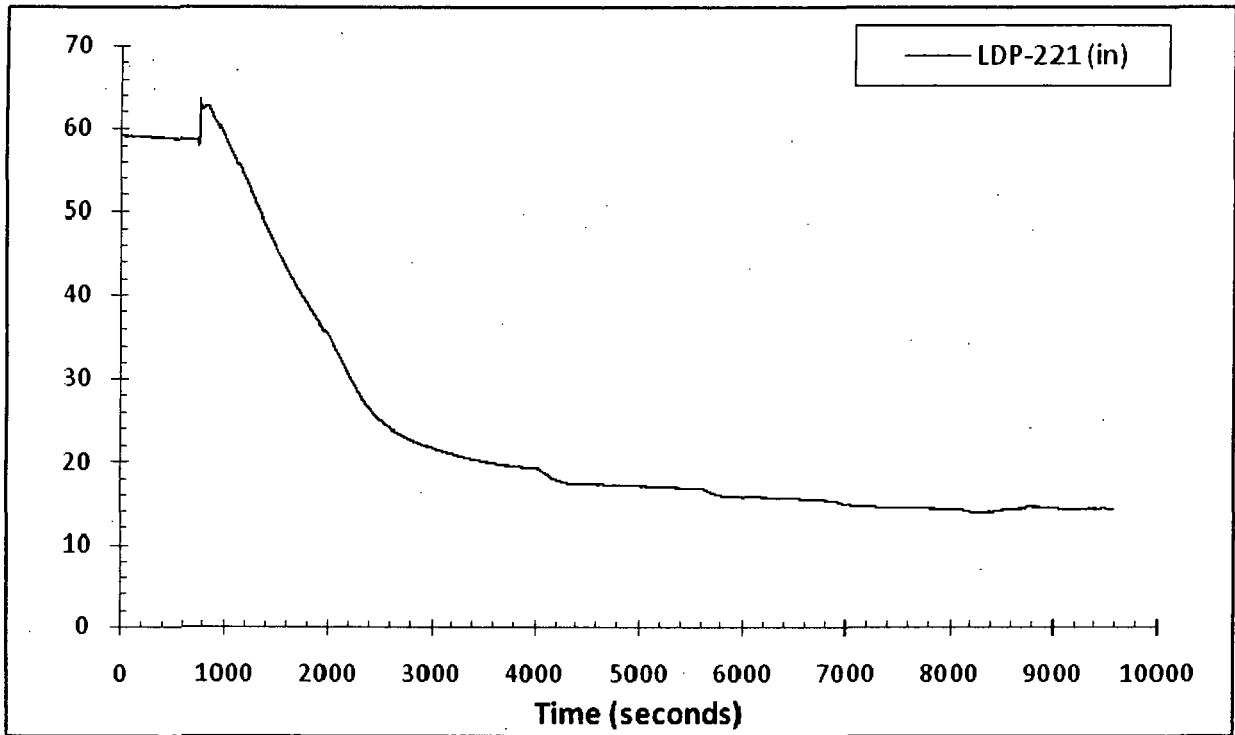
SG-1 Long Tube to HL Uncompensated Water Level



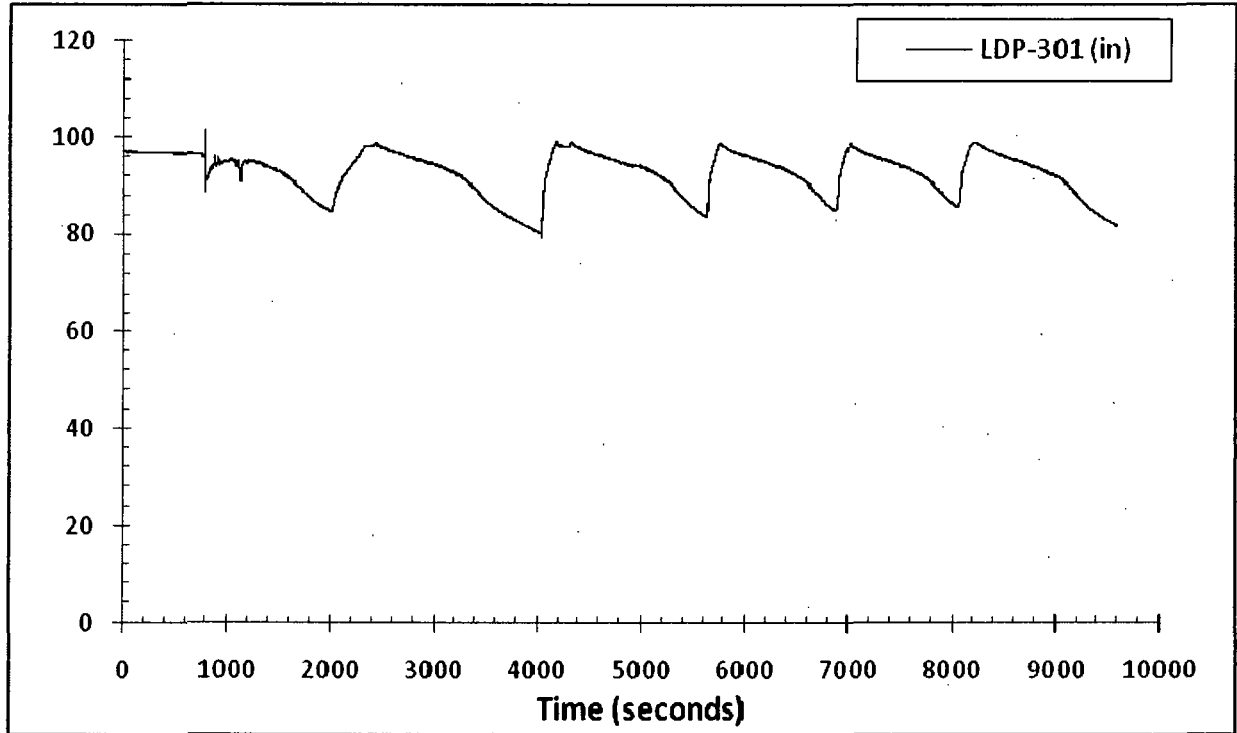
SG-1 Short Tube to HL Uncompensated Water Level



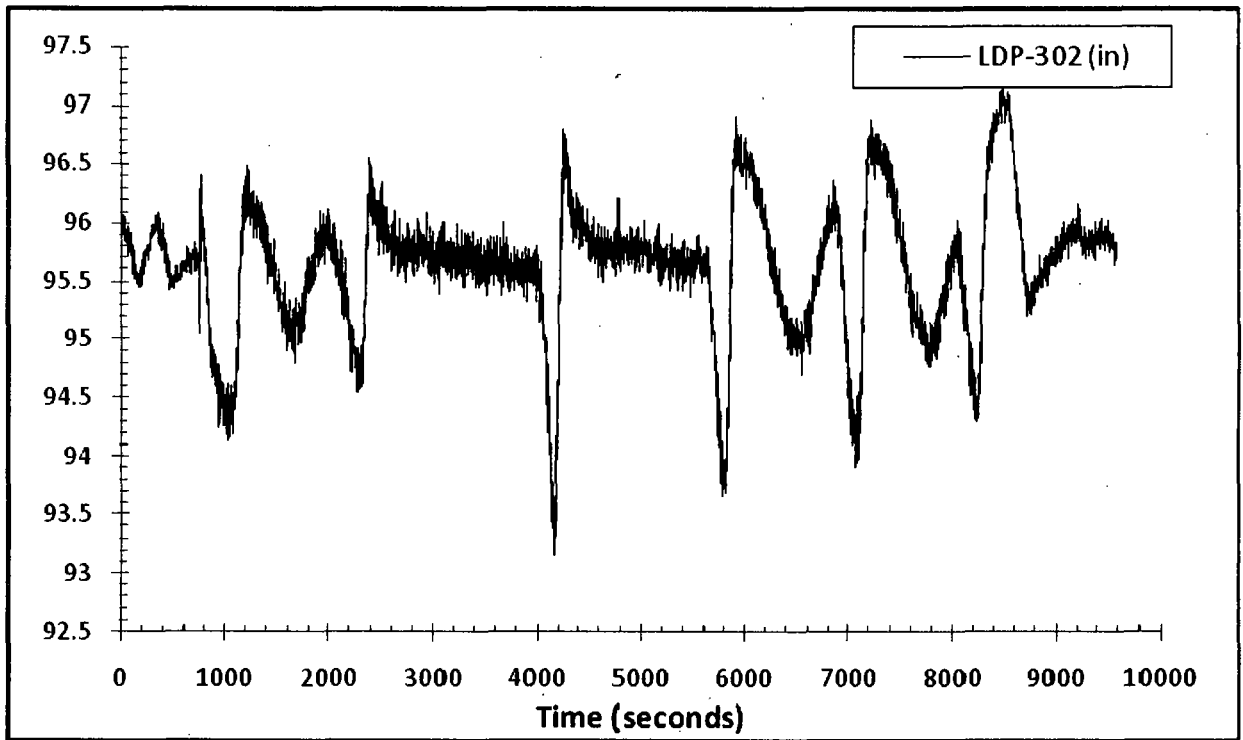
SG-1 Long Tube to CL Uncompensated Water Level



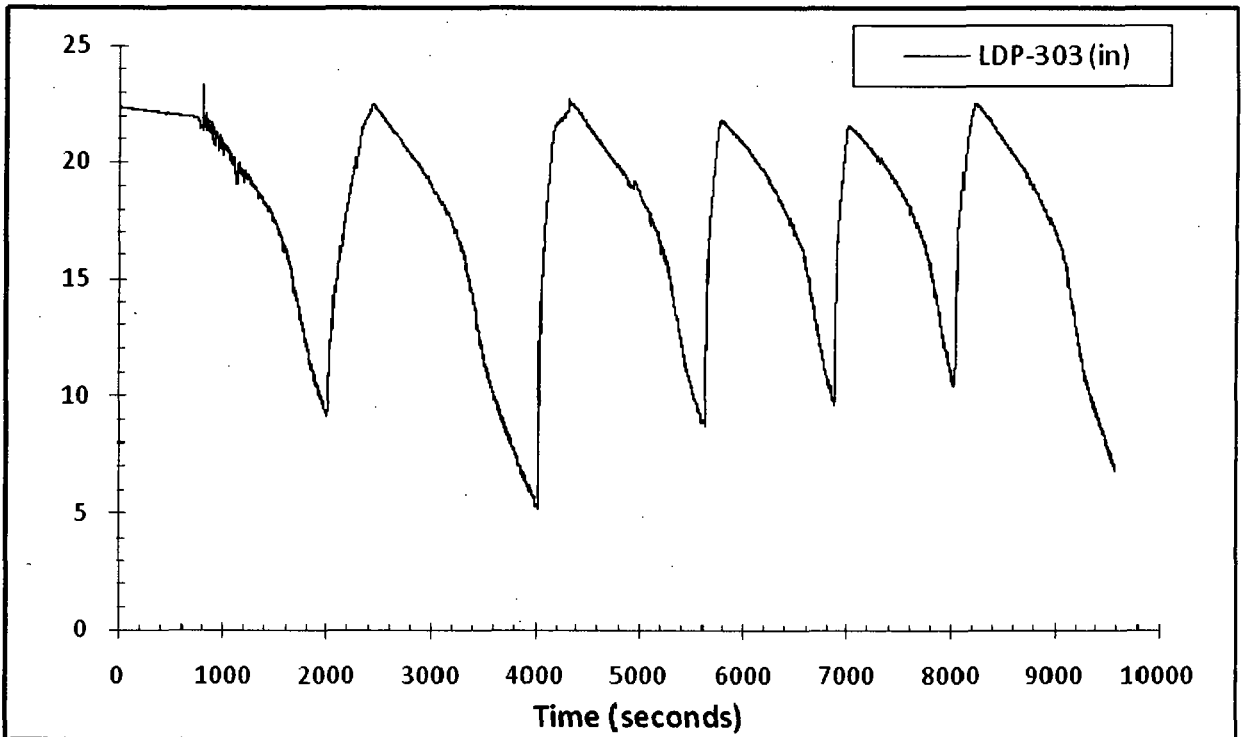
SG-1 Short Tube to CL Uncompensated Water Level



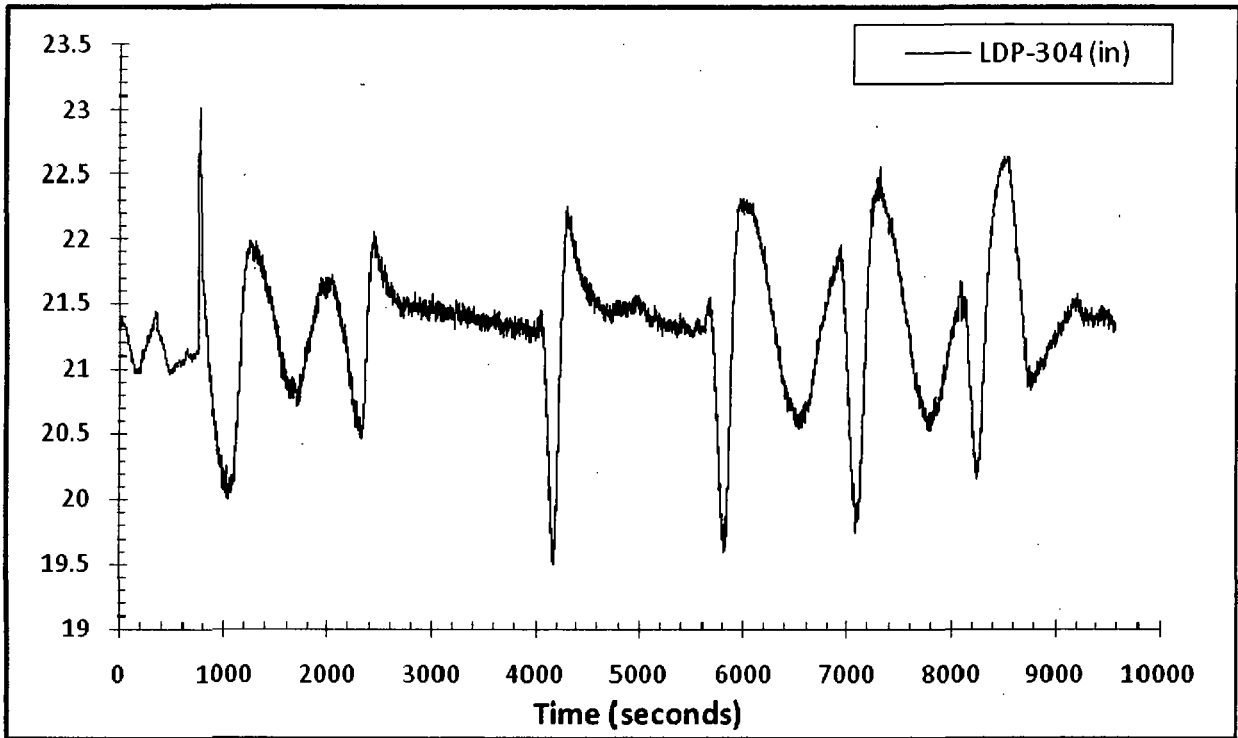
SG-1 WR Uncompensated Water Level



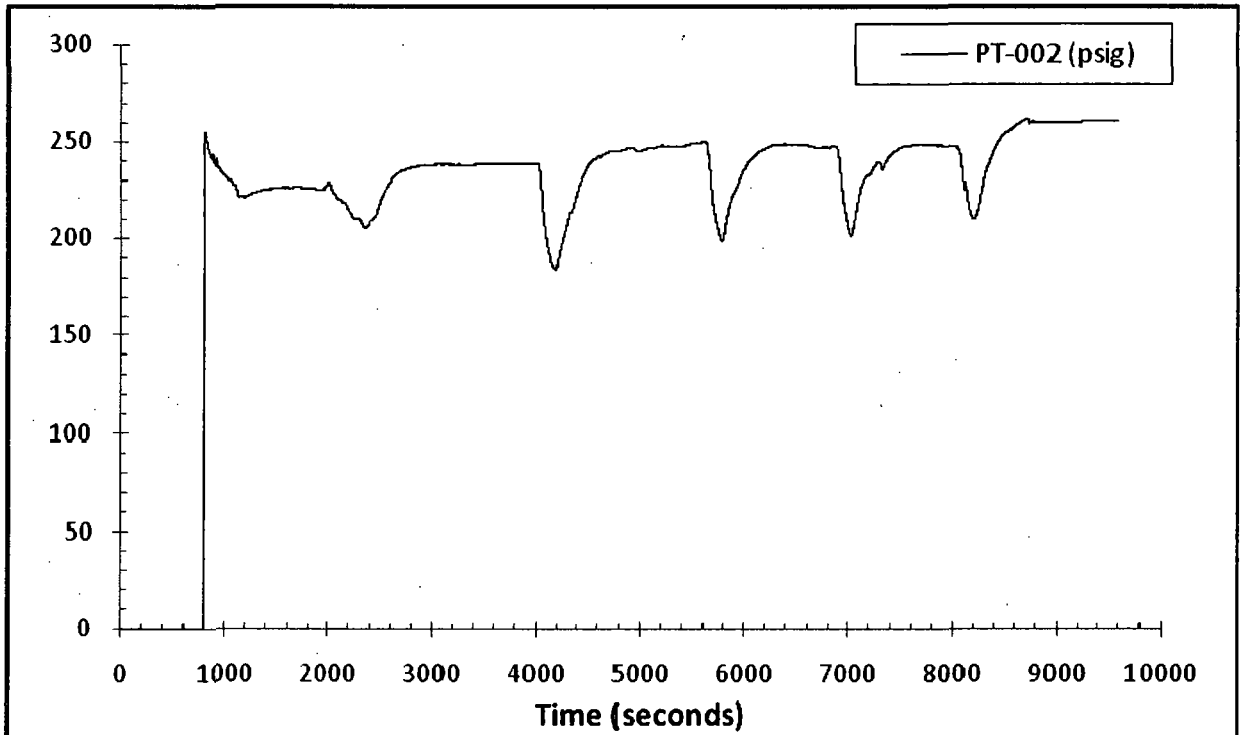
SG-2 WR Uncompensated Water Level



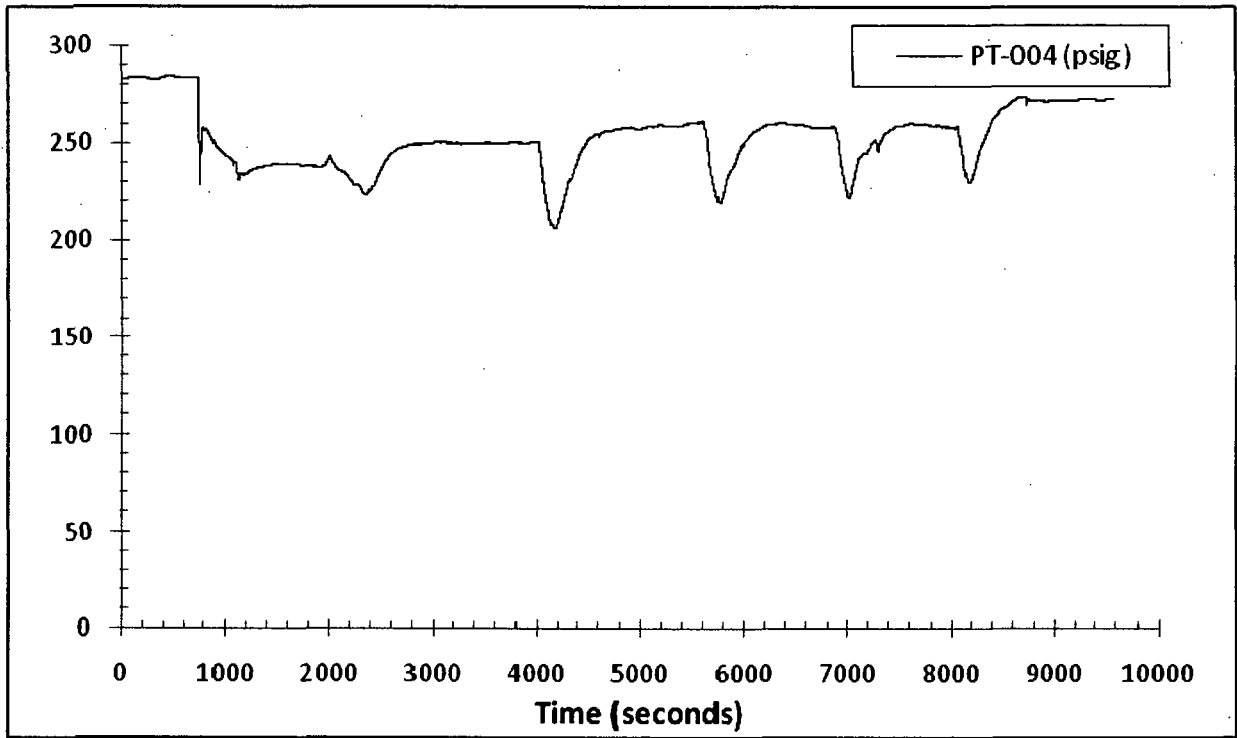
SG-1 NR Uncompensated Water Level



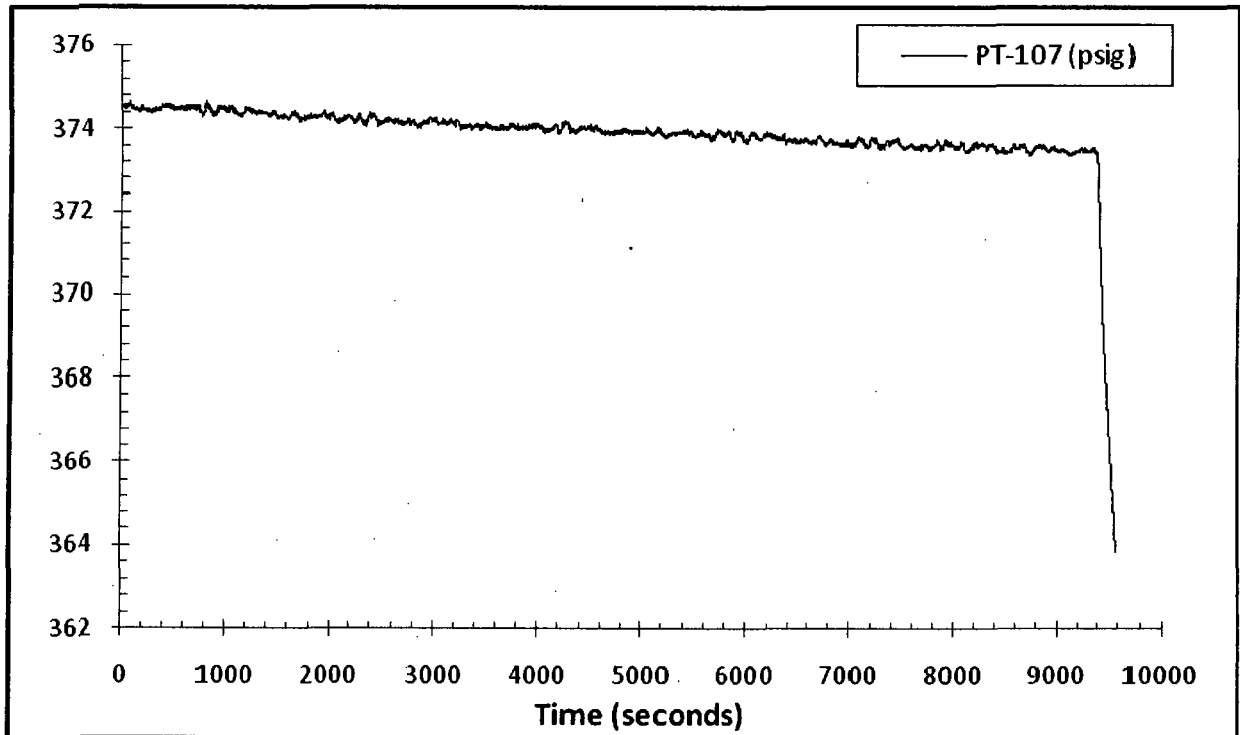
SG-2 NR Uncompensated Water Level



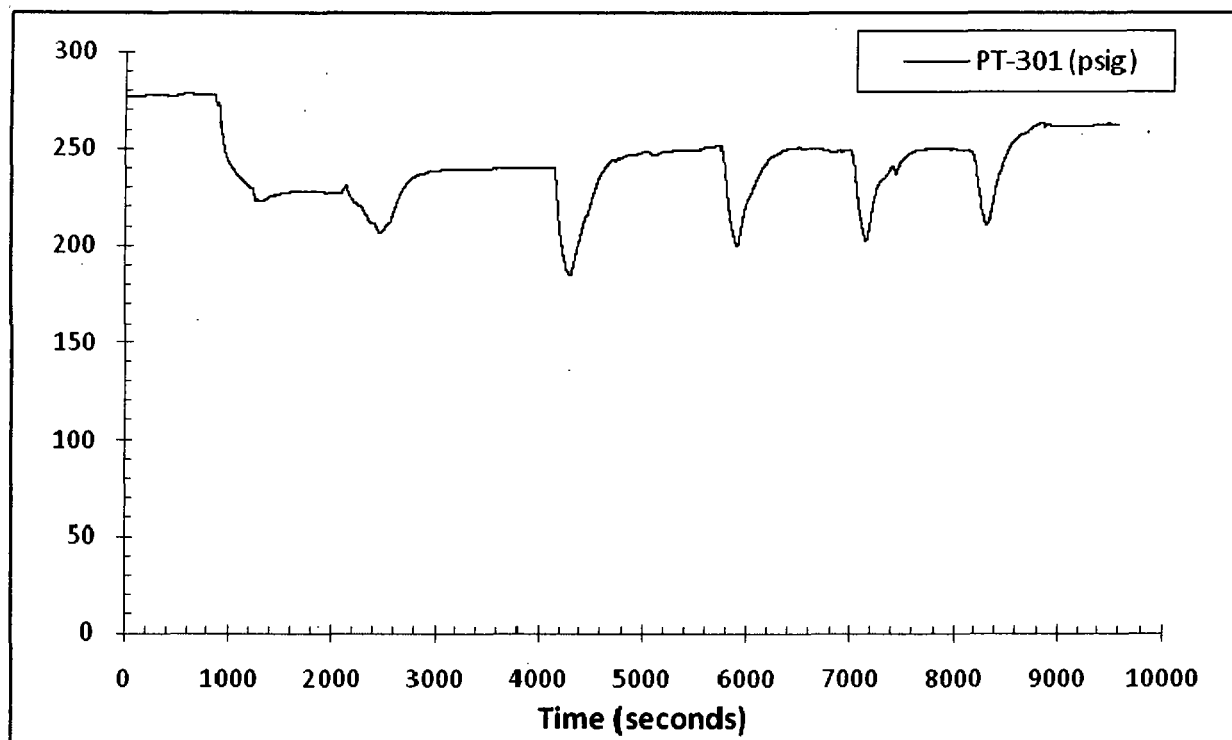
MS Header Pressure



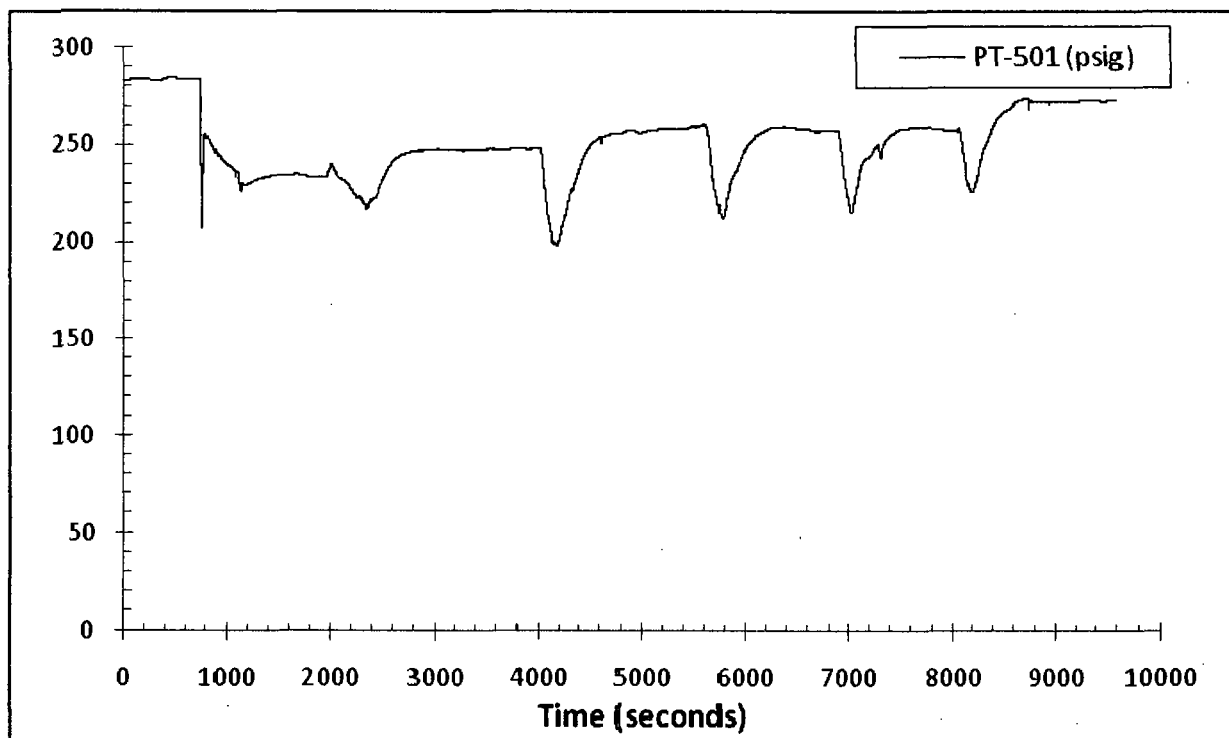
Temp Steam Pressure for FVM-002



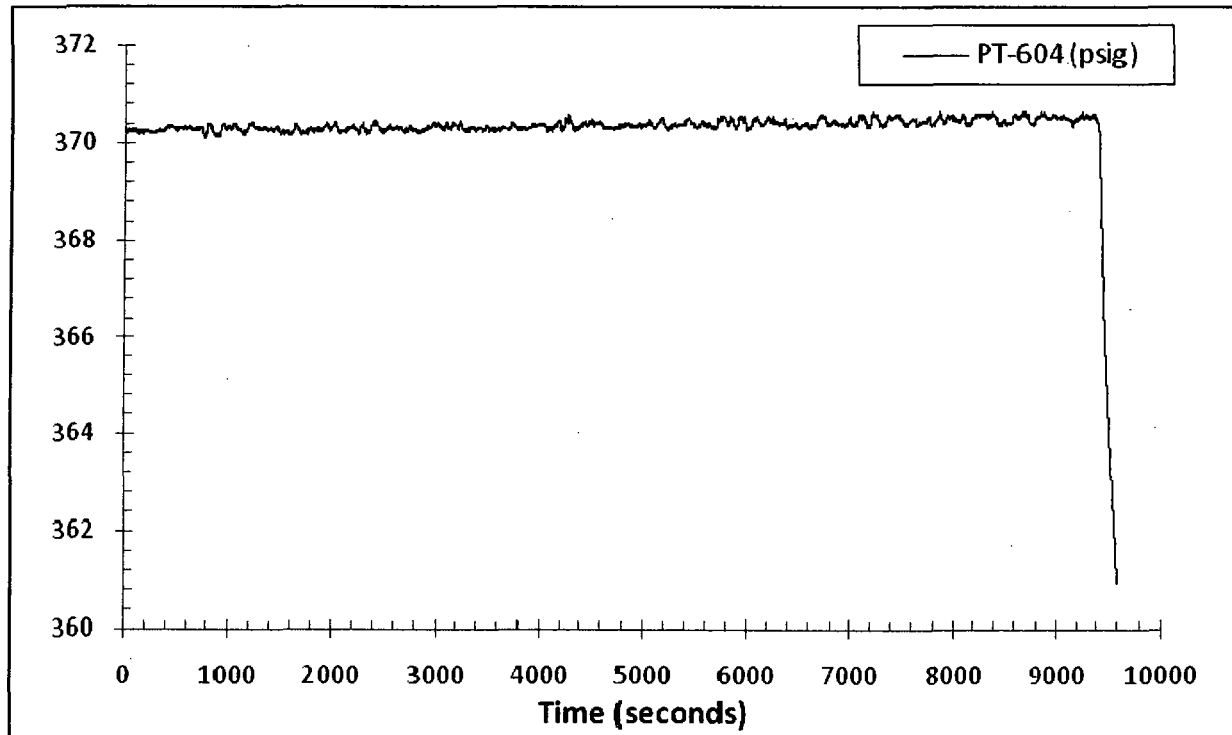
Rx Upper Head Pressure



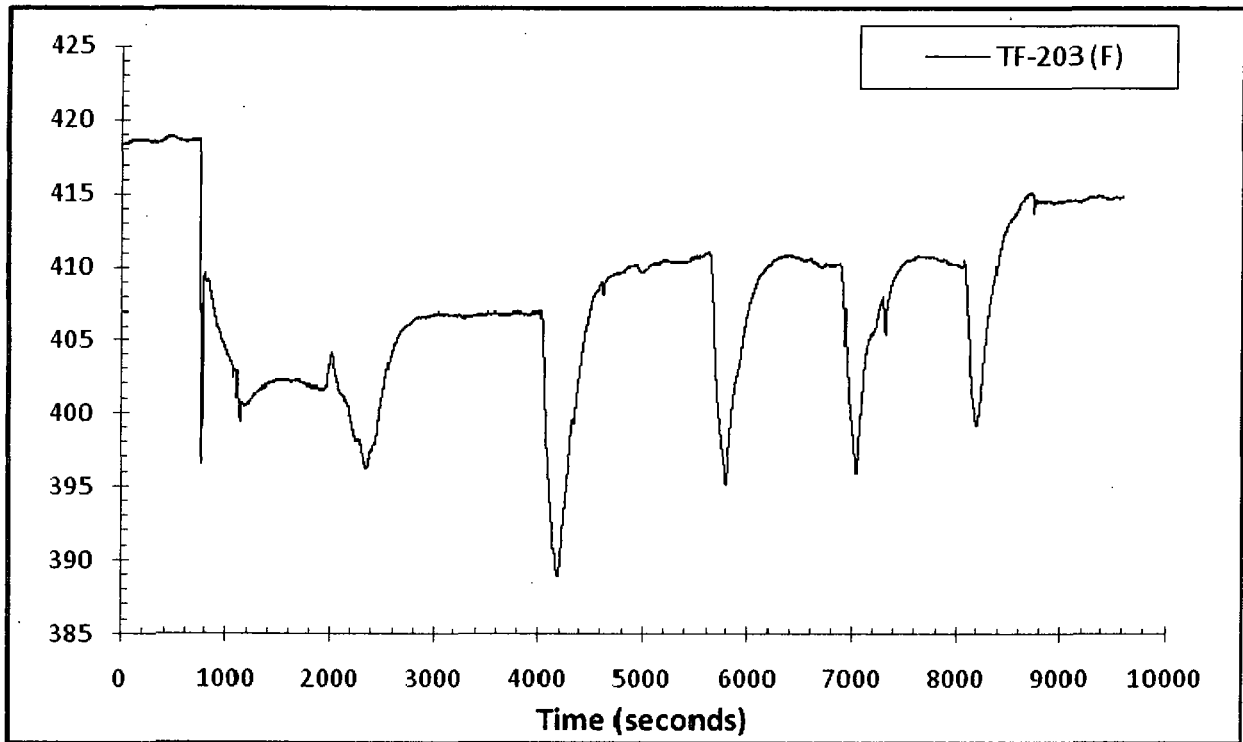
SG-1 Pressure



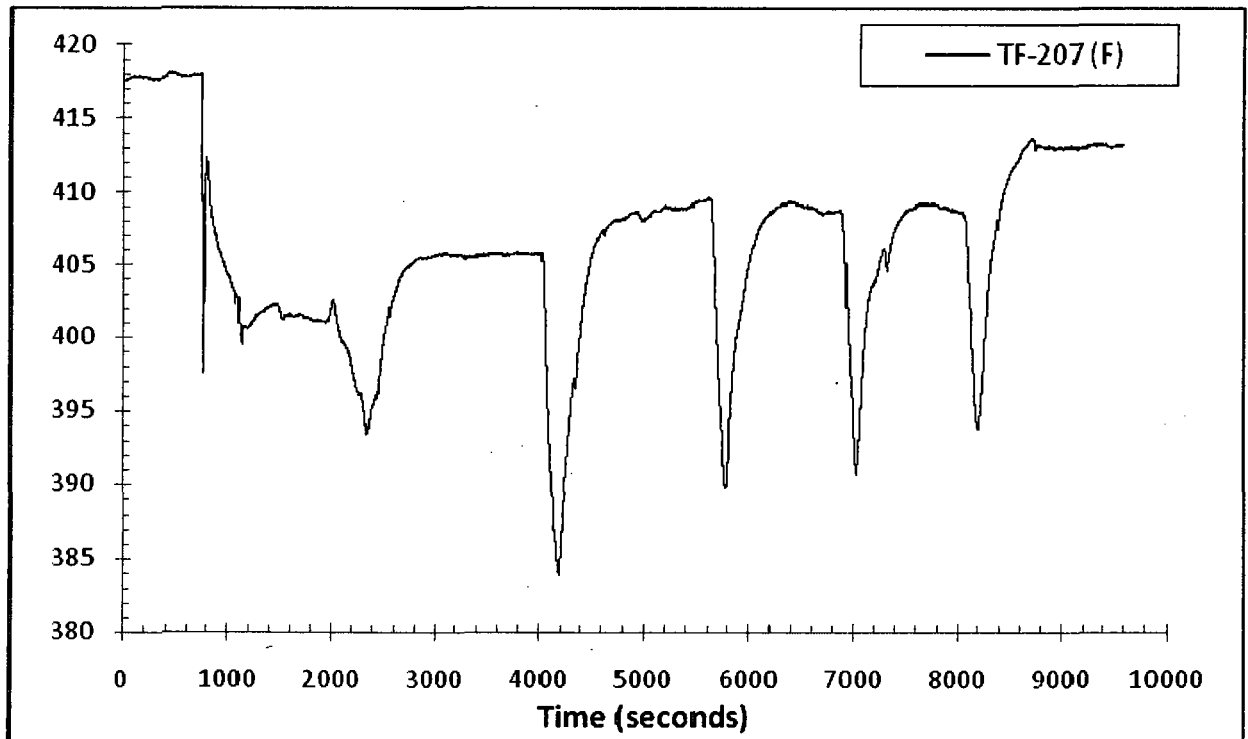
Separator Outlet Steam Pressure



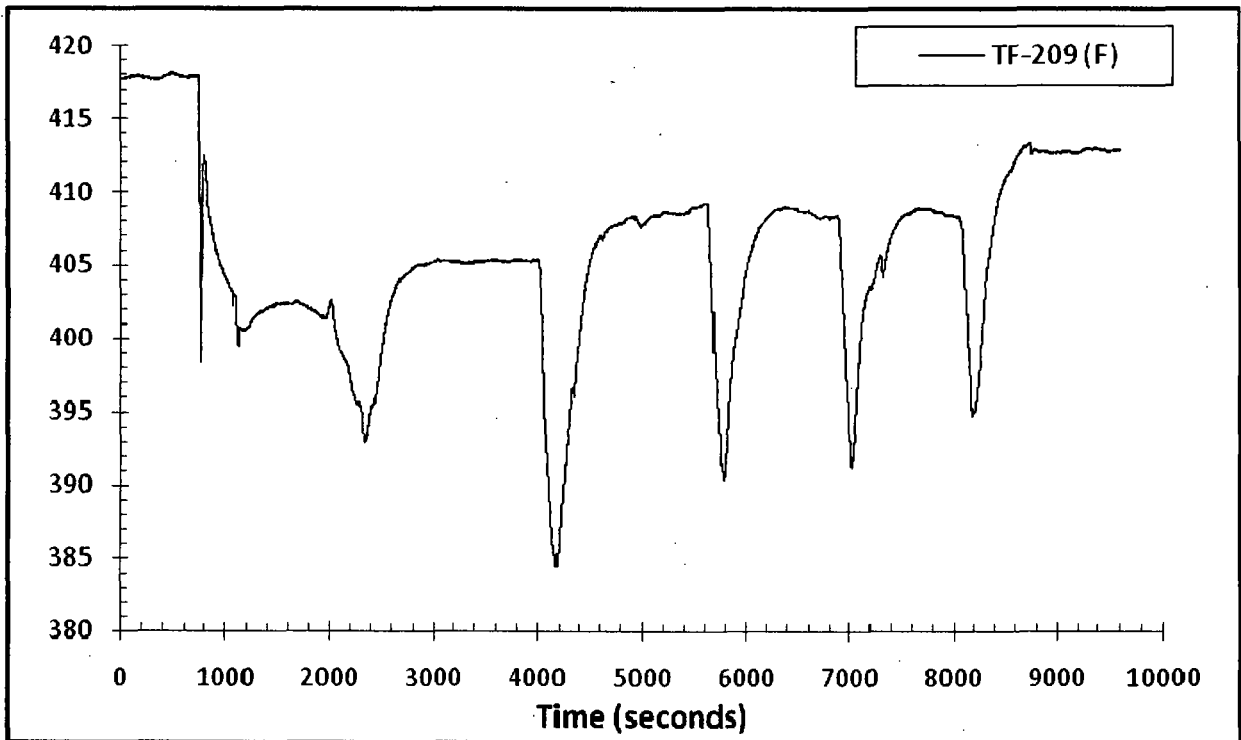
PZR WR Pressure



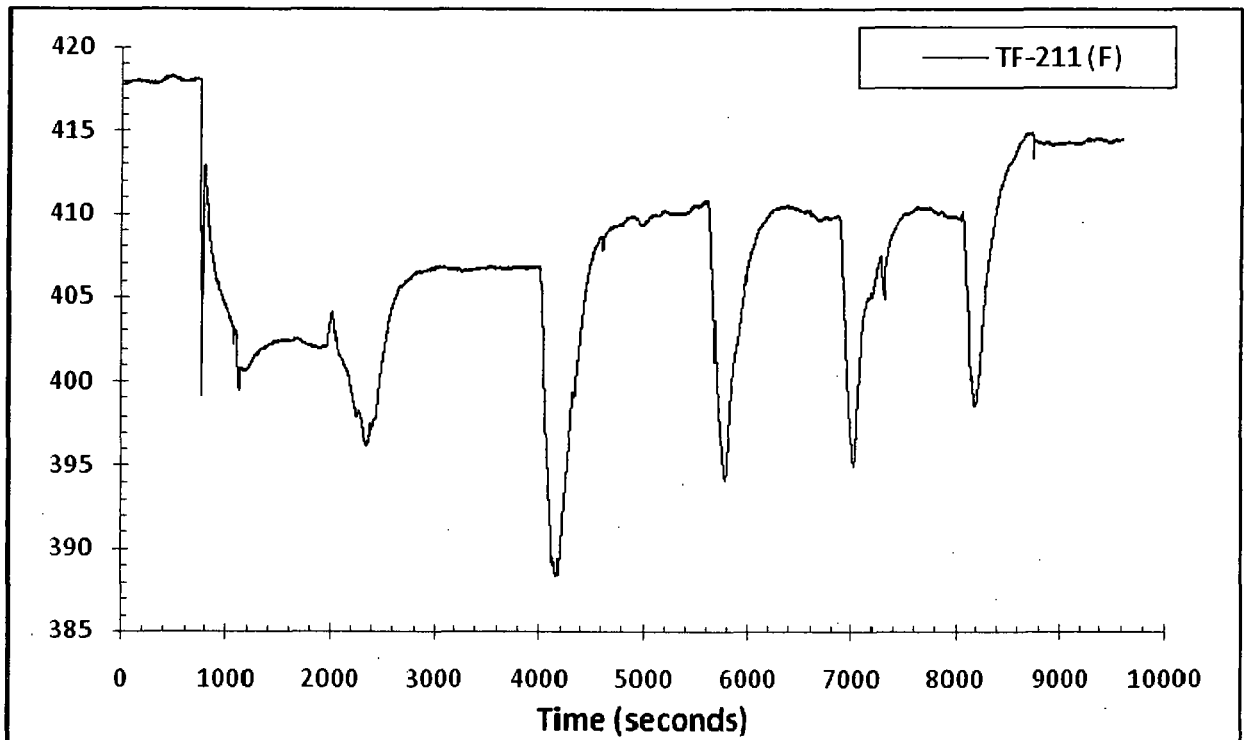
Separator Outlet Steam Temperature



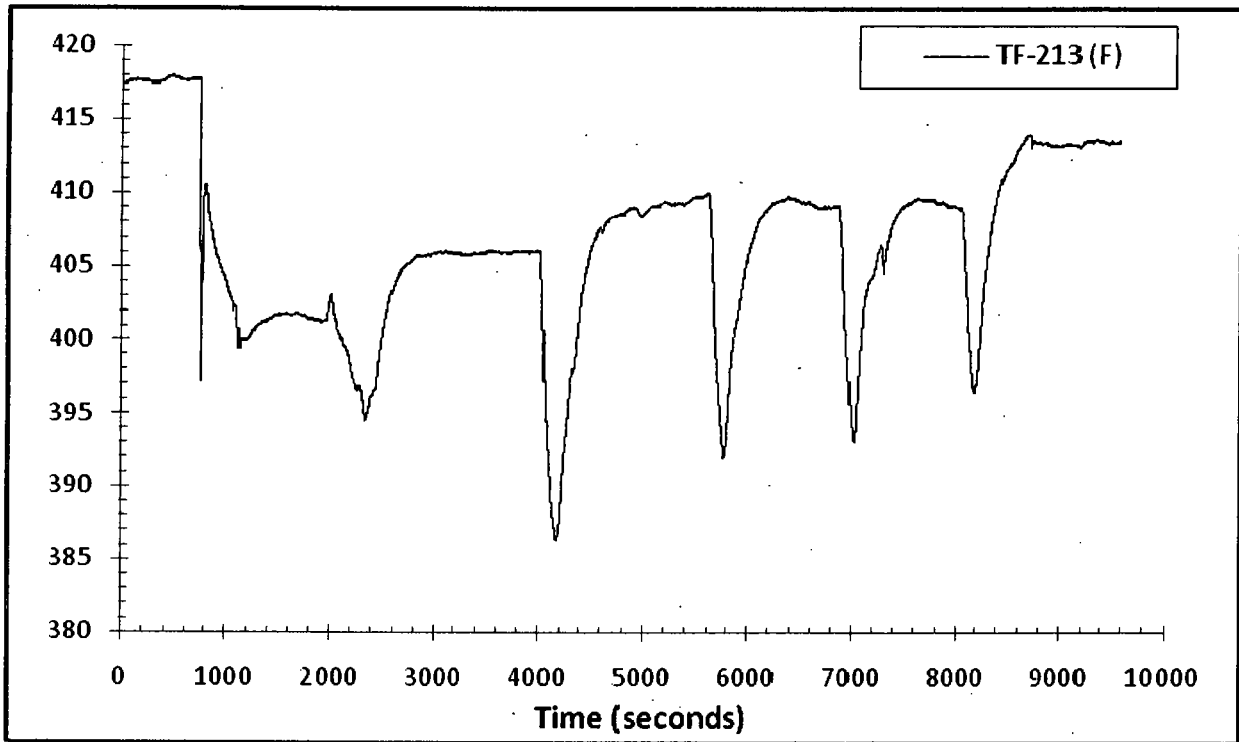
SG-1 Short Tube at Middle Outlet Side Temperature



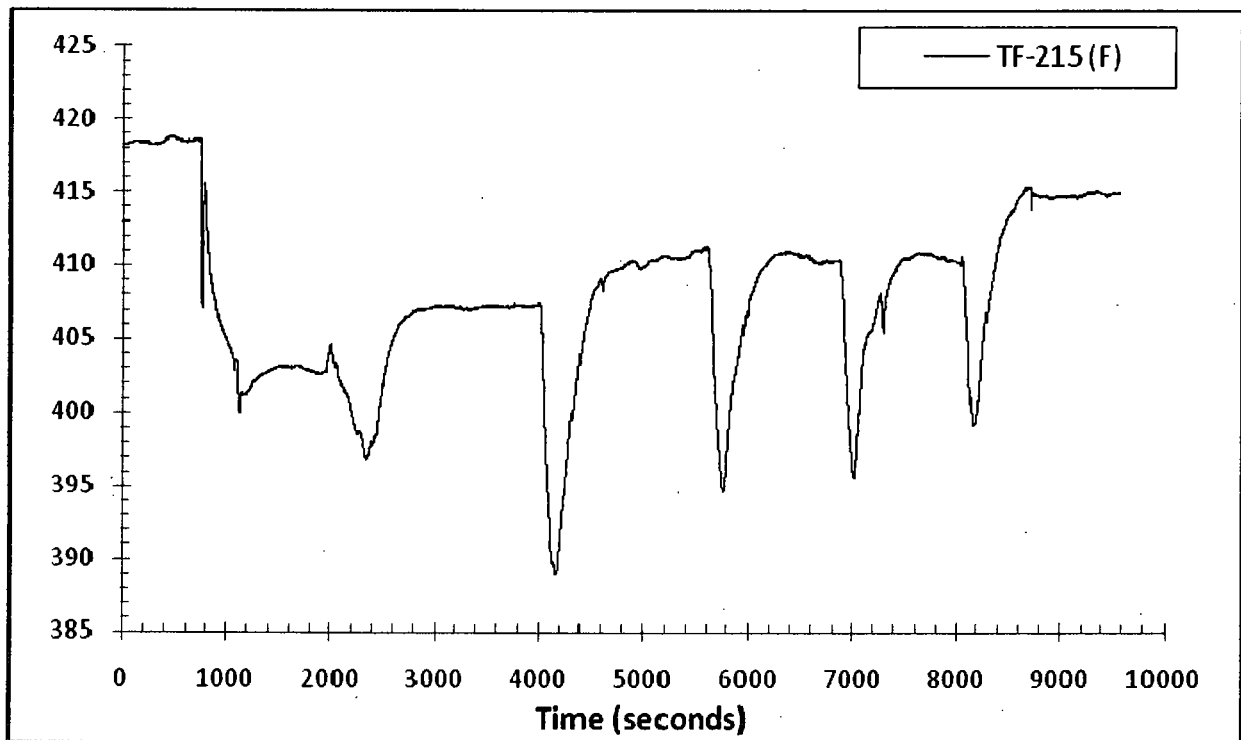
SG-1 Short Tube at Middle Inlet Side Temperature



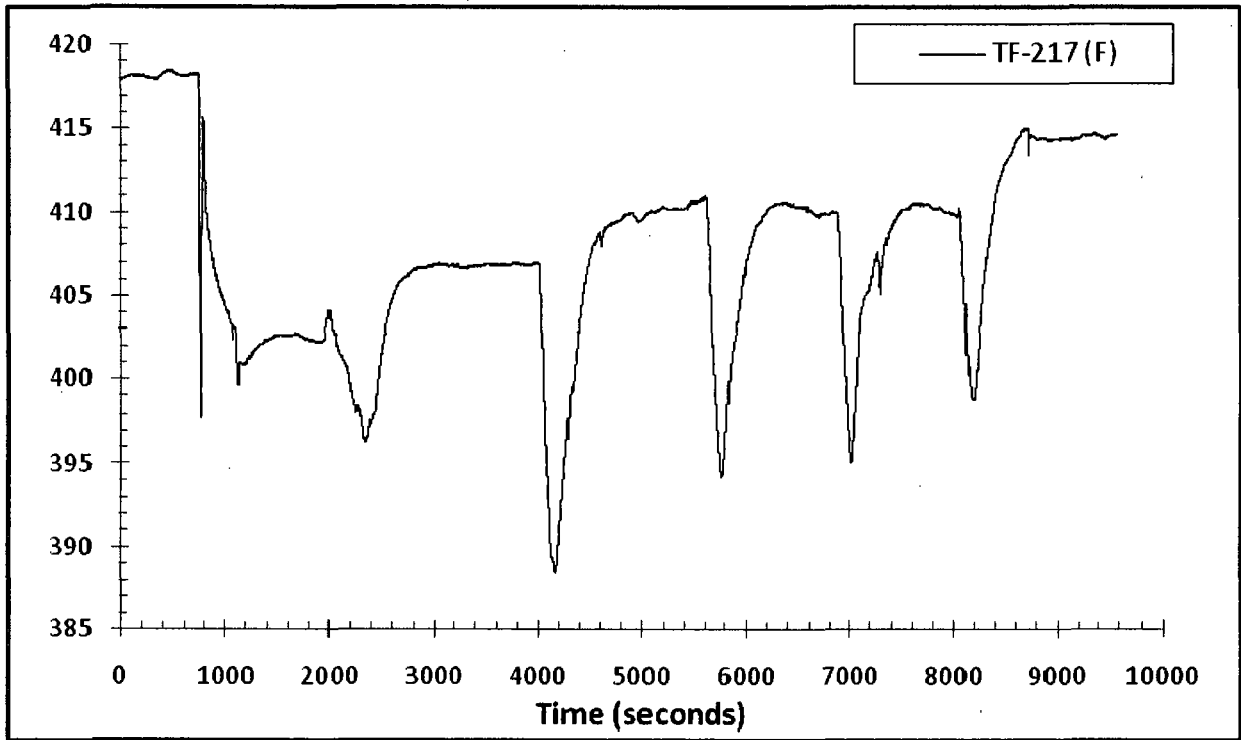
SG-1 Long Tube at Middle Outlet Temperature



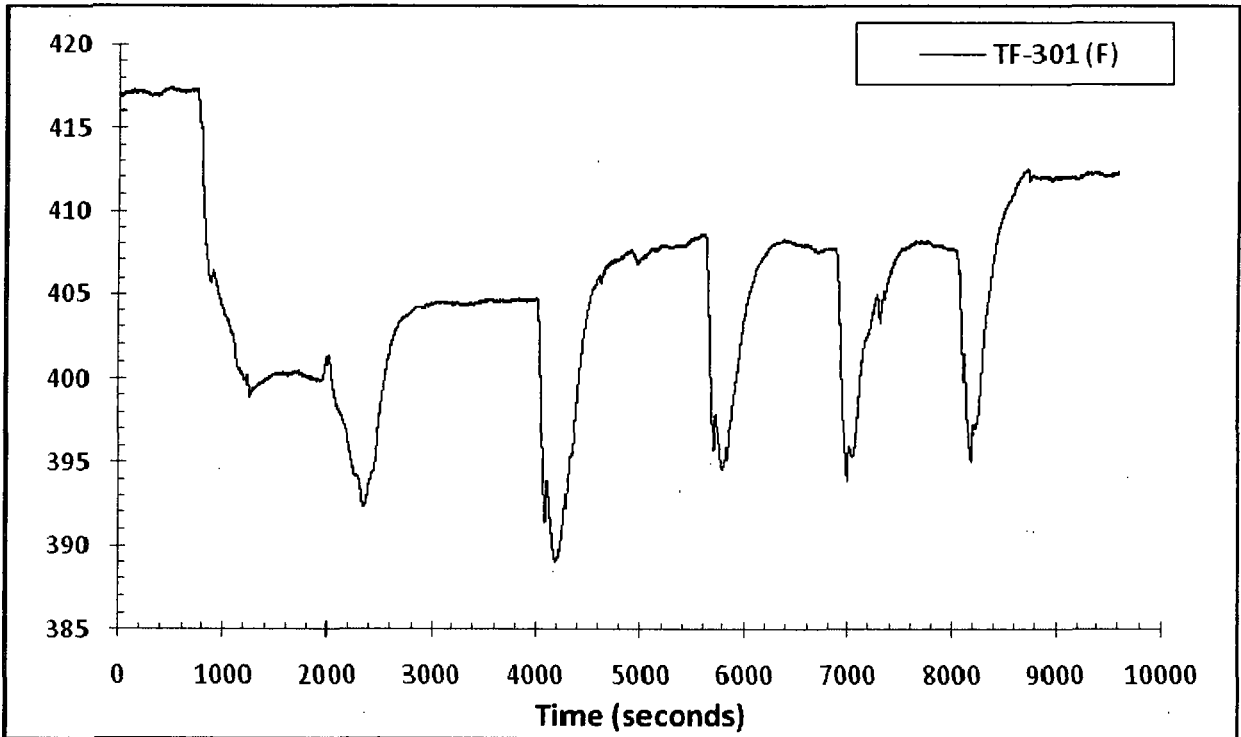
SG-1 Long Tube at Middle Inlet Temperature



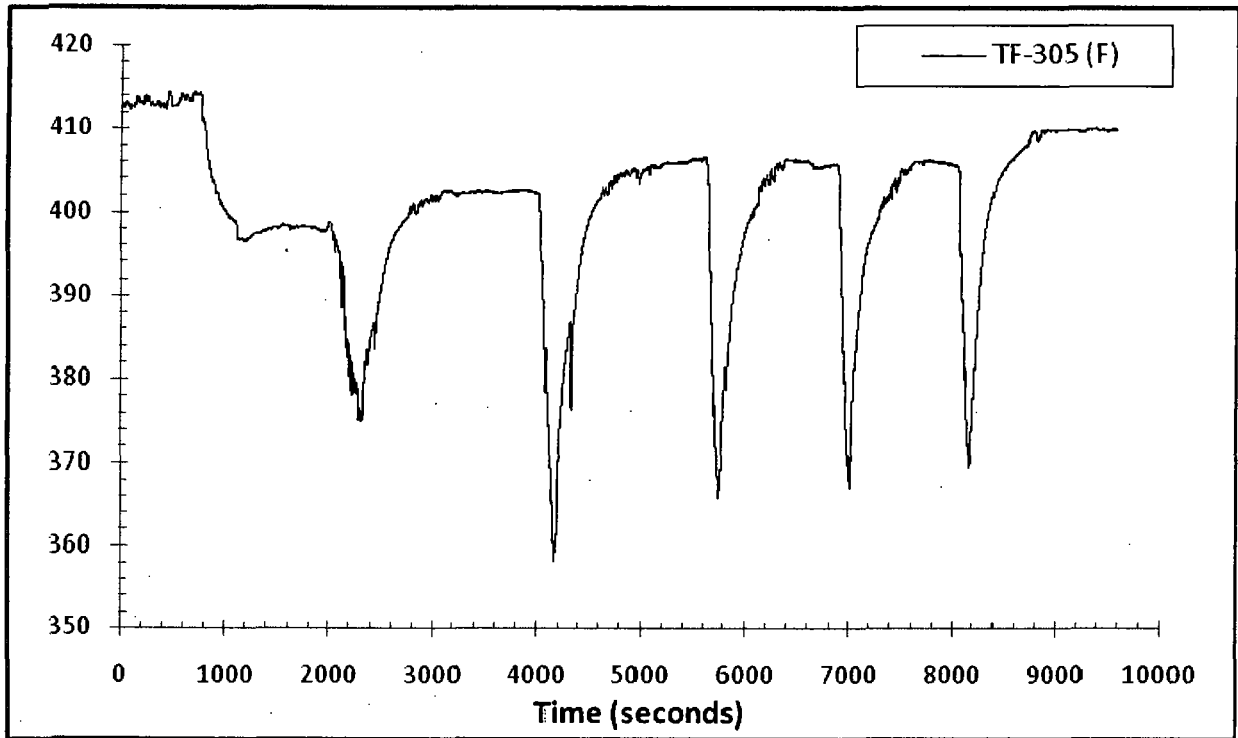
SG-1 Short Tube at Top Temperature



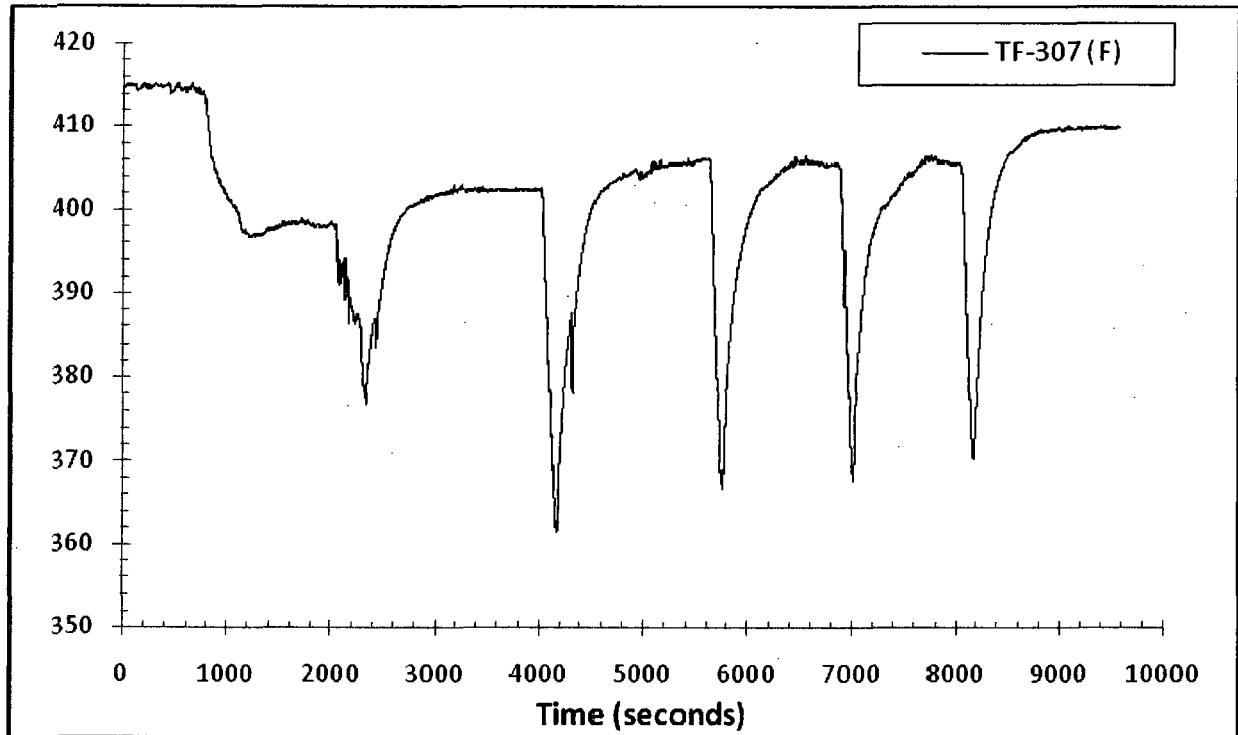
SG-1 Long Tube at Top Temperature



SG-1 Steam Temperature (SC-301)



SG-1 Downcomer HL Side Temperature



SG-1 Downcomer CL Side Temperature

NRC-COND-02: Steam Generator U-Tube Condensation Test @ 285 psig

Oregon State University

Start time = 12/14/2005 11:19:21

End time = 12/14/2005 13:59:10

File created on 12/14/2005 14:35:31

Timestamp	Interval (sec)	Tagname	Description	Area	Value
12/14/2005 11:17	-119	TEST_SW	Facility Test Switch	Switches	In Test
12/14/2005 11:17	-119	dMuteSCR_Alarm	SCR Signal loss audible alarm	Status	ON
12/14/2005 11:32	789	M001_HS_O	SG-1 Stm Stop HS	Switches	Open
12/14/2005 11:32	789	M001_STAT	SG-1 Steam Stop	Valves	Open
12/14/2005 11:43	1472	MF_001	FST Fill Valve	Valves	Open
12/14/2005 11:49	1800	MF_001	FST Fill Valve	Valves	Closed
12/14/2005 11:57	2317	MF_001	FST Fill Valve	Valves	Open
12/14/2005 12:04	2714	MF_001	FST Fill Valve	Valves	Closed
12/14/2005 12:22	3806	MF_001	FST Fill Valve	Valves	Open
12/14/2005 12:31	4320	MF_001	FST Fill Valve	Valves	Closed
12/14/2005 12:51	5540	MF_001	FST Fill Valve	Valves	Open
12/14/2005 12:59	5994	MF_001	FST Fill Valve	Valves	Closed
12/14/2005 13:15	6983	MF_001	FST Fill Valve	Valves	Open
12/14/2005 13:21	7341	MF_001	FST Fill Valve	Valves	Closed
12/14/2005 13:35	8194	MF_001	FST Fill Valve	Valves	Open
12/14/2005 13:41	8526	MF_001	FST Fill Valve	Valves	Closed
12/15/2005 13:59	9589	TEST_SW	Facility Test Switch	Switches	Normal

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
DP-111	DP across Upper Core Plate	0.9963	4.9931	-30	30	Differential Pressure (in h2o)
DP-114	DP across Upper Support Plate	0.9934	4.9796	-375	375	Differential Pressure (in h2o)
DP-121	DVI-1/CL-1 Differential Pressure	0.989	4.9563	-25	25	Differential Pressure (in h2o)
DP-122	DVI-2/CL-2 Differential Pressure	0.9931	4.9591	-25	25	Differential Pressure (in h2o)
DP-123	DVI-1/CL-3 Differential Pressure	0.9957	4.9743	-25	25	Differential Pressure (in h2o)
DP-124	DVI-2/CL-4 Differential Pressure	0.9924	4.9561	-25	25	Differential Pressure (in h2o)
DP-125	HL-1 entrance losses	0.9951	4.97	0	30	Differential Pressure (in h2o)
DP-126	HL-2 entrance losses	0.9949	4.9707	0	30	Differential Pressure (in h2o)
DP-128	DVI-1 entrance losses	0.9959	4.9709	-25	25	Differential Pressure (in h2o)
DP-129	DVI-2 entrance losses	0.9958	4.9736	-25	25	Differential Pressure (in h2o)
DP-130	Upper Head Differential Pressure	0.9941	4.9622	-50	50	Differential Pressure (in h2o)
DP-201	CL-1 Differential Pressure	0.9939	4.9689	-25	25	Differential Pressure (in h2o)
DP-202	RCP-2 Differential Pressure	0.9916	4.9588	0	200	Differential Pressure (in h2o)
DP-203	RCP-1 Differential Pressure	0.9941	4.9688	0	200	Differential Pressure (in h2o)
DP-204	CL-2 Differential Pressure	0.9969	4.9814	-25	25	Differential Pressure (in h2o)
DP-205	RCP-3 Differential Pressure	0.995	4.978	0	200	Differential Pressure (in h2o)
DP-206	RCP-4 Differential Pressure	0.9959	4.984	0	200	Differential Pressure (in h2o)
DP-207	CL-3 Differential Pressure	0.9967	4.9817	-25	25	Differential Pressure (in h2o)
DP-208	CL-4 Differential Pressure	0.9984	4.9905	-25	25	Differential Pressure (in h2o)
DP-209	HL-1 Differential Pressure	0.998	4.9858	-25	25	Differential Pressure (in h2o)
DP-210	HL-2 Differential Pressure	0.9933	4.9649	-25	25	Differential Pressure (in h2o)
DP-211	SG-1 Short Tube Entrance Losses	0.9979	4.9849	0	25	Differential Pressure (in h2o)
DP-212	SG-2 Long Tube Exit Losses	0.9979	4.9838	0	25	Differential Pressure (in h2o)
DP-213	SG-1 Long Tube Exit Losses	0.9965	4.9788	-15	15	Differential Pressure (in h2o)
DP-214	SG-2 Long Tube Entrance Losses	0.9973	4.981	0	15	Differential Pressure (in h2o)
DP-215	Break Differential Pressure	0.9981	4.9807	0	500	Differential Pressure (psid)
DP-216	Break Differential Pressure	0.9964	4.9729	0	500	Differential Pressure (psid)
DP-217	U-Tube Condensation Separator Level	0.9966	4.9818	0	36.67	Differential Pressure (in h2o)
DP-218	HL-2 to CL2 Differential Pressure at SG2	0.9992	4.9889	0	150	Differential Pressure (in h2o)
DP-219	U-Tube Condensation Catch Tank Level	0.9949	4.9686	0	30.95	Differential Pressure (in h2o)
DP-220	HL-2 to CL4 Differential Pressure at SG2	0.9936	4.9627	0	150	Differential Pressure (in h2o)
DP-221	HL-1 to CL1 Differential Pressure at Rx	0.9951	4.9677	0	150	Differential Pressure (in h2o)
DP-222	HL-2 to CL2 Differential Pressure at Rx	0.9975	4.983	0	150	Differential Pressure (in h2o)
DP-223	HL-1 to CL3 Differential Pressure at Rx	0.9987	4.9915	0	150	Differential Pressure (in h2o)
DP-224	HL-2 to CL4 Differential Pressure at Rx	0.9944	4.9665	0	150	Differential Pressure (in h2o)
DP-401	ACC-1 Injection Differential Pressure	0.9975	4.979	0	400	Differential Pressure (in h2o)
DP-402	ACC-2 Injection Differential Pressure	0.9958	4.9736	0	400	Differential Pressure (in h2o)
DP-501	CMT-1 Injection Differential Pressure	0.9948	4.9675	-150	150	Differential Pressure (in h2o)
DP-502	CMT-2 Injection Differential Pressure	0.9947	4.9645	-150	150	Differential Pressure (in h2o)
DP-503	CMT-1 Balance Line Differential Pressure	0.998	4.9858	-150	150	Differential Pressure (in h2o)
DP-504	CMT-2 Balance Line Differential Pressure	1.0007	4.9955	-100	100	Differential Pressure (in h2o)
DP-601	HL-1 to ADS4-1 Differential Pressure	1.0008	4.9969	0	10	Differential Pressure (psid)
DP-602	HL-2 to ADS4-2 Differential Pressure	0.9948	4.967	0	10	Differential Pressure (psid)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
DP-603	ADS4-1 Venturi	0.9985	4.9847	0	100	Differential Pressure (in h2o)
DP-604	ADS4-2 Venturi	0.9941	4.964	0	100	Differential Pressure (in h2o)
DP-605	ADS4-1 Venturi outlet to Enlarger inlet	0.9993	4.9881	0	50	Differential Pressure (in h2o)
DP-606	ADS4-2 Venturi outlet to Enlarger inlet	0.9991	4.9857	0	50	Differential Pressure (in h2o)
DP-611	PZR Surge Line Differential Pressure	0.9967	4.9773	-25	25	Differential Pressure (in h2o)
DP-701	IRWST-1 Injection Differential Pressure	0.9982	4.9872	0	30	Differential Pressure (psid)
DP-702	IRWST-2 Injection Differential Pressure	0.9981	4.9871	0	30	Differential Pressure (psid)
DP-905	Break Separator Entrance Differential Pressure	0.9994	4.9905	0	100	Differential Pressure (psid)
FDP-604	ADS-2 Flow Differential Pressure	0.9961	4.9738	0	100	Differential Pressure (psid)
FDP-605	ADS-1 Flow Differential Pressure	0.9993	4.9896	0	250	Differential Pressure (psid)
FDP-606	ADS-3 Flow Differential Pressure	1.0023	5.0051	0	100	Differential Pressure (psid)
FMM-001	SG-1 Feed Flow	0.9961	4.9838	0	6	Volumetric Flow Rate (gpm)
FMM-002	SG-2 Feed Flow	0.9925	4.9642	0	6	Volumetric Flow Rate (gpm)
FMM-201	CL-1 Loop Flow	0.9921	4.9607	-100	100	Volumetric Flow Rate (gpm)
FMM-202	CL-2 Loop Flow	0.9943	4.9754	-100	100	Volumetric Flow Rate (gpm)
FMM-203	CL-3 Loop Flow	0.9974	4.9853	-100	100	Volumetric Flow Rate (gpm)
FMM-204	CL-4 Loop Flow	0.9936	4.9729	-100	100	Volumetric Flow Rate (gpm)
FMM-205	DVI-1 Flow	0.996	4.9706	0	75	Volumetric Flow Rate (gpm)
FMM-206	DVI-2 Flow	0.9969	4.9767	0	75	Volumetric Flow Rate (gpm)
FMM-401	ACC-1 Injection Flow	0.9932	4.9516	0	40	Volumetric Flow Rate (gpm)
FMM-402	ACC-2 Injection Flow	0.9965	4.9772	0	40	Volumetric Flow Rate (gpm)
FMM-501	CMT-1 Injection Flow	1.0006	4.9959	0	75	Volumetric Flow Rate (gpm)
FMM-502	CMT-2 CL Balance Line Flow	0.9994	4.9742	0	70	Volumetric Flow Rate (gpm)
FMM-503	CMT-1 CL Balance Line Flow	0.9985	4.9717	0	75	Volumetric Flow Rate (gpm)
FMM-504	CMT-2 Injection Flow	0.9925	4.9523	0	20	Volumetric Flow Rate (gpm)
FMM-601	ADS1-3 Loop Seal Flow	1.004	5.0168	0	200	Volumetric Flow Rate (gpm)
FMM-602	ADS4-2 Loop Seal Flow	1.0117	5.0507	0	60	Volumetric Flow Rate (gpm)
FMM-603	ADS4-1 Loop Seal Flow	1.0129	5.0571	0	60	Volumetric Flow Rate (gpm)
FMM-701	IRWST/DVI-1 Injection Flow	0.9954	4.9738	0	40	Volumetric Flow Rate (gpm)
FMM-702	IRWST/DVI-2 Injection Flow	0.9955	4.9724	0	40	Volumetric Flow Rate (gpm)
FMM-703	IRWST Overflow	0.9966	4.9663	0	10	Volumetric Flow Rate (gpm)
FMM-801	CVSP Discharge Flow	0.9998	4.9876	0	8	Volumetric Flow Rate (gpm)
FMM-802	PRHR Inlet Flow	0.9966	4.9656	0	40	Volumetric Flow Rate (gpm)
FMM-803	RNSP to DVI-2 Flow	0.9942	4.9629	0	30	Volumetric Flow Rate (gpm)
FMM-804	PRHR Outlet Flow	0.9963	4.9612	0	40	Volumetric Flow Rate (gpm)
FMM-805	RNSP Discharge Flow	0.9936	4.9711	0	40	Volumetric Flow Rate (gpm)
FMM-901	Primary Sump-1 Recirculation Injection Flow	0.9936	4.9673	-40	40	Volumetric Flow Rate (gpm)
FMM-902	Primary Sump-2 Recirculation Injection Flow	0.9948	4.9726	-40	40	Volumetric Flow Rate (gpm)
FMM-905	Break Separator Loop Seal Flow	1.0902	5.1224	-90	90	Volumetric Flow Rate (gpm)
FVM-001	U-Tube Outlet Steam Flow	1.0036	5.0202	0	70	Steam Flow Rate (cfm)
FVM-002	U-Tube Inlet Steam Flow	0.9986	4.9885	0	70	Steam Flow Rate (cfm)
FVM-003	SG 2 Secondary Side Steam Flow	0.9988	5.0101	0	140	Steam Flow Rate (cfm)
FVM-004	Catch Tank Outlet Steam Flow	1.001	4.9885	0	70	Steam Flow Rate (cfm)
FVM-009	SG-1 PORV Blowdown Steam Flow	0.9967	4.9836	0	381	Steam Flow Rate (cfm)
FVM-010	SG-2 PORV Blowdown Steam Flow	0.9971	4.9817	0	381	Steam Flow Rate (cfm)
FVM-601	ADS1-3 Separator Steam Flow	1.0017	4.9995	0	2000	Steam Flow Rate (cfm)
FVM-602	ADS4-2 Separator 6-inch Line Steam Flow	1.0018	5.006	0	2000	Steam Flow Rate (cfm)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
FVM-603	ADS4-1 Separator 6-inch Line Steam Flow	1.0024	5.0062	0	1600	Steam Flow Rate (cfm)
FVM-604	ADS4-2 Separator 2-inch Line Steam Flow	1.0026	5.0034	0	348	Steam Flow Rate (cfm)
FVM-605	ADS4-1 Separator 2-inch Line Steam Flow	1.0028	5.0037	0	348	Steam Flow Rate (cfm)
FVM-901	BAMS HDR 6-inch Line Steam Flow	1.0023	5.0021	0	5000	Steam Flow Rate (cfm)
FVM-902	BAMS HDR 10-inch Line Steam Flow	1.0027	5.01	0	12500	Steam Flow Rate (cfm)
FVM-903	Primary Sump Steam Exhaust Flow	0.9949	4.9879	0	22	Steam Flow Rate (cfm)
FVM-904	Break Separator 3-inch Line Steam Flow	0.9979	4.9986	0	400	Steam Flow Rate (cfm)
FVM-905	Break Separator 6-inch Line Steam Flow	1.004	5.0036	0	6000	Steam Flow Rate (cfm)
FVM-906	Break Separator 8-inch Line Steam Flow	1.0025	5.0048	0	4000	Steam Flow Rate (cfm)
KW-101	Rx Heater Group 1 Power	1.1171	4.3222	0	472	Power (kW)
KW-102	Rx Heater Group 2 Power	1.0045	4.1621	0	486	Power (kW)
KW-103	Rx Heater Group 1 Power	0.9786	4.8931	0	496	Power (kW)
KW-104	Rx Heater Group 2 Power	0.9946	4.912	0	492	Power (kW)
KW-601	PZR Heater Power	0.982	4.9435	0	24.3	Power (kW)
LCT-701	IRWST Weight	0.9976	4.9831	0	40000	Mass (lbm)
LCT-901	Primary Sump Weight	0.9969	4.977	0	28800	Mass (lbm)
LCT-902	Secondary Sump Weight	0.9983	4.9845	0	16700	Mass (lbm)
LDP-001	FST Uncompensated Water Level	1.0017	5.0056	0	91.88	Water Level (in)
LDP-101	CL to Bypass Holes Uncompensated Water Level (270)	0.9945	4.9645	0	5.561	Water Level (in)
LDP-102	CL to Bypass Holes Uncompensated Water Level (180)	0.9963	4.9725	0	5.938	Water Level (in)
LDP-103	DVI to CL Uncompensated Water Level (270)	0.9982	4.9807	0	11.692	Water Level (in)
LDP-104	DVI to CL Uncompensated Water Level (180)	0.9992	4.9748	0	12.376	Water Level (in)
LDP-105	Upper Core Plate to DVI Uncompensated Water Level (270)	1.0058	5.0076	0	11.929	Water Level (in)
LDP-106	Bottom of Core to Lower Core Plate Uncompensated Water Level (180)	0.9985	4.9732	0	8.198	Water Level (in)
LDP-107	Bottom of Core to Lower Core Plate Uncompensated Water Level (270)	0.9958	4.9713	0	8.223	Water Level (in)
LDP-108	Bottom of Core to Lower Core Plate Uncompensated Water Level (0)	0.9953	4.9683	0	8.562	Water Level (in)
LDP-109	Lower Core Plate to Mid-Core Spacer Grid Uncompensated Water Level (0)	0.9988	4.984	0	19.763	Water Level (in)
LDP-110	Mid-Core Spacer Grid to Upper-Core Spacer Grid Uncompensated Water Level (0)	0.9991	4.9909	0	20.02	Water Level (in)
LDP-112	Upper Core Plate to DVI Uncompensated Water Level (0)	0.9963	4.9755	0	4.696	Water Level (in)
LDP-113	DVI to Bottom of Upper Support Plate Uncompensated Water Level (0)	0.9986	4.9849	0	15.614	Water Level (in)
LDP-115	Upper Support Plate to Top of Rx Uncompensated Water Level (0)	0.9996	4.9896	0	24.28	Water Level (in)
LDP-116	Bottom of Rx to Bottom of Bypass Holes Uncompensated Water Level (270)	0.9949	4.9638	0	77.59	Water Level (in)
LDP-117	Upper Core Spacer Grid to DVI Uncompensated Water Level (180)	0.9983	4.9838	0	11.383	Water Level (in)
LDP-118	Lower Core Plate to Upper Core Plate Uncompensated Water Level (270)	0.9988	4.9848	0	39.98	Water Level (in)
LDP-119	Lower Core Plate to Upper Core Support Grid Uncompensated Water Level (180)	0.9996	4.988	0	40.26	Water Level (in)
LDP-127	Rx Wide Range Uncompensated Water Level	1.0007	4.999	0	98.97	Water Level (in)
LDP-138	Upper Core Spacer Grid to Bottom of Upper Support Plate Uncompensated Water Level (180)	0.9946	4.9639	0	39.3	Water Level (in)
LDP-139	Top of Lower Core Plate to Upper Core Spacer Grid Uncompensated Water Level	0.9982	4.9837	0	24.166	Water Level (in)
LDP-140	Bottom of Rx to Bottom of Flow Holes (180) Uncompensated Water Level	1.0014	4.9981	0	78.02	Water Level (in)
LDP-141	Upper Core Plate to Lower Support Plate Uncompensated Water Level	0.9994	4.9843	0	20.135	Water Level (in)
LDP-201	CL-1 Uncompensated Water Level	1.0002	4.9961	0	2.496	Water Level (in)
LDP-202	CL-2 Uncompensated Water Level	0.9994	4.9924	0	2.223	Water Level (in)
LDP-203	CL-3 Uncompensated Water Level	0.9994	4.9923	0	2.532	Water Level (in)
LDP-204	CL-4 Uncompensated Water Level	0.9927	4.9594	0	2.47	Water Level (in)
LDP-205	HL-1 Uncompensated Water Level	0.9945	4.9663	0	4.085	Water Level (in)
LDP-206	HL-2 Uncompensated Water Level	0.9944	4.9653	0	4.013	Water Level (in)
LDP-207	SG-1 to HL-1 Elbow Plenum Uncompensated Water Level	0.9972	4.9779	0	17.91	Water Level (in)

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
LDP-208	SG-2 to HL-2 Elbow Plenum Uncompensated Water Level	0.9969	4.9825	0	19.247	Water Level (in)
LDP-209	SG-1 to HL-1 Plenum Uncompensated Water Level	1.0002	4.9954	0	10.939	Water Level (in)
LDP-210	SG-2 to CL-4 Plenum Uncompensated Water Level	0.9943	4.9677	0	16.988	Water Level (in)
LDP-211	SG-1 to CL-3 Plenum Uncompensated Water Level	0.993	4.9613	0	16.793	Water Level (in)
LDP-212	SG-2 to CL-2 Plenum Uncompensated Water Level	0.9982	4.9836	0	16.772	Water Level (in)
LDP-213	SG-1 to CL-1 Plenum Uncompensated Water Level	0.9978	4.9864	0	16.747	Water Level (in)
LDP-214	SG-2 to HL-2 Plenum Uncompensated Water Level	1.0002	4.9953	0	11.571	Water Level (in)
LDP-215	SG-1 Long Tube to HL Uncompensated Water Level	0.9992	4.99	0	102.06	Water Level (in)
LDP-216	SG-2 Short Tube to HL Uncompensated Water Level	0.9955	4.9717	0	95.55	Water Level (in)
LDP-217	SG-1 Short Tube to HL Uncompensated Water Level	0.9932	4.9618	0	96.25	Water Level (in)
LDP-218	SG-2 Long Tube to HL Uncompensated Water Level	0.9943	4.9658	0	103.14	Water Level (in)
LDP-219	SG-1 Long Tube to CL Uncompensated Water Level	0.9992	4.9867	0	102.45	Water Level (in)
LDP-220	SG-2 Short Tube to CL Uncompensated Water Level	0.9971	4.9786	0	96	Water Level (in)
LDP-221	SG-1 Short Tube to CL Uncompensated Water Level	0.9986	4.985	0	95.98	Water Level (in)
LDP-222	SG-2 Long Tube to CL Uncompensated Water Level	0.9947	4.9628	0	102.71	Water Level (in)
LDP-301	SG-1 WR Uncompensated Water Level	1.0006	5.0022	0	119.25	Water Level (in)
LDP-302	SG-2 WR Uncompensated Water Level	1.0003	4.9995	0	119.02	Water Level (in)
LDP-303	SG-1 NR Uncompensated Water Level	0.9934	4.9699	0	31.81	Water Level (in)
LDP-304	SG-2 NR Uncompensated Water Level	0.995	4.9748	0	31.52	Water Level (in)
LDP-401	ACC-1 Uncompensated Water Level	0.9951	4.987	0	38.26	Water Level (in)
LDP-402	ACC-2 Uncompensated Water Level	1.0332	5.166	0	38.34	Water Level (in)
LDP-501	CMT-1 NR Uncompensated Water Level (Bottom)	0.9986	4.9834	0	5.31	Water Level (in)
LDP-502	CMT-2 WR Uncompensated Water Level	1.0396	5.1958	0	57.5	Water Level (in)
LDP-503	CMT-1 NR Uncompensated Water Level (Middle)	0.9979	4.984	0	46.77	Water Level (in)
LDP-504	CMT-2 NR Uncompensated Water Level (Bottom)	0.9972	4.9793	0	5.226	Water Level (in)
LDP-505	CMT-1 NR Uncompensated Water Level (Top)	1	4.994	0	5.486	Water Level (in)
LDP-506	CMT-2 NR Uncompensated Water Level (Middle)	0.9975	4.9823	0	46.96	Water Level (in)
LDP-507	CMT-1 WR Uncompensated Water Level	1.0383	5.1887	0	57.5	Water Level (in)
LDP-508	CMT-2 NR Uncompensated Water Level (Top)	0.9994	4.9913	0	5.309	Water Level (in)
LDP-509	CL-3 to CMT-1 Balance Line Uncompensated Water Level	0.9968	4.9772	0	78.84	Water Level (in)
LDP-510	CL-1 to CMT-2 Balance Line Uncompensated Water Level	0.9942	4.9653	0	78.28	Water Level (in)
LDP-601	PZR WR Uncompensated Water Level	0.9991	5.0006	0	140.47	Water Level (in)
LDP-602	PZR Surge Line Uncompensated Water Level	0.997	4.9777	0	47.5	Water Level (in)
LDP-605	PZR Upper Surge Line Pipe Uncompensated Water Level	0.9963	4.9735	0	3.533	Water Level (in)
LDP-606	PZR Surge Line Pipe Level at PZR Inlet Uncompensated Water Level	0.9958	4.9724	0	18.696	Water Level (in)
LDP-607	PZR Middle Surge Line Pipe Uncompensated Water Level	0.996	4.9737	0	4.127	Water Level (in)
LDP-608	PZR Lower Surge Line Pipe Uncompensated Water Level	0.9964	4.9731	0	3.82	Water Level (in)
LDP-609	PZR Surge Line Pipe Uncompensated Water Level at HL-2	1.0011	4.996	0	14.717	Water Level (in)
LDP-610	ADS1-3 Separator Uncompensated Water Level	1.0399	5.193	0	45.24	Water Level (in)
LDP-611	ADS4-1 Separator Uncompensated Water Level	1.0342	5.1628	0	55.97	Water Level (in)
LDP-612	ADS4-2 Separator Uncompensated Water Level	1.0386	5.1859	0	56.6	Water Level (in)
LDP-701	IRWST Uncompensated Water Level	1.0048	5.0202	0	115.8	Water Level (in)
LDP-801	PRHR HX Inlet Head Uncompensated Water Level	1.0013	4.9945	0	6.971	Water Level (in)
LDP-802	PRHR HX WR Uncompensated Water Level	0.9998	4.9871	0	57.08	Water Level (in)
LDP-901	Primary Sump Uncompensated Water Level	1.0015	5.0016	0	104.36	Water Level (in)
LDP-902	Secondary Sump Uncompensated Water Level	1.0007	5.0018	0	102.56	Water Level (in)
LDP-903	CRT Uncompensated Water Level	1.0346	5.1669	0	32.358	Water Level (in)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
LDP-905	Break Separator Uncompensated Water Level	1.0378	5.1788	0	130.68	Water Level (in)
LT-120	Rx Vessel Capacitance Probe Water Level	1.0042	5.0053	50	99	Water Level (in)
PT-001	MFP Discharge Pressure	1.0121	5.0658	0	600	Pressure (psig)
PT-002	SG 2 (FVM-003) Steam Pressure	0.9962	4.9759	0	500	Pressure (psig)
PT-003	Lab Barometer	0.9944	4.9656	10	20	Pressure (psia)
PT-004	U-Tube Inlet (FVM-002) Steam Pressure	1.002	5.0031	0	400	Pressure (psig)
PT-009	SG-1 PORV Blowdown Pressure	0.9983	4.9816	0	300	Pressure (psig)
PT-010	SG-2 PORV Blowdown Pressure	1.0004	4.9924	0	300	Pressure (psig)
PT-101	CL-1 Pressure at Rx Flange	0.9986	4.9877	0	500	Pressure (psig)
PT-102	CL-2 Pressure at Rx Flange	0.9958	4.9706	0	10	Pressure (psig)
PT-103	CL-3 Pressure at Rx Flange	0.9946	4.9646	0	10	Pressure (psig)
PT-104	CL-4 Pressure at Rx Flange	0.9988	4.9882	0	500	Pressure (psig)
PT-107	Rx Upper Head Pressure	1.0096	5.0478	0	500	Pressure (psig)
PT-108	Bottom of Rx Pressure	0.9938	4.9637	0	500	Pressure (psig)
PT-109	DVI-1 Pressure at Rx Flange	0.998	4.9874	0	500	Pressure (psig)
PT-110	DVI-2 Pressure at Rx Flange	0.9984	4.9825	0	10	Pressure (psig)
PT-111	Rx Annular Pressure at Flow Bypass Holes	0.9982	4.9886	0	500	Pressure (psig)
PT-112	Rx Annular Pressure at Bottom of Rx	0.9958	4.977	0	10	Pressure (psig)
PT-113	Rx Pressure Below Mid-Core Spacer Grid	0.9921	4.9616	0	500	Pressure (psig)
PT-201	SG-1 Long Tube Pressure (Top)	1.0008	4.9935	0	500	Pressure (psig)
PT-202	HL-2 Pressure at SG-2 Flange	0.9978	4.9841	0	500	Pressure (psig)
PT-203	CL Break Pressure at Break Valve	0.9982	4.988	0	500	Pressure (psig)
PT-204	SG-2 Long Tube Pressure (Top)	1.0005	4.9974	0	500	Pressure (psig)
PT-205	HL-1 Pressure at SG-1 Flange	0.9993	4.9842	0	10	Pressure (psig)
PT-206	HL Break Pressure at Break Valve	0.9982	4.9869	0	500	Pressure (psig)
PT-301	SG-1 Pressure	1.0123	5.0617	0	500	Pressure (psig)
PT-302	SG-2 Pressure	1.0219	5.1023	0	500	Pressure (psig)
PT-401	ACC-1 Pressure	0.9993	4.9908	0	300	Pressure (psig)
PT-402	ACC-2 Pressure	0.9975	4.9802	0	300	Pressure (psig)
PT-501	U-Tube Outlet (FVM-001) Steam Pressure	0.9979	4.982	0	300	Pressure (psig)
PT-502	CMT-2 Pressure	0.998	4.9869	0	500	Pressure (psig)
PT-602	PZR NR Pressure	0.9988	4.9747	300	400	Pressure (psig)
PT-603	PZR NR Pressure	0.9944	4.9616	0	10	Pressure (psig)
PT-604	PZR WR Pressure	0.9942	4.9794	0	500	Pressure (psig)
PT-605	ADS1-3 Separator Pressure	0.9966	4.9725	0	100	Pressure (psig)
PT-606	IRWST Sparger Line Pressure	0.995	4.9653	0	100	Pressure (psig)
PT-610	ADS4-2 Separator Pressure	0.9983	4.9845	0	10	Pressure (psig)
PT-611	ADS4-1 Separator Pressure	0.9977	4.9806	0	10	Pressure (psig)
PT-701	IRWST Pressure	1.0087	5.0436	0	15	Pressure (psig)
PT-801	CVSP Discharge Pressure	0.9993	4.9909	0	500	Pressure (psig)
PT-802	RNSP Discharge Pressure	0.9962	4.9768	0	250	Pressure (psig)
PT-901	Primary Sump Pressure	0.9947	4.9659	0	10	Pressure (psig)
PT-902	BAMS Header Pressure	1.0013	4.9988	0	16	Pressure (psig)
PT-905	Break Separator Pressure	1.0067	5.0265	0	20	Pressure (psig)
TF-005	Lab Ambient Temperature at Ground Level	0	1000	0	1000	Fluid Temperature (F)
TF-006	Lab Ambient Temperature at Second Level	0	1000	0	1000	Fluid Temperature (F)
TF-007	Lab Ambient Temperature at Third Level	0	1000	0	1000	Fluid Temperature (F)

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-009	SG-1 PORV Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-010	SG-2 PORV Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-101	CL-3 Temperature (SC-101)	40	450	40	450	Fluid Temperature (F)
TF-101-1.3D-2	CL-1 Downcomer Temperature at 1.3D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-2D-1	CL-1 Downcomer Temperature at 2D, 120 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-2D-2	CL-1 Downcomer Temperature at 2D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-2D-3	CL-1 Downcomer Temperature at 2D, 150 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-3D-1	CL-1 Downcomer Temperature at 3D, 104 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-3D-2	CL-1 Downcomer Temperature at 3D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-3D-3	CL-1 Downcomer Temperature at 3D, 166 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-4D-1	CL-1 Downcomer Temperature at 4D, 90 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-4D-2	CL-1 Downcomer Temperature at 4D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-8D-1	CL-1 Downcomer Temperature at 8D, 90 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-8D-2	CL-1 Downcomer Temperature at 8D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102	CL-4 Temperature (SC-102)	40	450	40	450	Fluid Temperature (F)
TF-102-1.3D-2	CL-2 Downcomer Temperature at 1.3D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-2D-1	CL-2 Downcomer Temperature at 2D, 210 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-2D-2	CL-2 Downcomer Temperature at 2D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-2D-3	CL-2 Downcomer Temperature at 2D, 240 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-3D-1	CL-2 Downcomer Temperature at 3D, 194 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-3D-2	CL-2 Downcomer Temperature at 3D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-3D-3	CL-2 Downcomer Temperature at 3D, 256 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-4D-2	CL-2 Downcomer Temperature at 4D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-8D-1	CL-2 Downcomer Temperature at 8D, 180 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-8D-2	CL-2 Downcomer Temperature at 8D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-1.3D-2	CL-3 Downcomer Temperature at 1.3D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-2D-1	CL-3 Downcomer Temperature at 2D, 30 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-2D-2	CL-3 Downcomer Temperature at 2D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-2D-3	CL-3 Downcomer Temperature at 2D, 60 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-3D-1	CL-3 Downcomer Temperature at 3D, 14 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-3D-2	CL-3 Downcomer Temperature at 3D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-3D-3	CL-3 Downcomer Temperature at 3D, 76 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-4D-2	CL-3 Downcomer Temperature at 4D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-8D-1	CL-3 Downcomer Temperature at 8D, 0 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-8D-2	CL-3 Downcomer Temperature at 8D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-1.3D-2	CL-4 Downcomer Temperature at 1.3D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-2D-1	CL-4 Downcomer Temperature at 2D, 300 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-2D-2	CL-4 Downcomer Temperature at 2D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-2D-3	CL-4 Downcomer Temperature at 2D, 330 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-1	CL-4 Downcomer Temperature at 3D, 284 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-1.5	CL-4 Downcomer Temperature at 3D, 300 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-2	CL-4 Downcomer Temperature at 3D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-2.5	CL-4 Downcomer Temperature at 3D, 330 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-3	CL-4 Downcomer Temperature at 3D, 345 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-1	CL-4 Downcomer Temperature at 4D, 270 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-1.3	CL-4 Downcomer Temperature at 4D, 285 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-1.6	CL-4 Downcomer Temperature at 4D, 300 degrees	0	1000	0	1000	Fluid Temperature (F)

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-104-4D-2	CL-4 Downcomer Temperature at 4D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-2.3	CL-4 Downcomer Temperature at 4D, 330 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-2.6	CL-4 Downcomer Temperature at 4D, 345 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-1	CL-4 Downcomer Temperature at 8D, 270 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-1.3	CL-4 Downcomer Temperature at 8D, 285 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-1.6	CL-4 Downcomer Temperature at 8D, 300 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-2	CL-4 Downcomer Temperature at 8D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-2.3	CL-4 Downcomer Temperature at 8D, 330 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-2.6	CL-4 Downcomer Temperature at 8D, 345 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-105	CL-1 Temperature (SC-105)	40	450	40	450	Fluid Temperature (F)
TF-106	CL-2 Temperature (SC-106)	40	450	40	450	Fluid Temperature (F)
TF-107	CL-1/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-108	CL-2/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-113	DVI-1/Rx Flange at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-114	DVI-2/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-115	DVI-1/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-116	DVI-2/Rx Flange at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-118	Lower Rx Vessel Layer Y-Y at 30 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-120	Top of Rx at 8.5 inches & 350 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-126	Lower Rx Vessel Layer A-A at 225 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-127	Lower Rx Vessel Layer A-A at 315 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-128	Lower Rx Vessel Layer C-C at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-129	Lower Rx Vessel Layer C-C at 32 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-130	Lower Rx Vessel Layer G-G at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-131	Lower Rx Vessel Layer G-G at 11.3 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-132	Upper Rx Vessel Layer F-F at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-133	Upper Rx Vessel Layer F-F at 8 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-134	Upper Rx Vessel Layer E-E at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-135	Upper Rx Vessel Layer E-E at 6.2 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-140	HL-2 Temperature at Rx Flange (SC-140)	40	450	40	450	Fluid Temperature (F)
TF-141	HL-1 Temperature at Rx Flange (SC-141)	40	450	40	450	Fluid Temperature (F)
TF-142	HL-2/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-143	HL-1/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-147	Upper Rx Vessel Layer I-I at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-148	Upper Rx Vessel Layer I-I at 188 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-149	Upper Rx Vessel Layer H-H at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-150	Upper Rx Vessel Layer H-H at 186.2 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-151	Upper Rx Vessel Layer E-E at 186.2 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-152	Upper Rx Vessel Layer E-E at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-153	Upper Rx Vessel Layer F-F at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-154	Upper Rx Vessel Layer F-F at 188 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-155	Lower Rx Vessel Layer G-G at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-156	Lower Rx Vessel Layer G-G at 191.3 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-157	Lower Rx Vessel Layer C-C at 212 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-158	Lower Rx Vessel Layer C-C at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-162	Lower Rx Vessel Layer A-A at 45 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-163	Lower Rx Vessel Layer A-A at 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-164	Upper Rx Vessel Layer H-H at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-165	Upper Rx Vessel Layer H-H at 6.2 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-166	Upper Rx Vessel Layer I-I at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-167	Rx Heater Rod B2-319 at 40.13 inches	0	1000	0	1000	Fluid Temperature (F)
TF-168	Upper Rx Vessel Layer K-K at 270 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-169	Upper Rx Vessel Layer M-M at 90 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-171	Top of Rx Down to within 0.50 inches of Upper Support Plate Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-173	Lower Rx Vessel Layer AA-AA at 270 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-201	CL-1 at RCP-1 Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-202	CL-2 at RCP-2 Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-203	U-Tube Outlet (FVM-001) Steam Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-204	CL-4 at RCP-4 Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-205	HL-1 Temperature at SG-1 Head (SC-205)	40	450	40	450	Fluid Temperature (F)
TF-206	HL-2 Temperature at SG-2 Head (SC-206)	40	450	40	450	Fluid Temperature (F)
TF-207	SG-1 Short Tube at Middle Outlet Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-208	SG-2 Short Tube at Middle Outlet Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-209	SG-1 Short Tube at Middle Inlet Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-210	SG-2 Short Tube at Middle Inlet Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-211	SG-1 Long Tube at Middle Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-212	SG-2 Long Tube at Middle Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-213	SG-1 Long Tube at Middle Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-214	SG-2 Long Tube at Middle Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-215	SG-1 Short Tube at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-216	SG-2 Short Tube at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-217	SG-1 Long Tube at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-218	SG-2 Long Tube at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-222	CL-4 T/C Rod at 3.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-223	CL-3 T/C Rod at 2.50 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-224	CL-4 T/C Rod at 2.50 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-225	CL-3 T/C Rod at 1.75 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-226	CL-4 T/C Rod at 1.75 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-227	CL-3 T/C Rod at 1.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-228	CL-4 T/C Rod at 1.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-229	CL-3 T/C Rod at 0.75 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-230	CL-4 T/C Rod at 0.75 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-231	CL-3 T/C Rod at 0.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-232	CL-4 T/C Rod at 0.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-251-1	CL-1 Loop Seal Upper Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-251-2	CL-1 Loop Seal Middle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-251-3	CL-1 Loop Seal Lower Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-252-1	CL-2 Loop Seal Upper Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-252-2	CL-2 Loop Seal Middle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-252-3	CL-2 Loop Seal Lower Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-253-1	CL-3 Loop Seal Upper Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-253-2	CL-3 Loop Seal Middle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-253-3	CL-3 Loop Seal Lower Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-254-1	CL-4 Loop Seal Upper Temperature	0	1000	0	1000	Fluid Temperature (F)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-254-2	CL-4 Loop Seal Middle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-254-3	CL-4 Loop Seal Lower Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-255	CL-1 Safety Injection Nozzle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-256	CL-2 Safety Injection Nozzle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-257	CL-3 Safety Injection Nozzle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-258	CL-4 Safety Injection Nozzle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-301	SG-1 Steam Temperature (SC-301)	40	450	40	450	Fluid Temperature (F)
TF-305	SG-1 Downcomer HL Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-306	SG-2 Downcomer HL Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-307	SG-1 Downcomer CL Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-308	SG-2 Downcomer CL Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-310	SG-2 Steam Temperature (SC-310)	40	450	40	450	Fluid Temperature (F)
TF-311	SG-1 Feed Header Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-312	SG-2 Feed Header Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-401	ACC-1 Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-402	ACC-2 Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-403	ACC-1 N2Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-404	ACC-2 N2 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-405	ACC-1 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-406	ACC-2 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-501	CMT-1 Long T/C Rod at 0.30 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-502	CMT-2 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-503	CMT-1 at 1/2 Lower Head Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-504	CMT-2 Long T/C Rod at 0.30 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-505	CMT-1 at 20% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-506	CMT-2 at 1/2 Lower Head Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-507	CMT-1 Long T/C Rod at 20.87 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-508	CMT-2 at 20% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-510	CMT-2 Long T/C Rod at 20.87 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-511	CMT-1 at 50% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-513	CMT-1 Long T/C Rod at 40.59 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-514	CMT-2 at 50% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-515	CMT-1 Long T/C Rod at 43.41 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-516	CMT-2 Long T/C Rod at 40.59 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-517	CMT-1 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-518	CMT-2 Long T/C Rod at 43.41 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-519	CMT-1 Long T/C Rod at 46.23 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-520	CMT-2 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-521	CMT-1 at 75% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-522	CMT-2 Long T/C Rod at 46.23 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-523	CMT-1 Long T/C Rod at 49.05 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-524	CMT-2 at 75% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-525	CMT-1 at 1/2 Upper-Head Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-527	CMT-1 Long T/C Rod at 51.87 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-528	CMT 2/3 HEAD TEMP	0	1000	0	1000	Fluid Temperature (F)
TF-529	CMT-1 Long T/C Rod at 56.61 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-531	CMT-1 Balance Line at CMT Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-532	CMT-2 Long T/C Rod at 56.61 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-533	CMT-1 CL Balance Line at CL-3 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-535	CMT-1 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-536	CMT-2 CL Balance Line at CL-1 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-537	CMT-1 at 20% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-538	CMT-2 at 20% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-539	CMT-1 at 50% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-540	CMT-2 at 50% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-541	CMT-1 at 60% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-542	CMT-2 at 60% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-543	CMT-1 at 75% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-544	CMT-2 at 75% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-546	CMT-2 Balance Line at CMT Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-547	CMT-1 Long T/C Rod at 54.24 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-548	CMT-2 Long T/C Rod at 54.24 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-549	CMT-1 Discharge Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-550	CMT-2 Discharge Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-551	CMT-1 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-552	CMT-2 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-553	CMT-1 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-554	CMT-2 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-555	CMT-1 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-556	CMT-2 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-557	CMT-1 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-558	CMT-2 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-559	CMT-1 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-560	CMT-2 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-561	CMT-1 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-562	CMT-2 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-563	CMT-1 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-564	CMT-2 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-601	PZR Surge Line at PZR Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-602	ADS1-3 Common Line at PZR Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-603	PZR Surge Line at HL-2 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-605	PZR Water Space Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-608	PZR Temperature (SC-608)	40	450	40	450	Fluid Temperature (F)
TF-609	ADS4-1 Discharge Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-610	ADS4-2 Discharge Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-614	PZR Steam Vent Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-615	ADS1-3 Common Line From PZR Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-616	ADS1-3 Separator Loop Seal Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-617	ADS1-3 Separator Steam Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-618	ADS4-2 Loop Seal Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-619	ADS4-1 Loop Seal Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-620	ADS4-2 Inlet From HL-2 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-621	ADS4-1 Inlet From HL-1 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-622	ADS4-2 Separator Steam Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-623	ADS4-1 Separator Steam Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-701	IRWST/PRHR T/C Rod at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-702	IRWST/PRHR T/C Rod at 7.98 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-703	IRWST/PRHR T/C Rod at 15.97 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-704	IRWST/PRHR T/C Rod at 25.85 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-705	IRWST/PRHR T/C Rod at 35.73 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-706	IRWST/PRHR T/C Rod at 45.61 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-707	IRWST/PRHR T/C Rod at 55.49 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-708	IRWST/PRHR T/C Rod at 65.36 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-709	IRWST/PRHR T/C Rod at 75.24 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-710	IRWST/PRHR T/C Rod at 86.36 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-711	IRWST/PRHR T/C Rod at 97.47 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-712	IRWST/PRHR T/C Rod at 108.59 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-713	IRWST Discharge to DVI-01 at IRWST Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-714	IRWST Discharge to DVI-02 at IRWST Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-715	IRWST Sparger T/C Rod at 8.97 inches Temperature (SC-715)	0	1000	0	1000	Fluid Temperature (F)
TF-716	IRWST Sparger T/C Rod at 36.63 inches Temperature	40	240	40	240	Fluid Temperature (F)
TF-717	IRWST Sparger T/C Rod at 66.34 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-718	IRWST Sparger T/C Rod at 98.45 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-719	IRWST Sparger Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-720	IRWST/DVI-2 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-721	IRWST/DVI-1 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-722	IRWST Steam Exhaust Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-723	IRWST/Primary Sump Overflow Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-801	CVSP Discharge Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-802	RNSP Discharge Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-803	PRHR HX Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-804	PRHR HX Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-805	PRHR HX Long Tube Outlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-806	PRHR HX Short Tube Outlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-808	PRHR HX Short Tube Outlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-809	PRHR HX Long Tube at Center Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-810	PRHR HX Short Tube Inlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-811	PRHR HX Long Tube Inlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-812	PRHR HX Outlet Head Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-813	RNSP Discharge to DVI-1 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-814	RNSP Discharge to DVI-2 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-901	Primary Sump Inlet from Fill Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-902	Secondary Sump Temperature (SC-902)	40	240	40	240	Fluid Temperature (F)
TF-903	Primary Sump Temperature (SC-903)	40	240	40	240	Fluid Temperature (F)
TF-904	Primary Sump/DVI-2 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-905	Primary Sump at Secondary Sump Crossover Level Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-906	Primary Sump Exhaust Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-907	Primary Sump at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-908	Break Separator Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-909	Primary Sump/DVI-1 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-910	CRP Discharge to Primary Sump Temperature	0	1000	0	1000	Fluid Temperature (F)

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-911	CRP Discharge to IRWST Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-912	Break Separator Loop Seal Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-913	Break Separator Steam Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-914	Condensate Return Tank Temperature (SC-914)	40	200	40	200	Fluid Temperature (F)
TF-915	Break Separator 6-inch Steam Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-916	BAMS Header 10-inch Steam Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-917	BAMS Header Temperature (SC-917)	40	240	40	240	Fluid Temperature (F)
TF-918	Break Separator 8-inch Steam Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TH-103	Rx Heater Rod Temperature (SCTH-101-3)	40	1000	40	1000	Internal Rod Temperature (F)
TH-211	Rx Heater Rod Temperature (SCTH-103-3)	40	1000	40	1000	Internal Rod Temperature (F)
TH-305	Rx Heater Rod Temperature (SCTH-304-3)	40	1000	40	1000	Internal Rod Temperature (F)
TH-309	Rx Heater Rod Temperature (SCTH-102-4)	40	1000	40	1000	Internal Rod Temperature (F)
TH-401	Rx Heater Rod Temperature (SCTH-104-4)	40	1000	40	1000	Internal Rod Temperature (F)
TH-507	Rx Heater Rod Temperature (SCTH-314-3)	40	1000	40	1000	Internal Rod Temperature (F)
TH-601	PZR Heater Rod #1	0	1000	0	1000	Internal Rod Temperature (F)
TH-602	PZR Heater Rod #2	0	1000	0	1000	Internal Rod Temperature (F)
TH-603	PZR Heater Rod #3	0	1000	0	1000	Internal Rod Temperature (F)
TH-604	PZR Heater Rod #4	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-2	Core Thermocouple Rod D-001 at 19.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-3	Core Thermocouple Rod D-001 at 25.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-4	Core Thermocouple Rod D-001 at 31.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-5	Core Thermocouple Rod D-001 at 37.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-6	Core Thermocouple Rod D-001 at 43.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-1	Core Thermocouple Rod D-303 at 10.50 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-2	Core Thermocouple Rod D-303 at 19.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-3	Core Thermocouple Rod D-303 at 25.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-4	Core Thermocouple Rod D-303 at 31.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-5	Core Thermocouple Rod D-303 at 37.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-6	Core Thermocouple Rod D-303 at 43.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-1	Core Thermocouple Rod E-308 at 22.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-2	Core Thermocouple Rod E-308 at 34.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-3	Core Thermocouple Rod E-308 at 46.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-4	Core Thermocouple Rod D-001 at 49.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-5	Core Thermocouple Rod D-001 at 51.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-6	Core Thermocouple Rod D-303 at 49.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-1	Core Thermocouple Rod D-313 at 10.50 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-2	Core Thermocouple Rod D-313 at 19.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-3	Core Thermocouple Rod D-313 at 25.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-4	Core Thermocouple Rod D-313 at 31.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-5	Core Thermocouple Rod D-313 at 37.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-6	Core Thermocouple Rod D-313 at 43.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-1	Core Thermocouple Rod F-318 at 28.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-2	Core Thermocouple Rod F-318 at 40.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-3	Core Thermocouple Rod F-318 at 51.86 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-4	Core Thermocouple Rod D-303 at 51.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-5	Core Thermocouple Rod D-313 at 49.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-6	Core Thermocouple Rod D-313 at 51.13 inches	0	1000	0	1000	Internal Rod Temperature (F)

B-71

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TW-104-1.5D-2	CL-4 Downcomer Wall Temperature at 1.5D, 315 degrees	0	1000	0	1000	Wall Temperature (F)
TW-104-3.5D-2	CL-4 Downcomer Wall Temperature at 3.5D, 315 degrees	0	1000	0	1000	Wall Temperature (F)
TW-104-3.5D-3	CL-4 Downcomer Wall Temperature at 3.5D, 345 degrees	0	1000	0	1000	Wall Temperature (F)
TW-201	SG-1 Short Tube Bottom Outlet	0	1000	0	1000	Wall Temperature (F)
TW-203	SG-1 Short Tube Bottom Inlet	0	1000	0	1000	Wall Temperature (F)
TW-208	SG-2 Long Tube Bottom Inlet	0	1000	0	1000	Wall Temperature (F)
TW-601	ADS1-3 Separator Wall Temperature	0	1000	0	1000	Wall Temperature (F)
TW-602	ADS4-2 Separator Wall Temperature	0	1000	0	1000	Wall Temperature (F)
TW-603	ADS4-1 Separator Wall Temperature	0	1000	0	1000	Wall Temperature (F)
TW-801	PRHR HX Long Tube Outlet	0	1000	0	1000	Wall Temperature (F)
TW-802	PRHR HX Short Tube Outlet	0	1000	0	1000	Wall Temperature (F)
TW-805	PRHR HX Short Tube Upper Mid-piece	0	1000	0	1000	Wall Temperature (F)
TW-806	PRHR HX Long Tube Upper Mid-piece	0	1000	0	1000	Wall Temperature (F)
TW-807	PRHR HX Short Tube Inlet	0	1000	0	1000	Wall Temperature (F)
TW-808	PRHR HX Long Tube Inlet	0	1000	0	1000	Wall Temperature (F)
TW-905	Break Separator Wall Temperature	0	1000	0	1000	Wall Temperature (F)



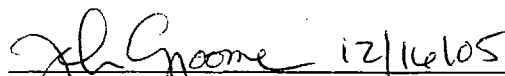
DEPARTMENT OF NUCLEAR ENGINEERING &
RADIATION HEALTH PHYSICS

**ADVANCED THERMAL HYDRAULIC
RESEARCH LABORATORY**

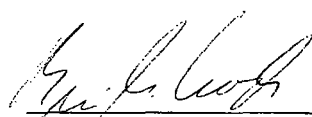
**STEAM GENERATOR U-TUBE CONDENSATION
TEST @ 100 PSIG**

NRC-COND-03

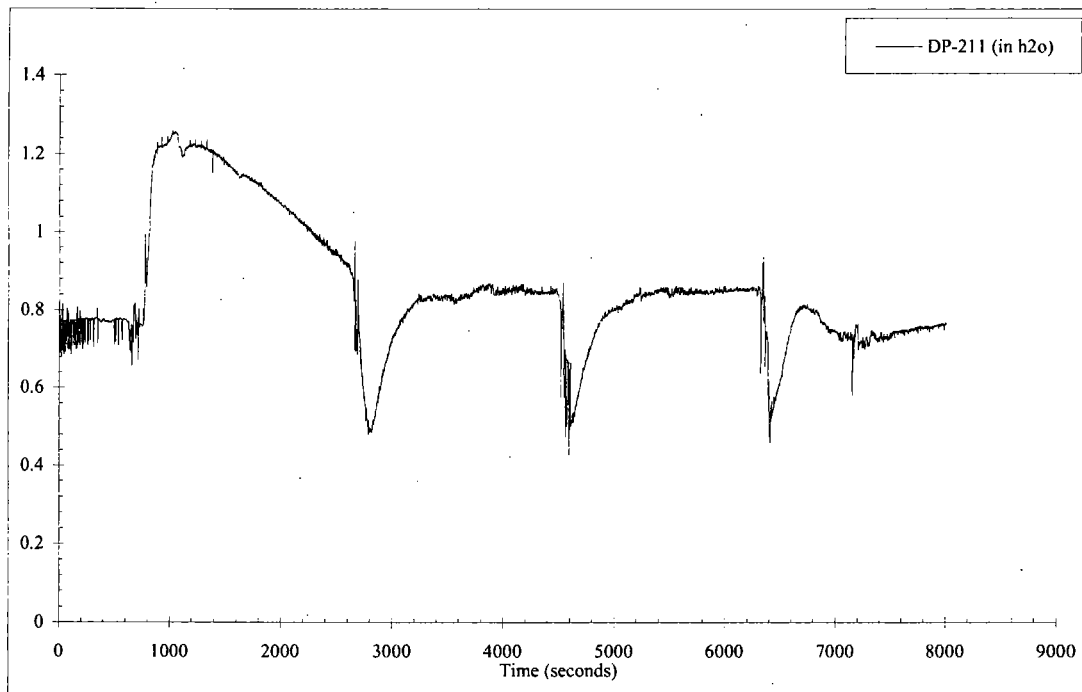
Revision 0

 12/16/05

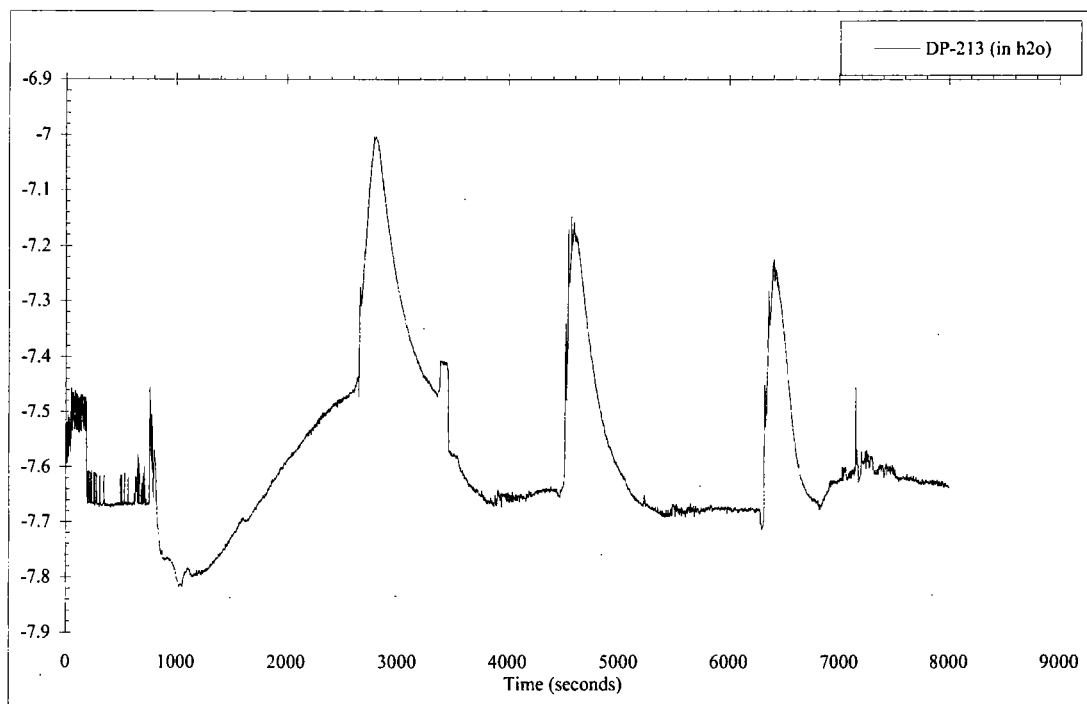
John Groome, Originator Date
Facility Operations Manager
Research Assistant

 12/16/05

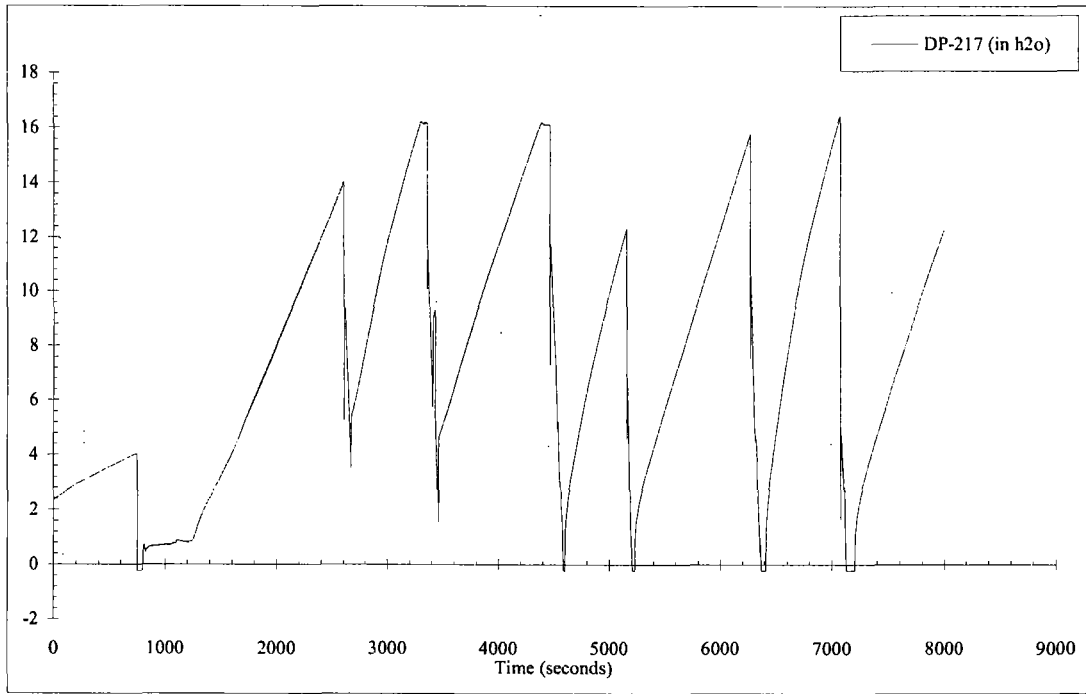
Brian Woods, Approval Date
Program Manager
Assistant Professor



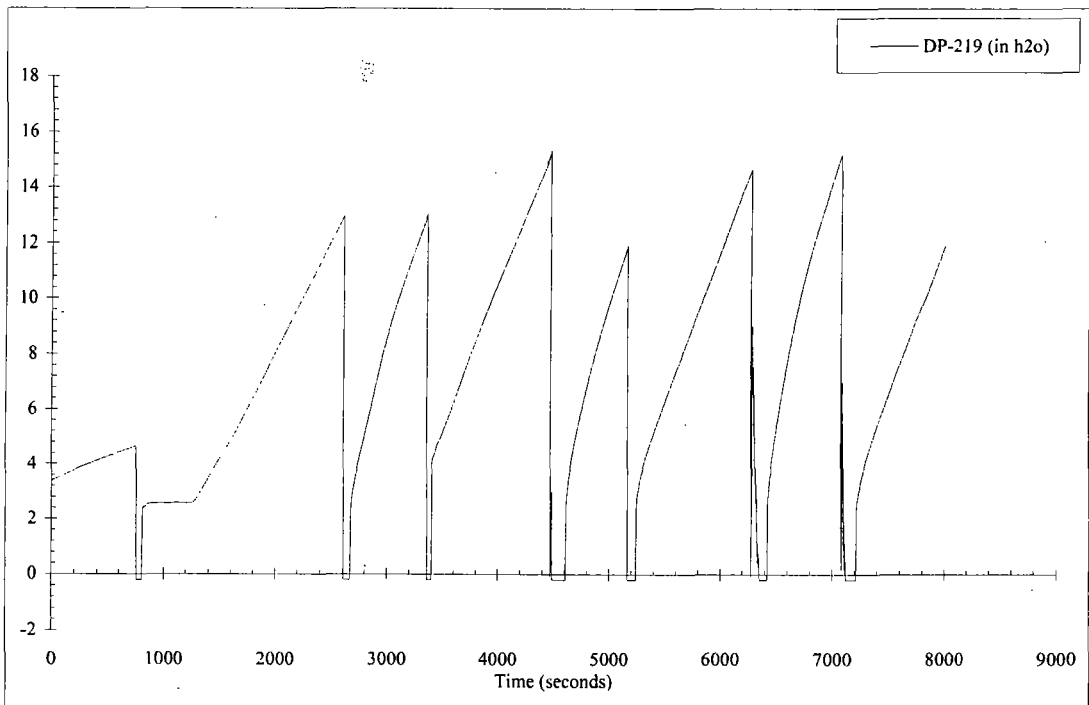
SG-1 Short Tube Entrance Losses



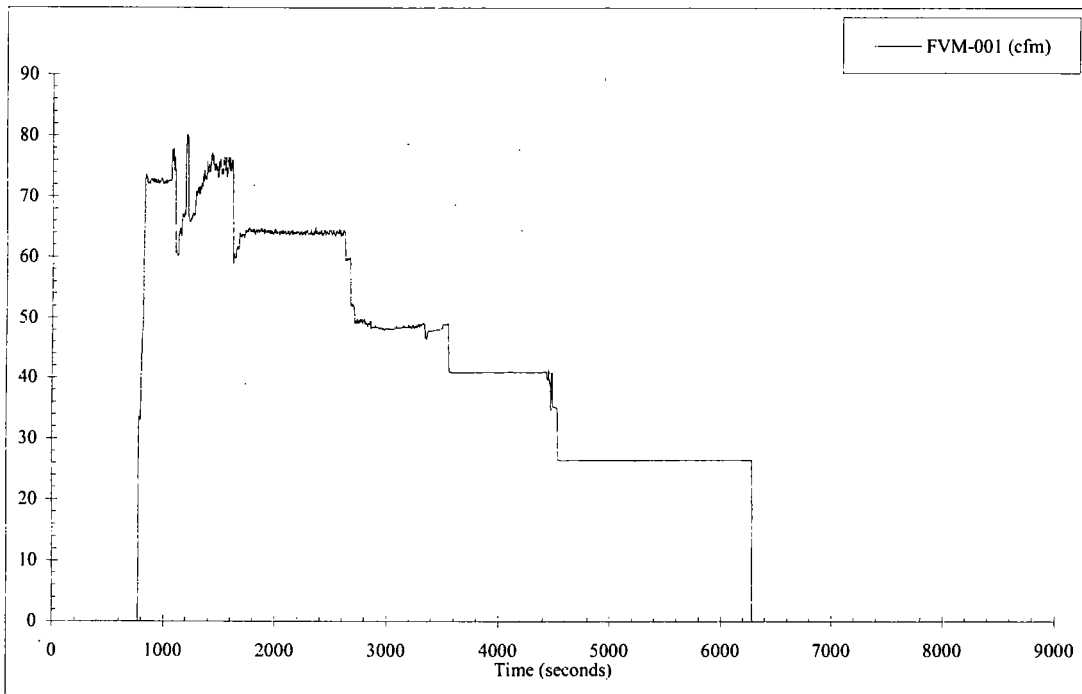
SG-1 Long Tube Exit Losses



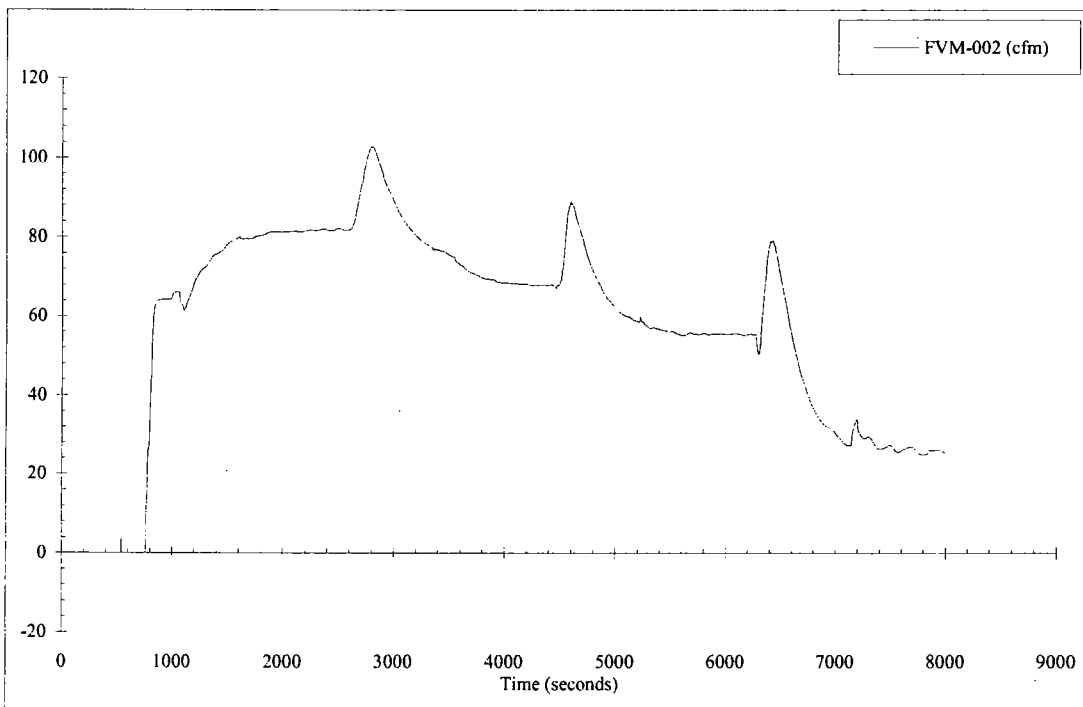
Separator Uncompensated Water Level



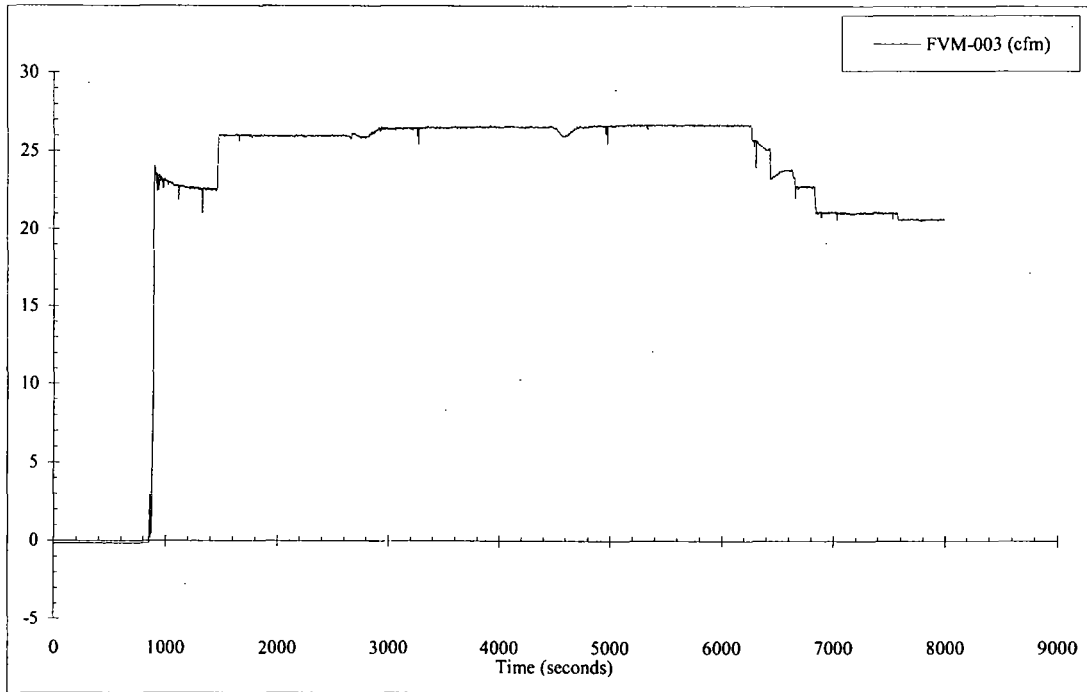
Catch Tank Uncompensated Water Level



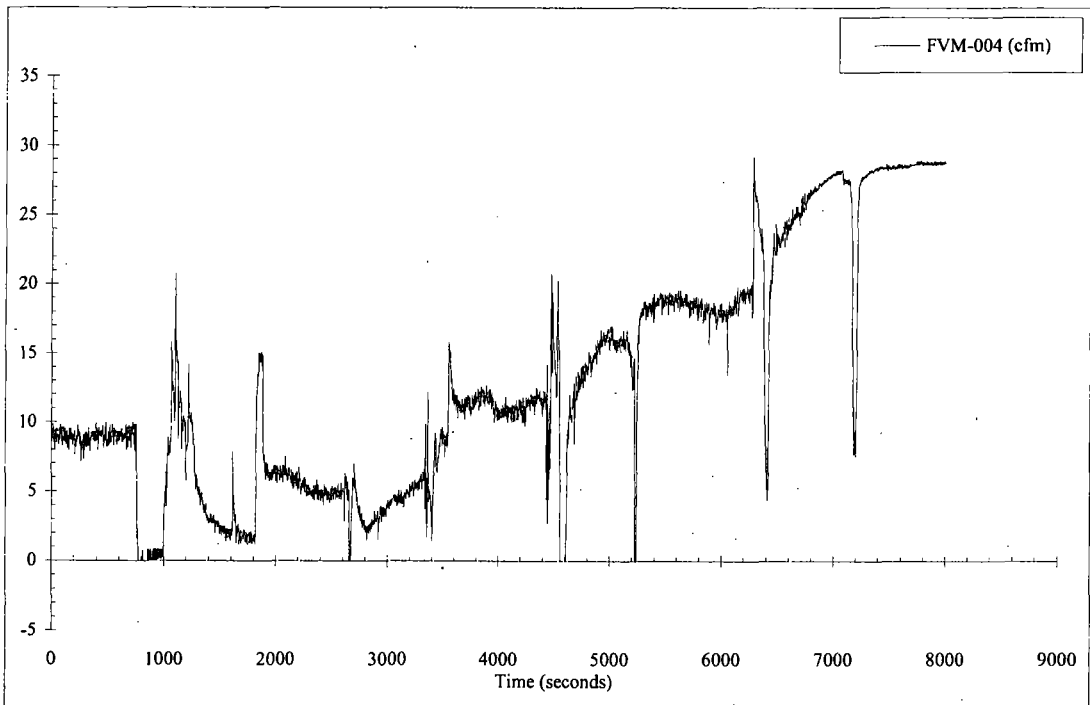
Separator Outlet Steam Flowrate



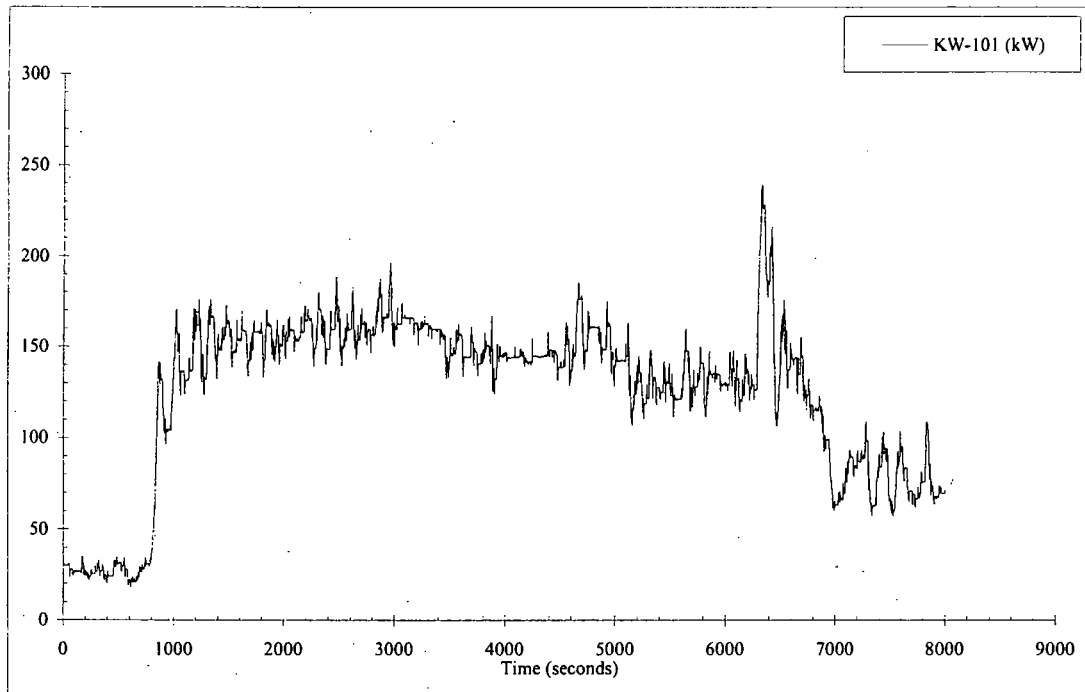
SG-2 Main Steam Flow



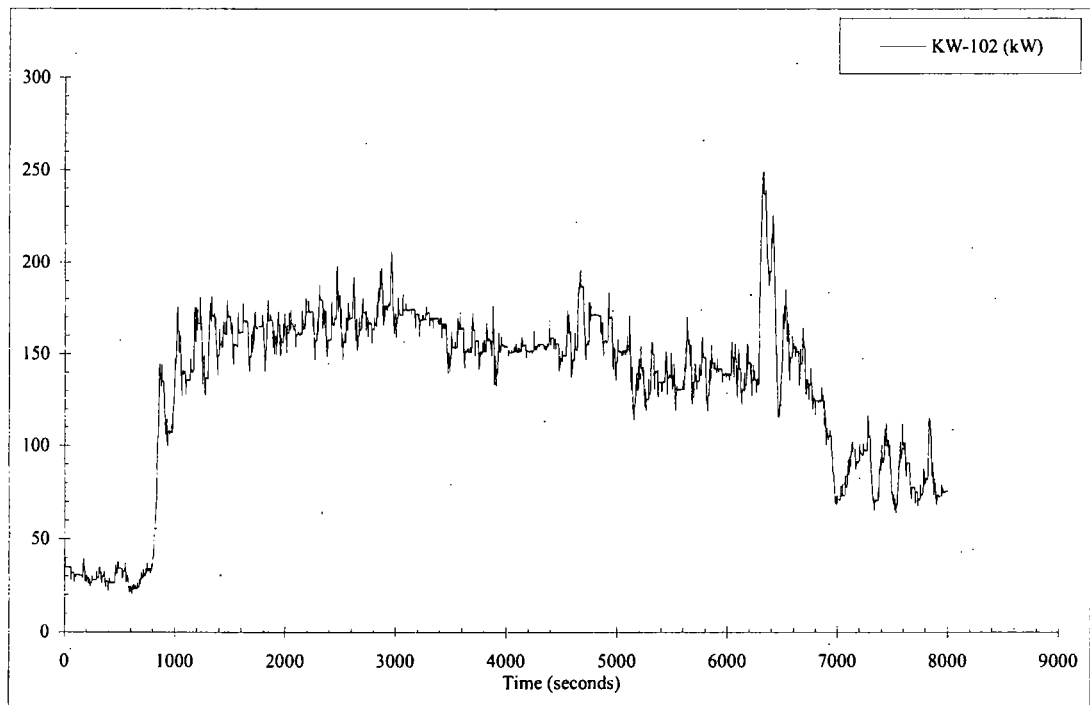
Main Steam Total Flow



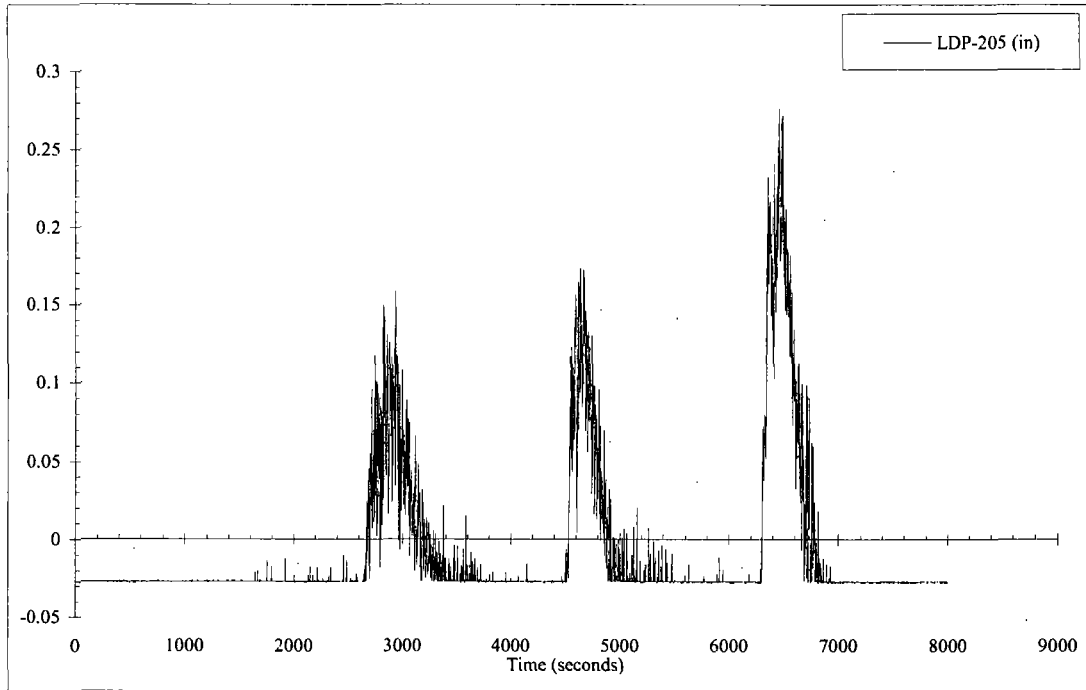
Catch Tank Steam Flow Rate



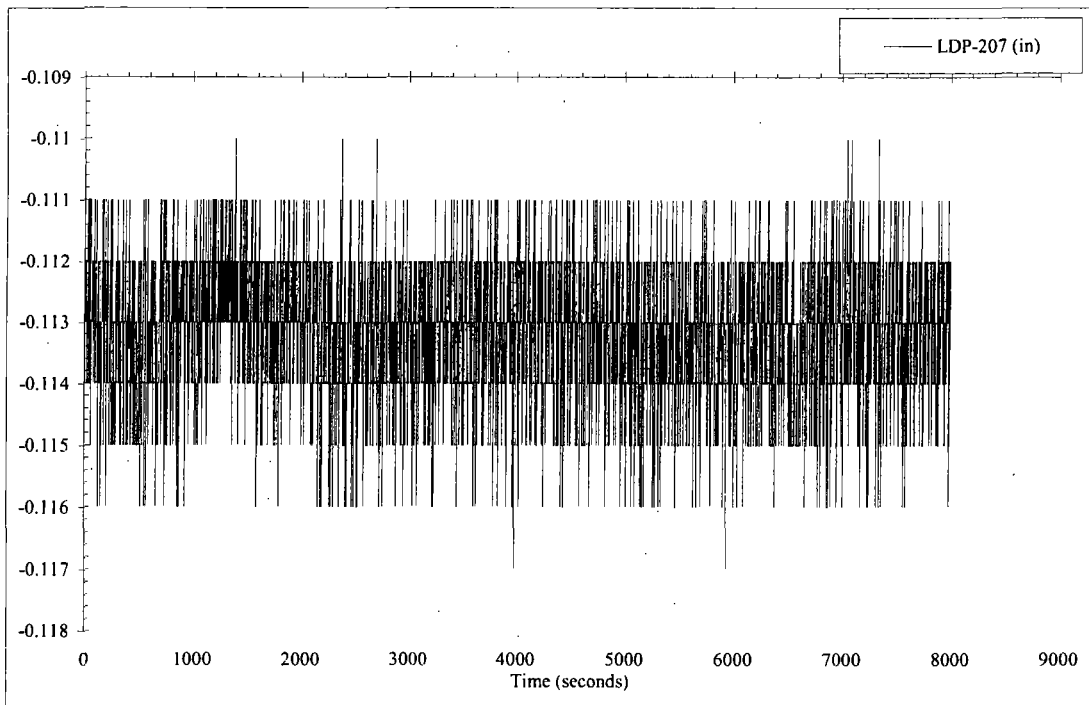
Rx Heater Group 1 Power



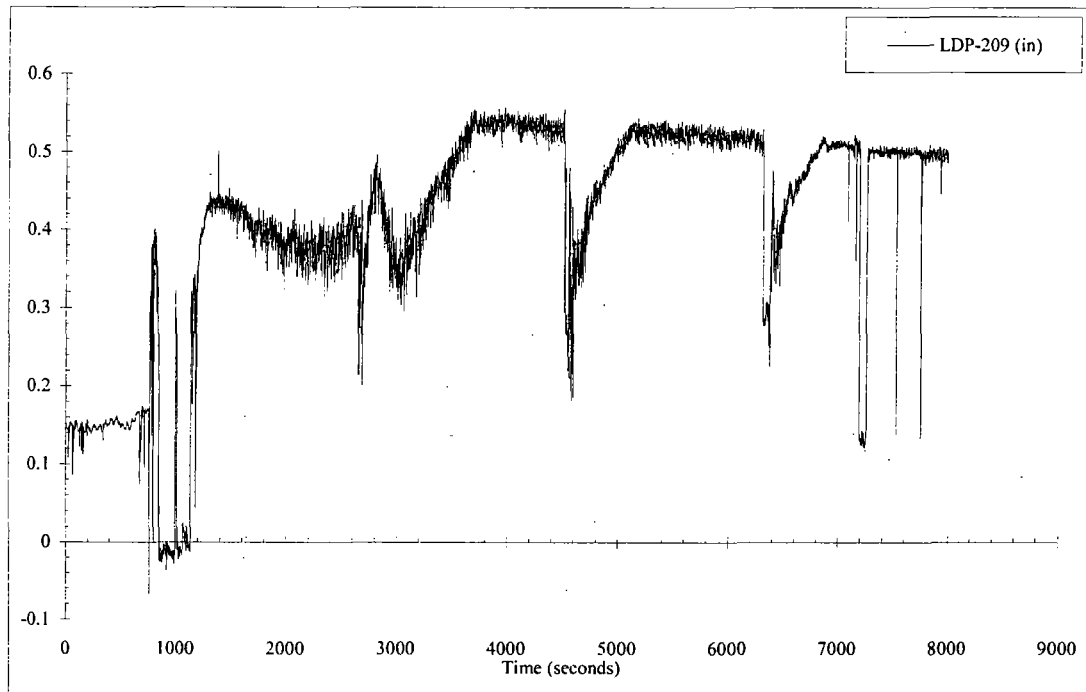
Rx Heater Group 2 Power



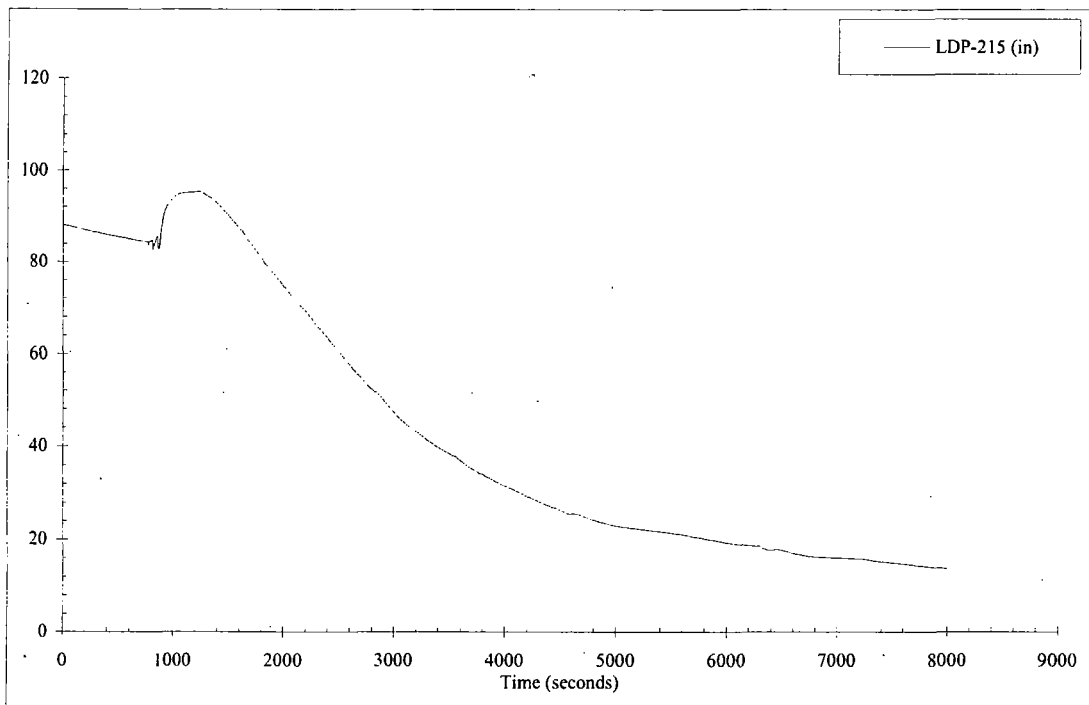
HL-1 Uncompensated Water Level



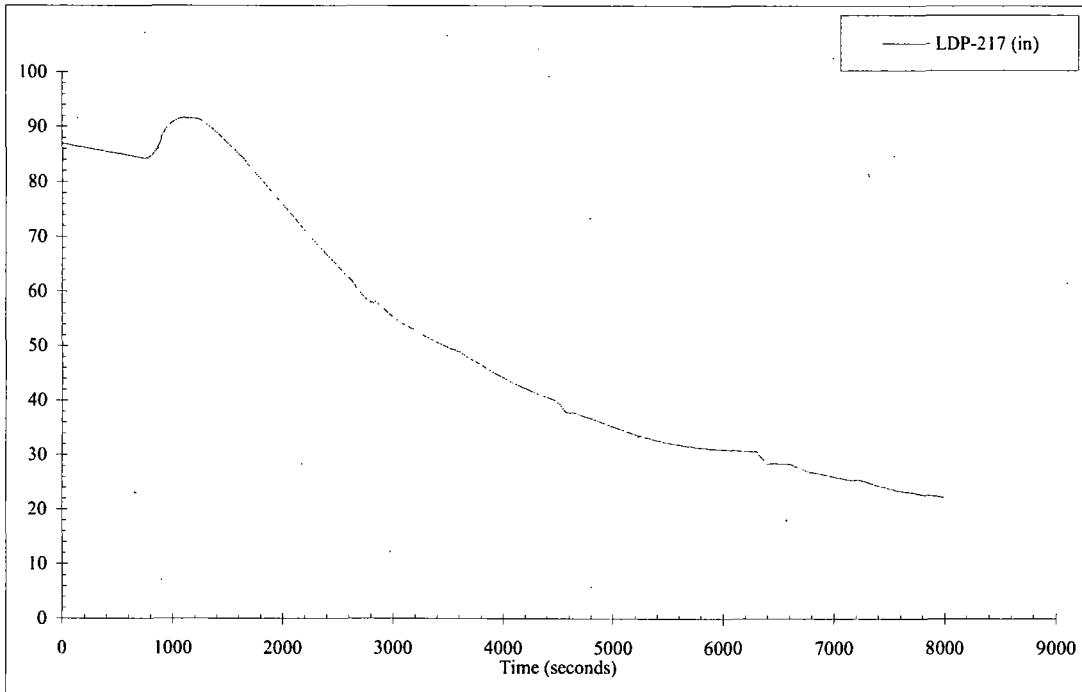
SG-1 to HL-1 Elbow Plenum Uncompensated Water Level



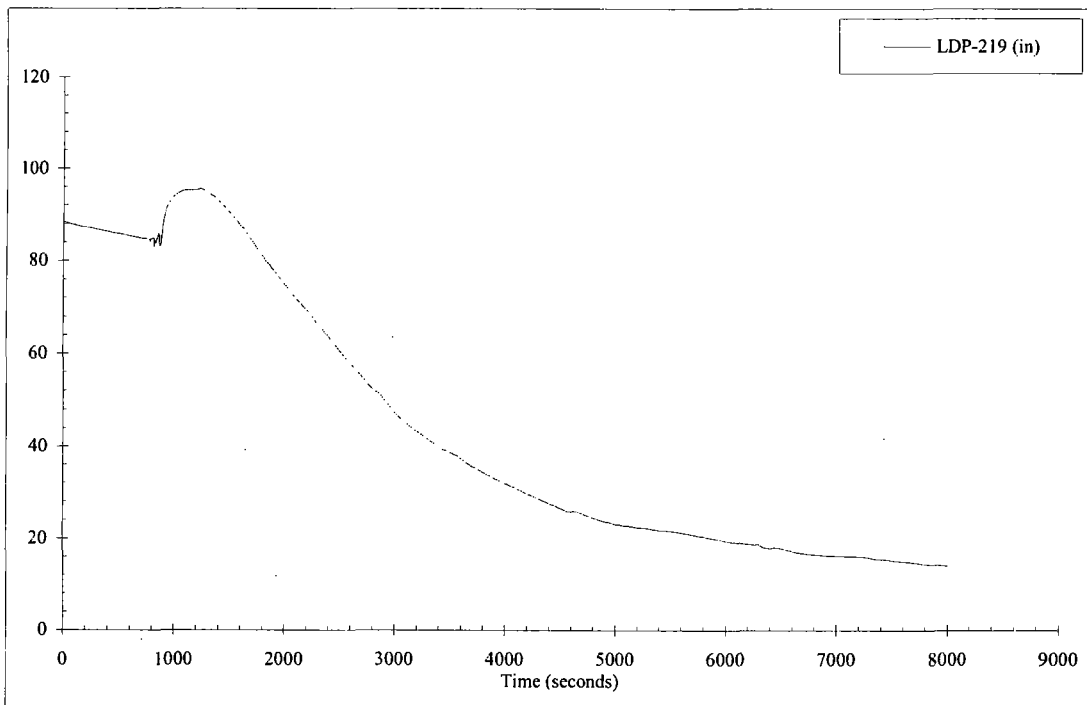
SG-1 to HL-1 Plenum Uncompensated Water Level



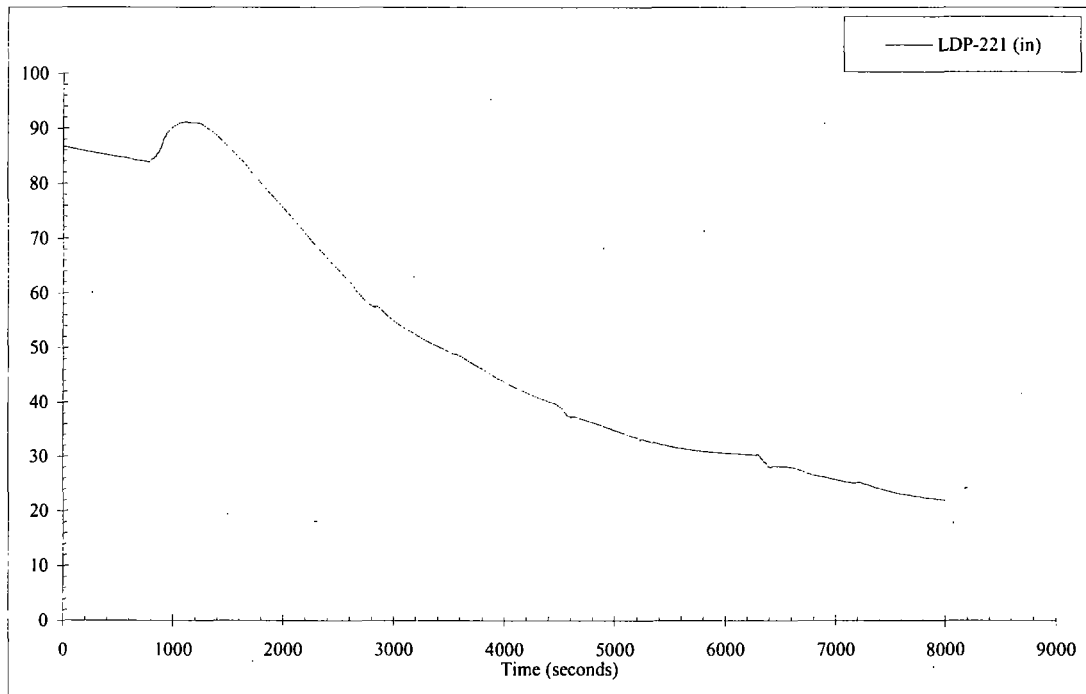
SG-1 Long Tube to HL Uncompensated Water Level



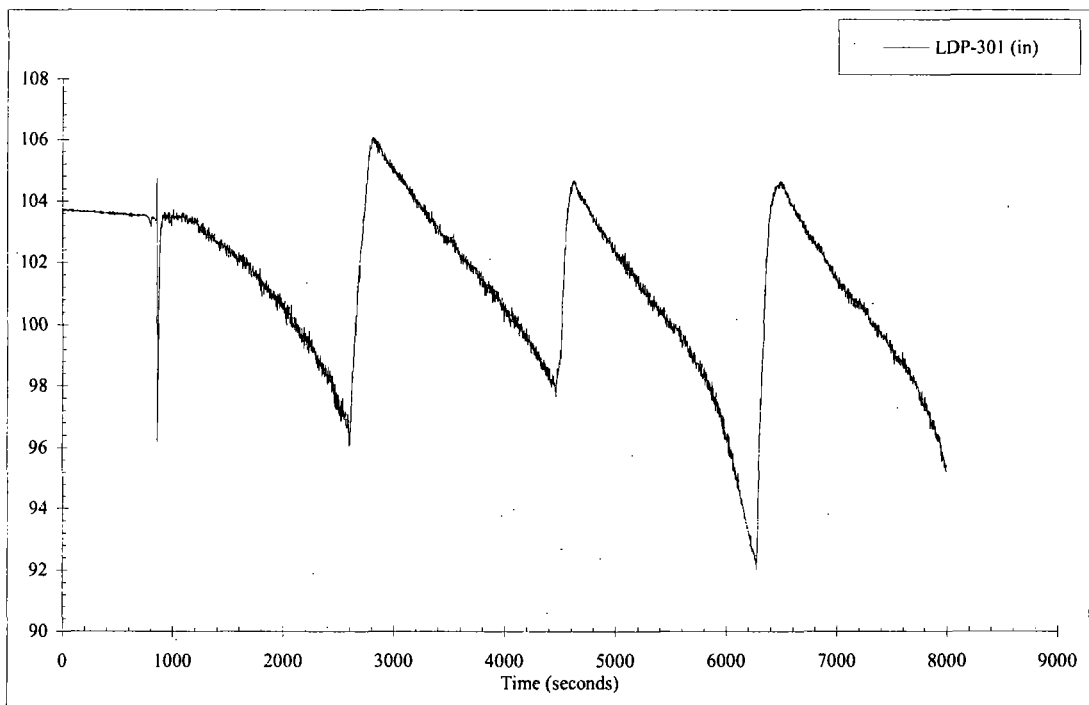
SG-1 Short Tube to HL Uncompensated Water Level



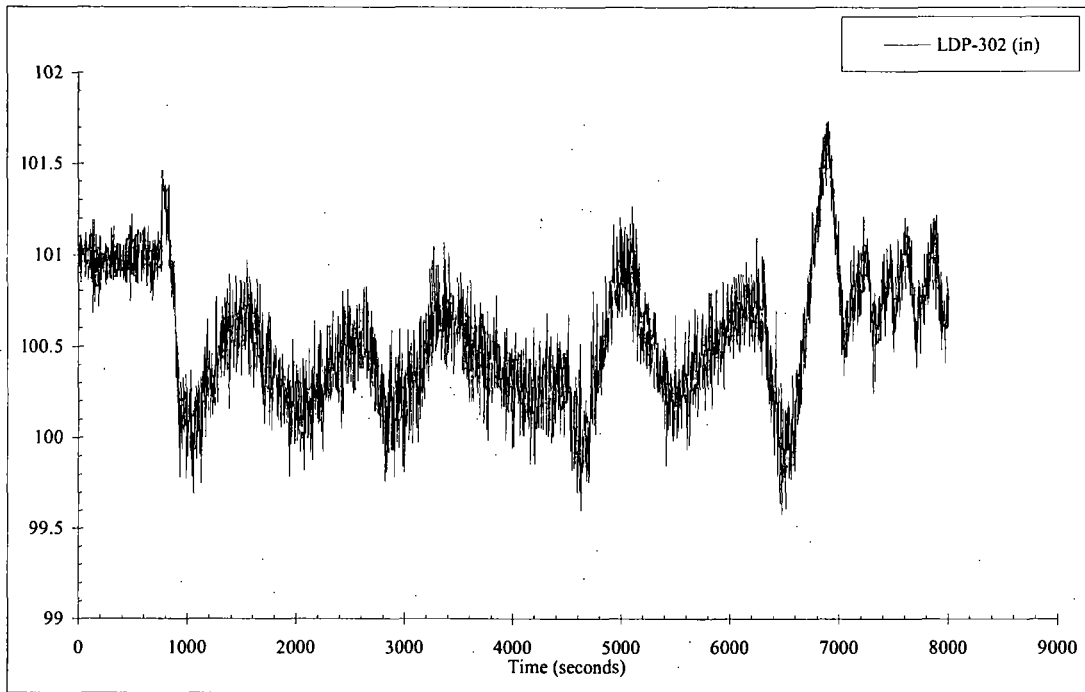
SG-1 Long Tube to CL Uncompensated Water Level



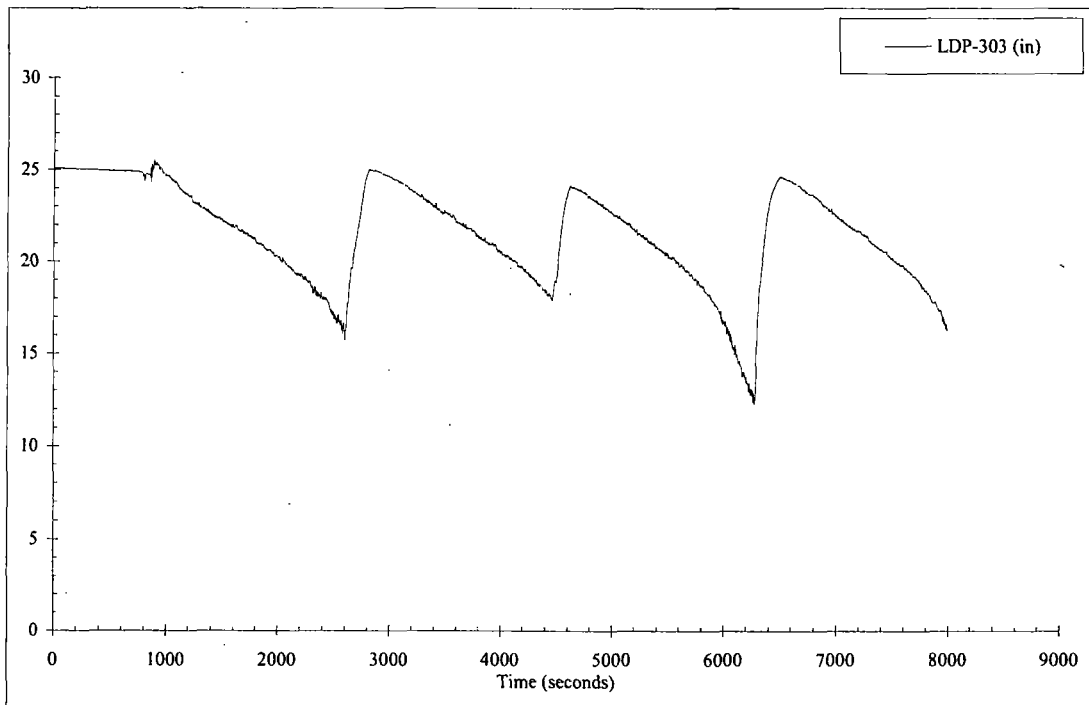
SG-1 Short Tube to CL Uncompensated Water Level



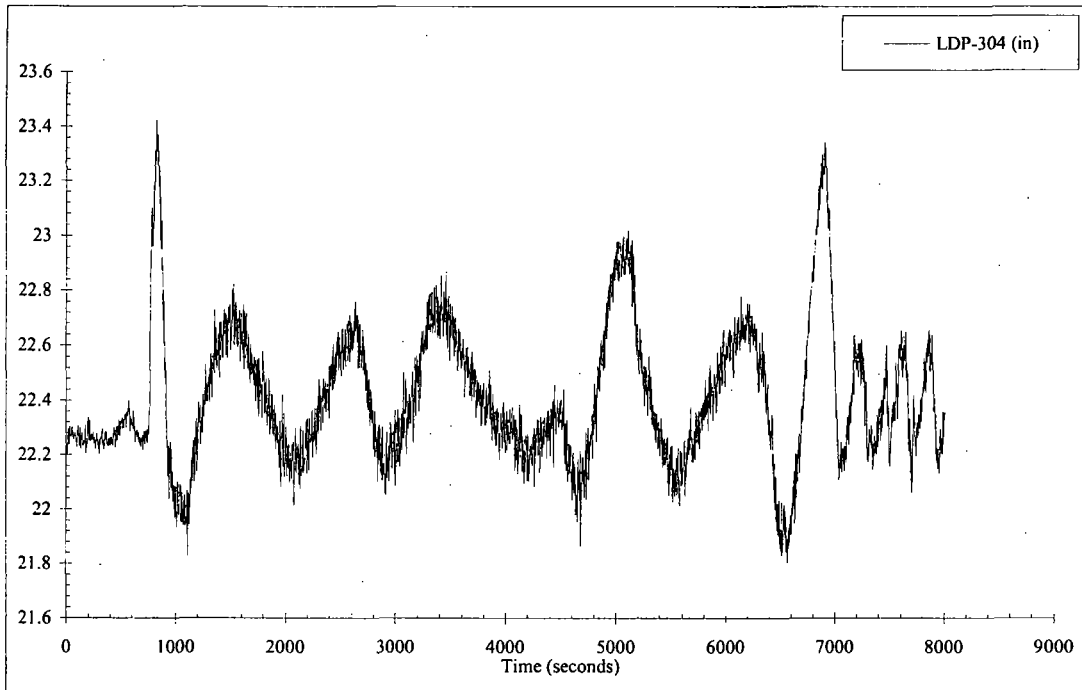
SG-1 WR Uncompensated Water Level



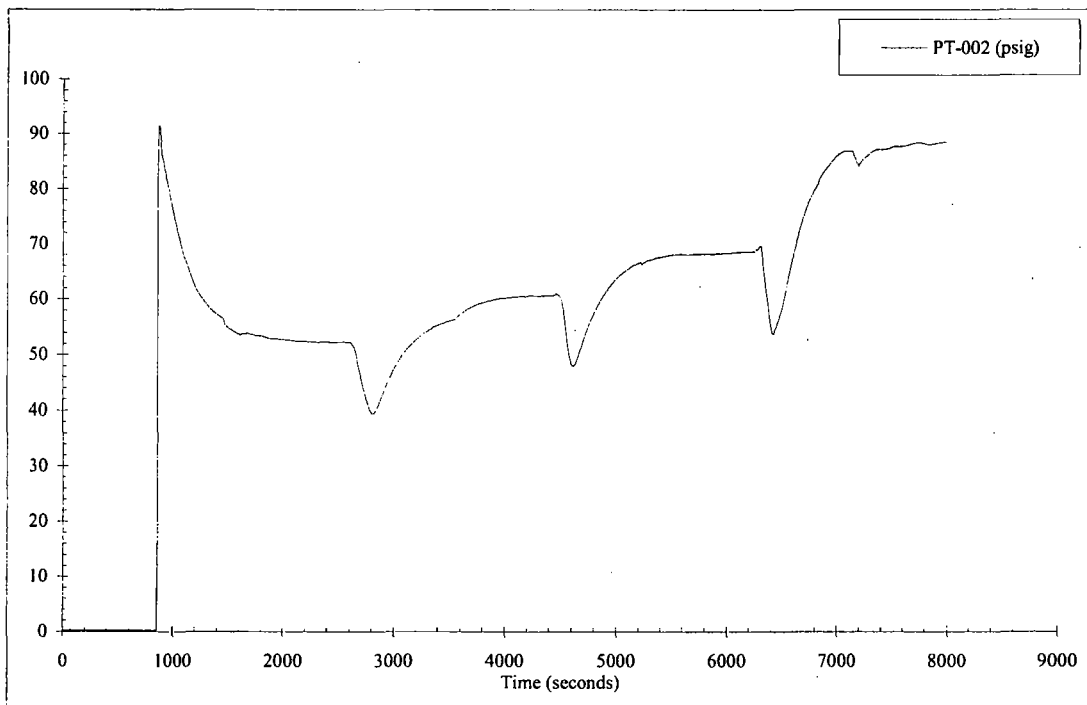
SG-2 WR Uncompensated Water Level



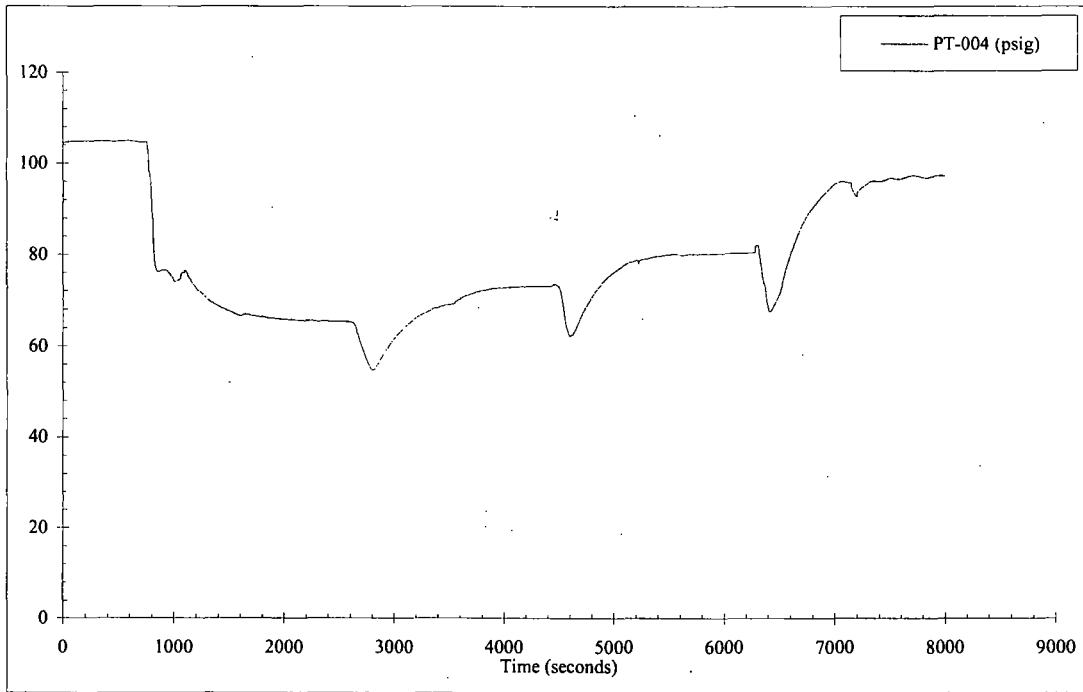
SG-1 NR Uncompensated Water Level



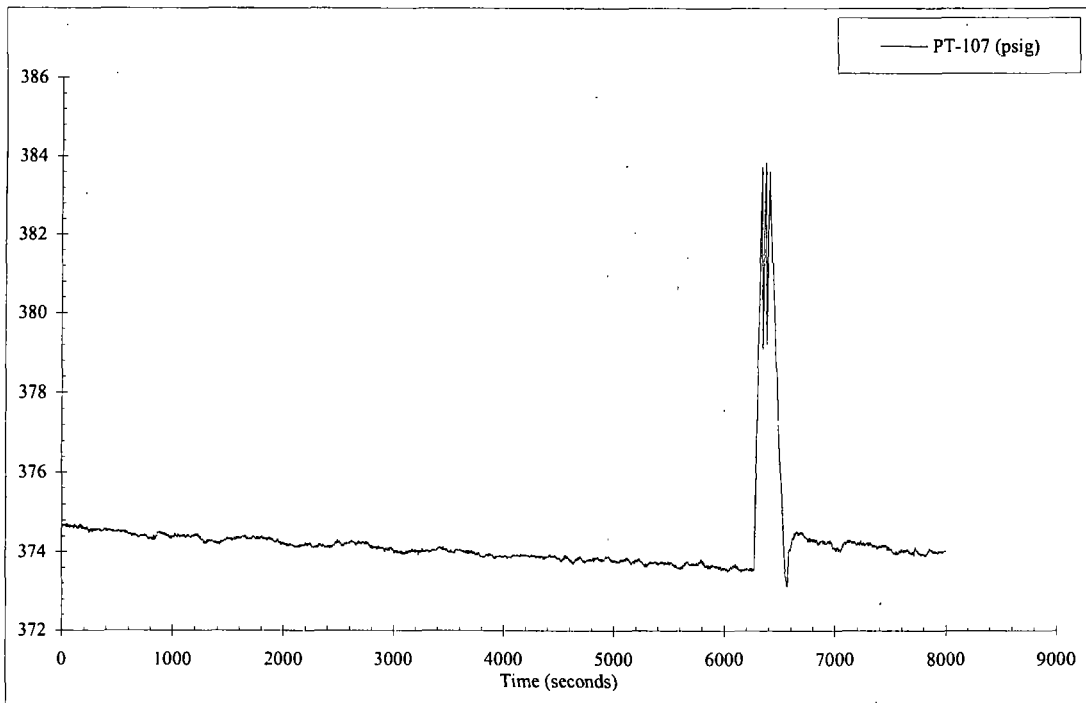
SG-2 NR Uncompensated Water Level



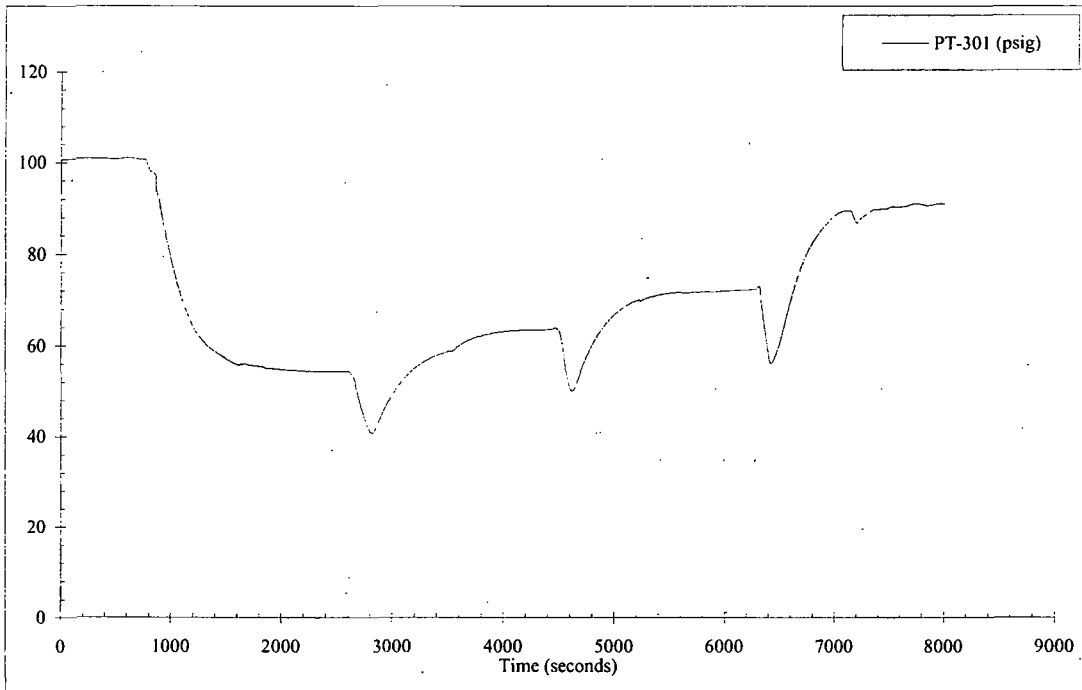
MS Header Pressure



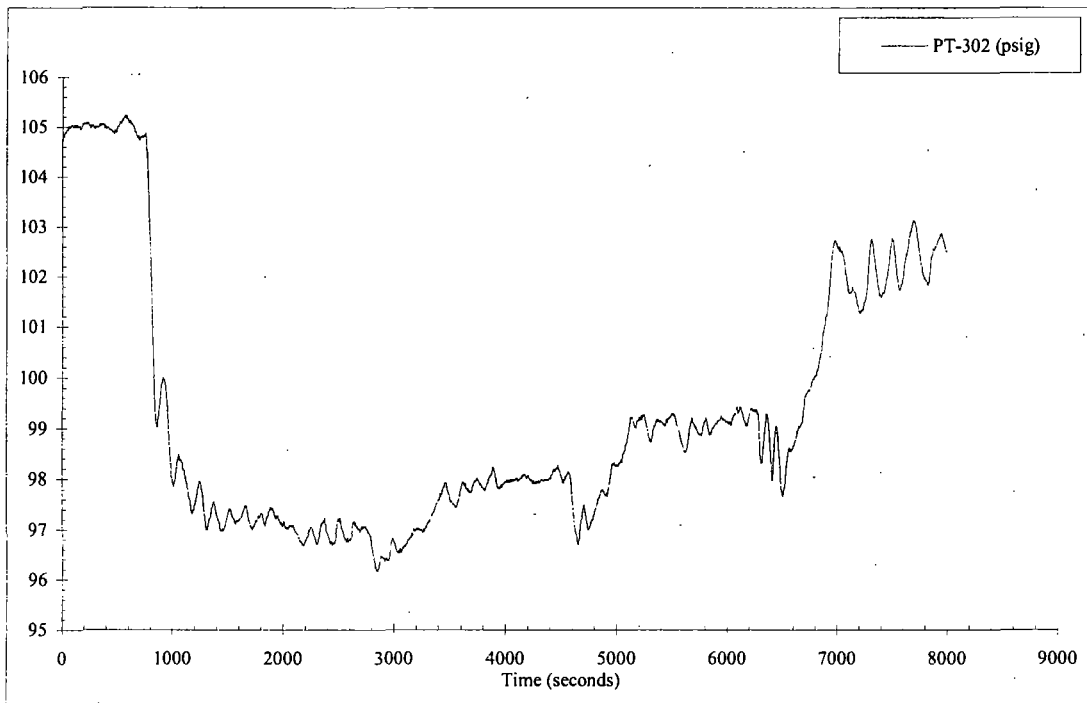
Temp Steam Pressure for FVM-002



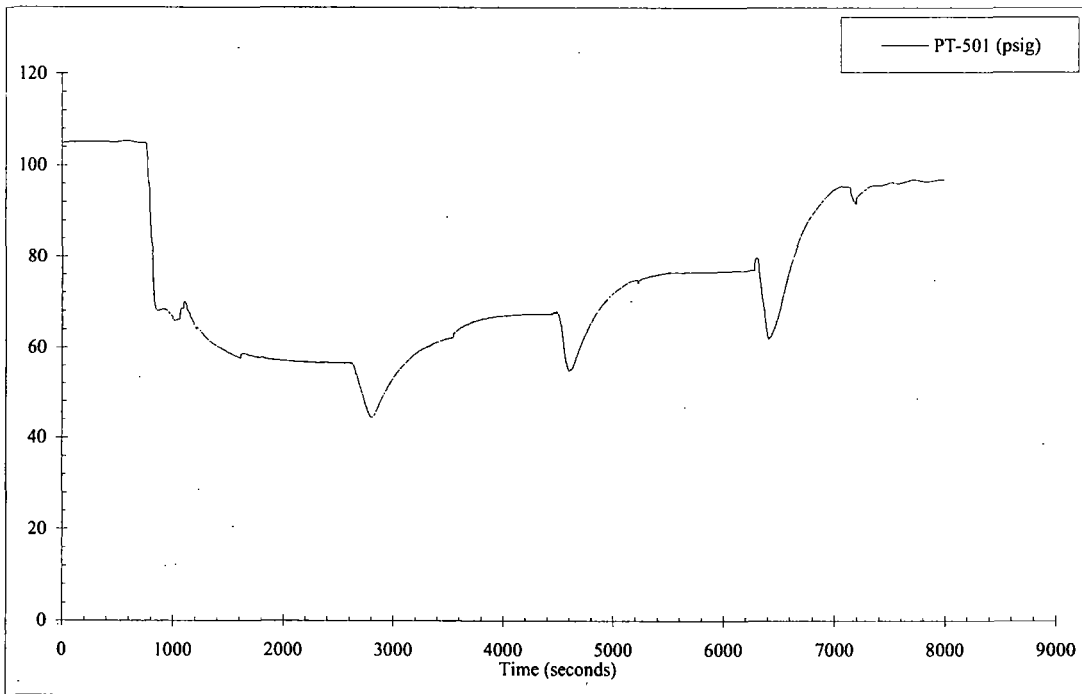
Rx Upper Head Pressure



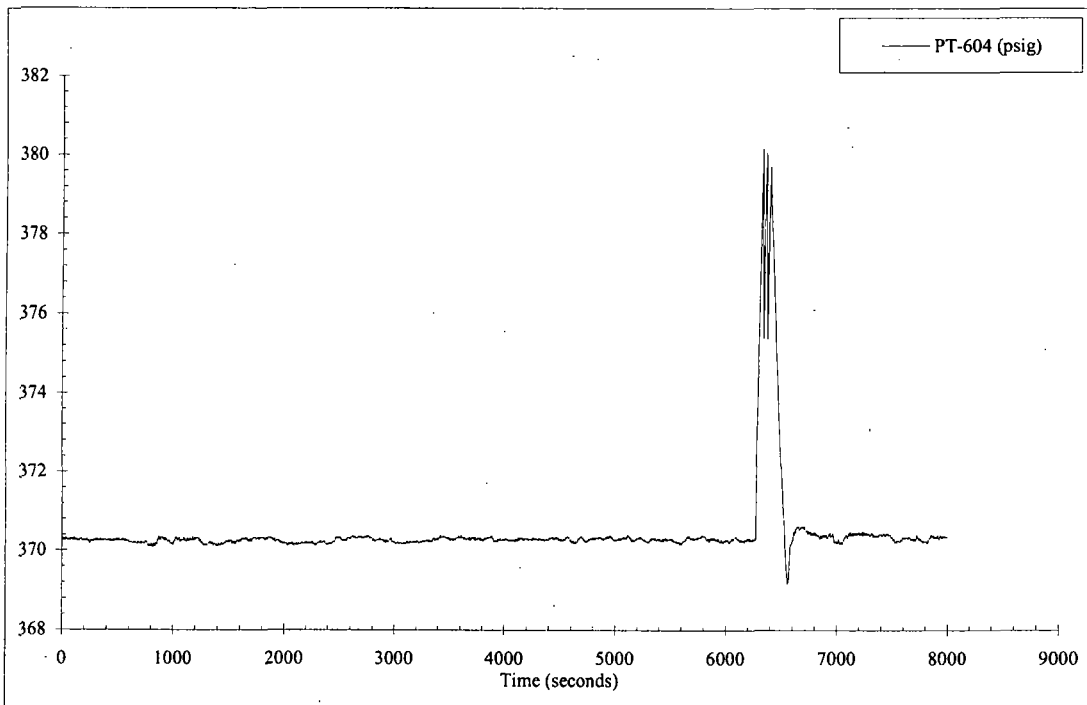
SG-1 Pressure



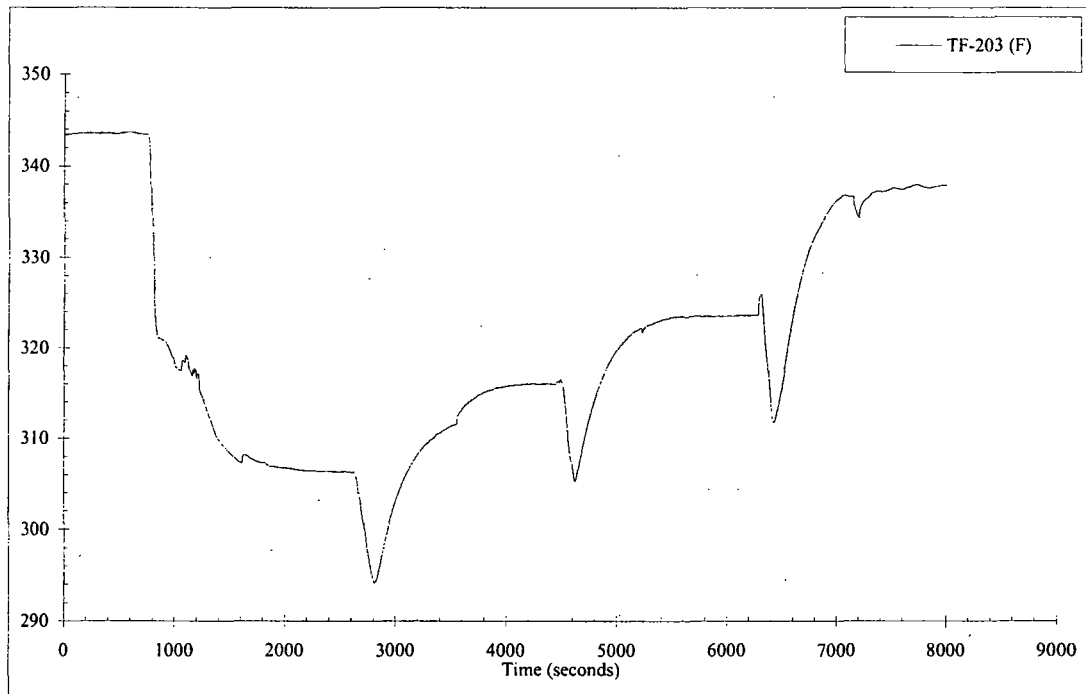
SG-2 Pressure



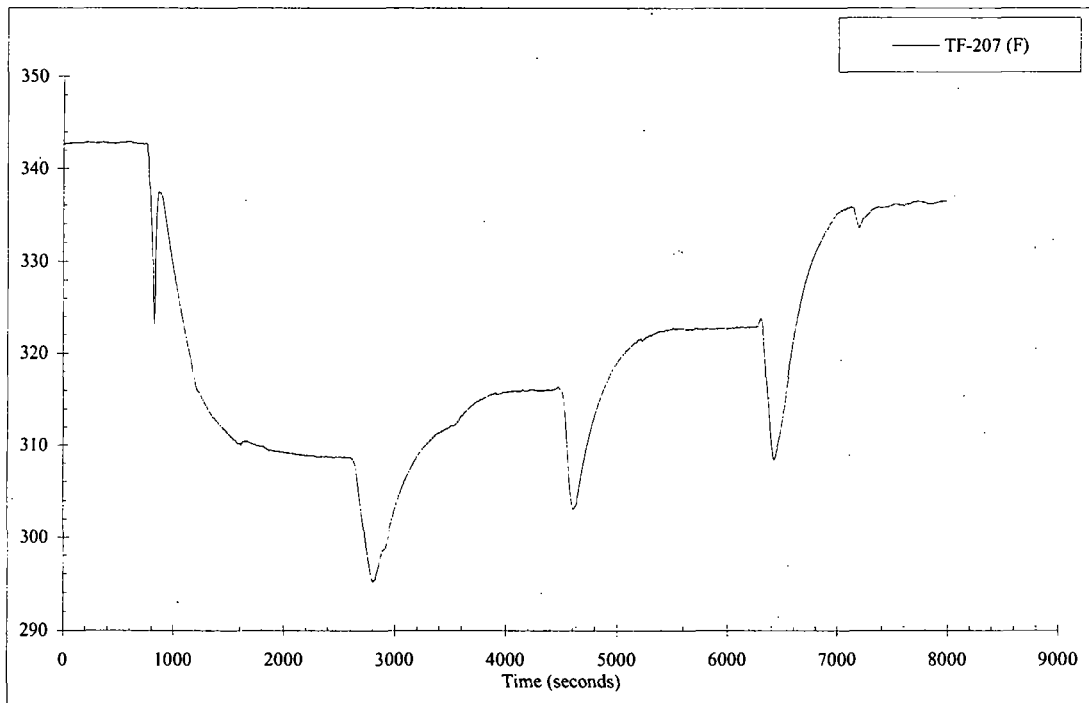
Separator Outlet Steam Pressure



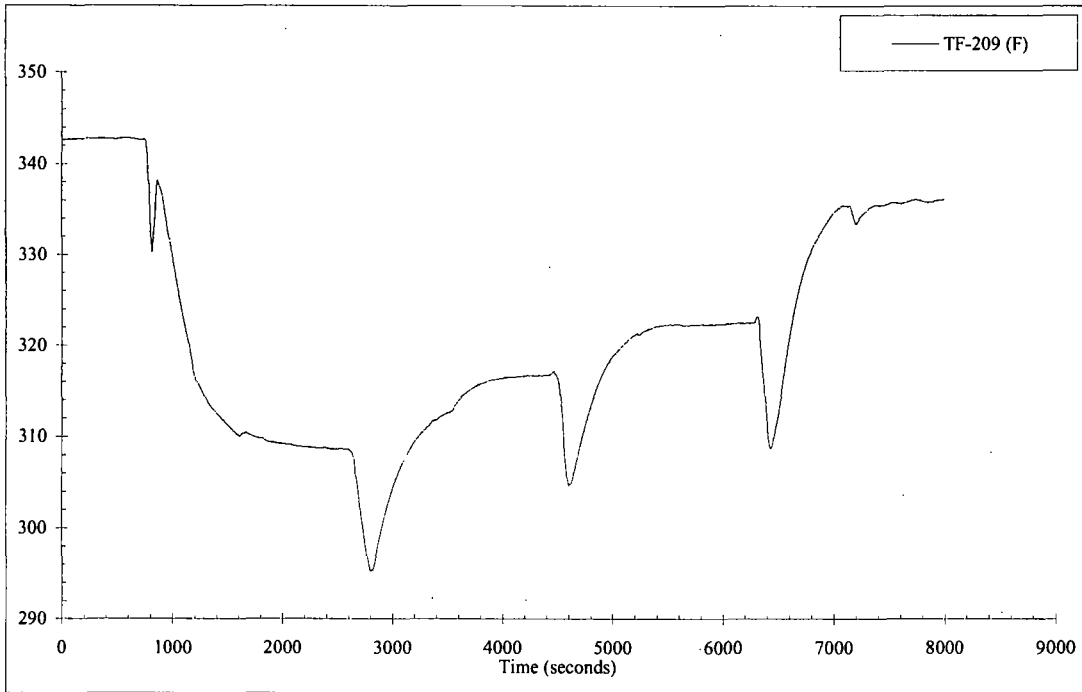
PZR WR Pressure



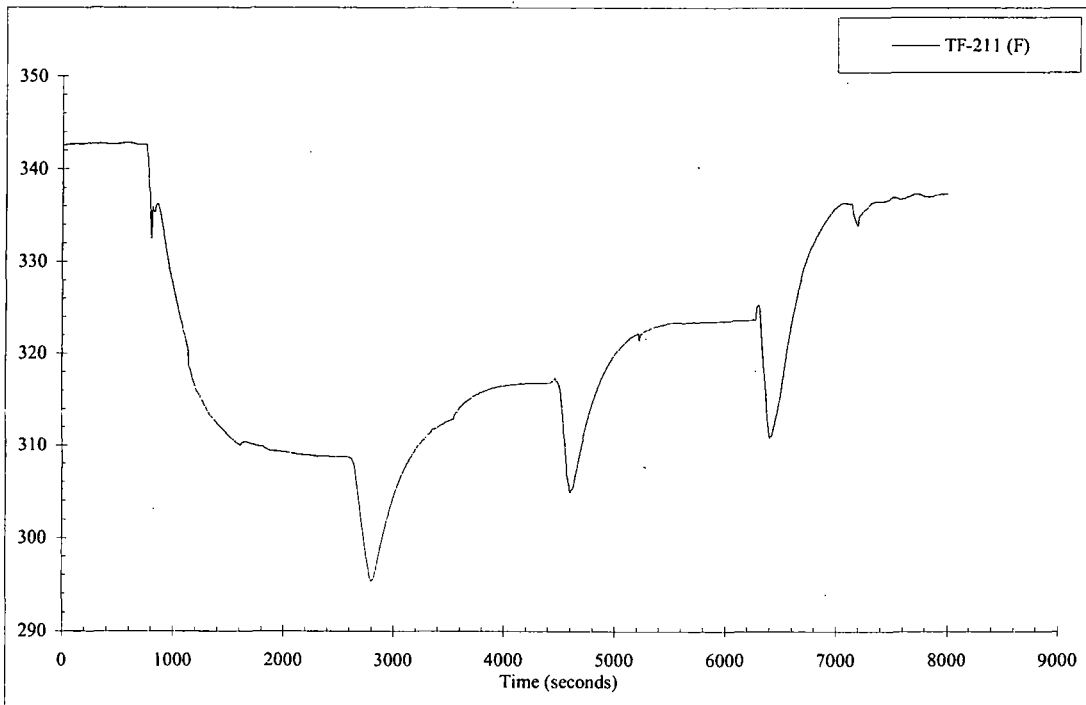
Separator Outlet Steam Temperature



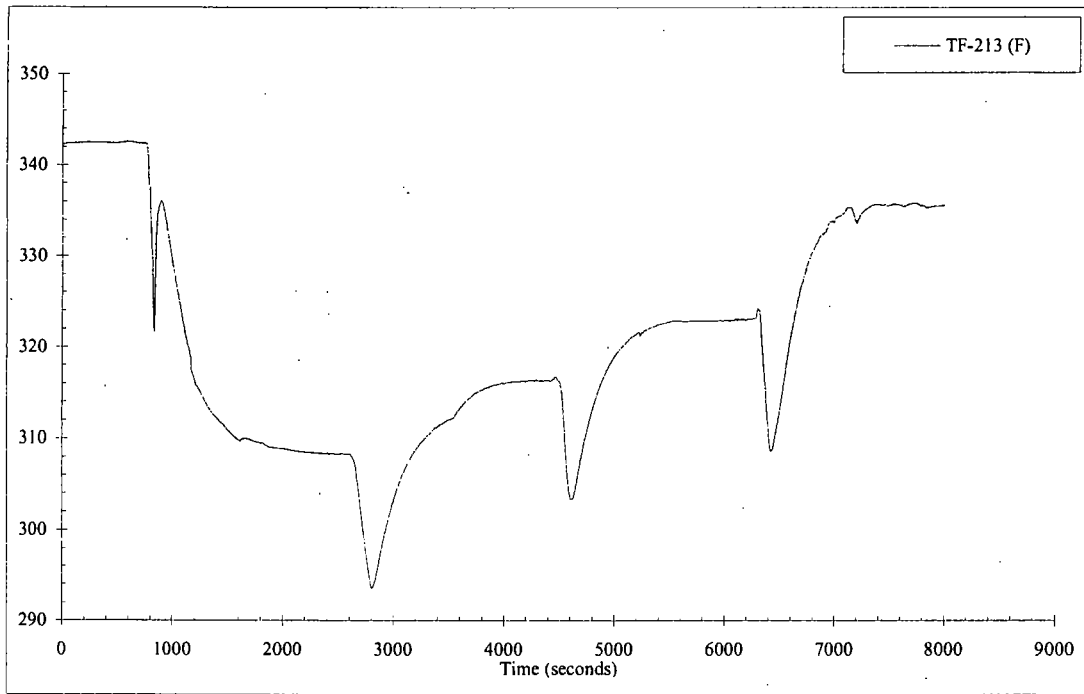
SG-1 Short Tube at Middle Outlet Side Temperature



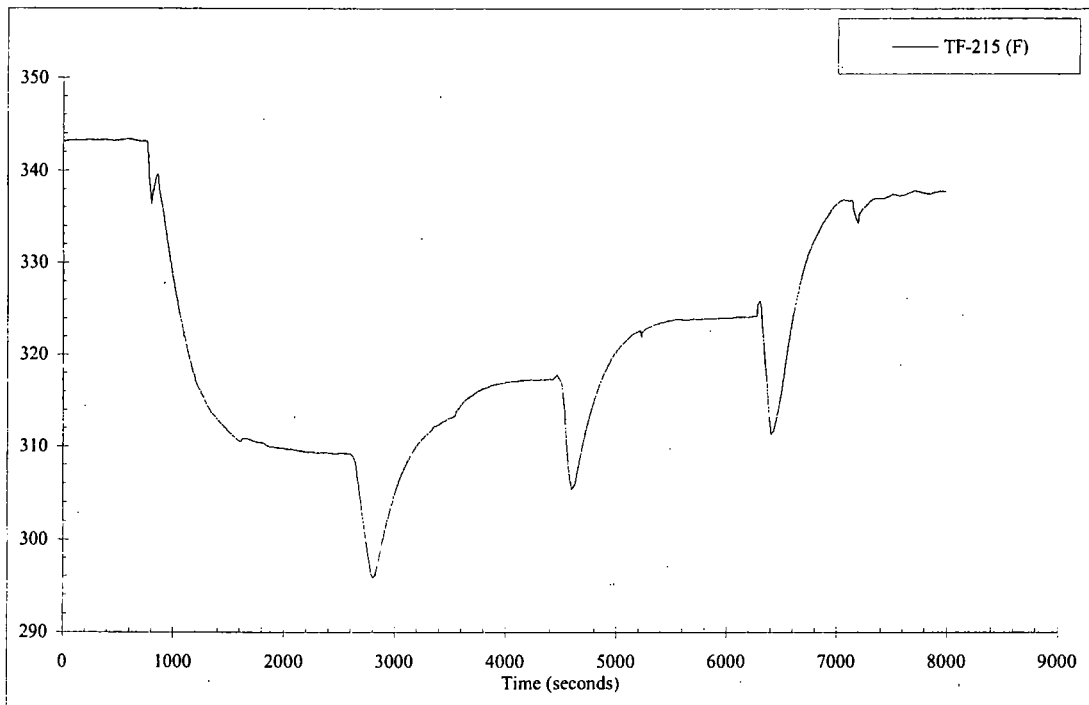
SG-1 Short Tube at Middle Inlet Side Temperature



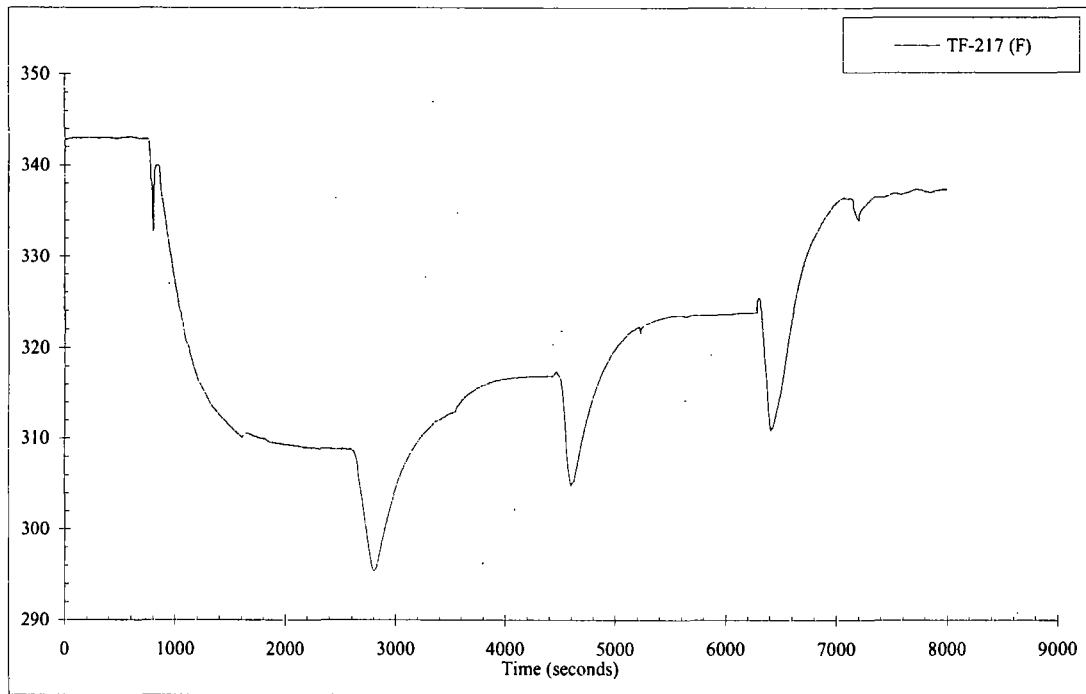
SG-1 Long Tube at Middle Outlet Temperature



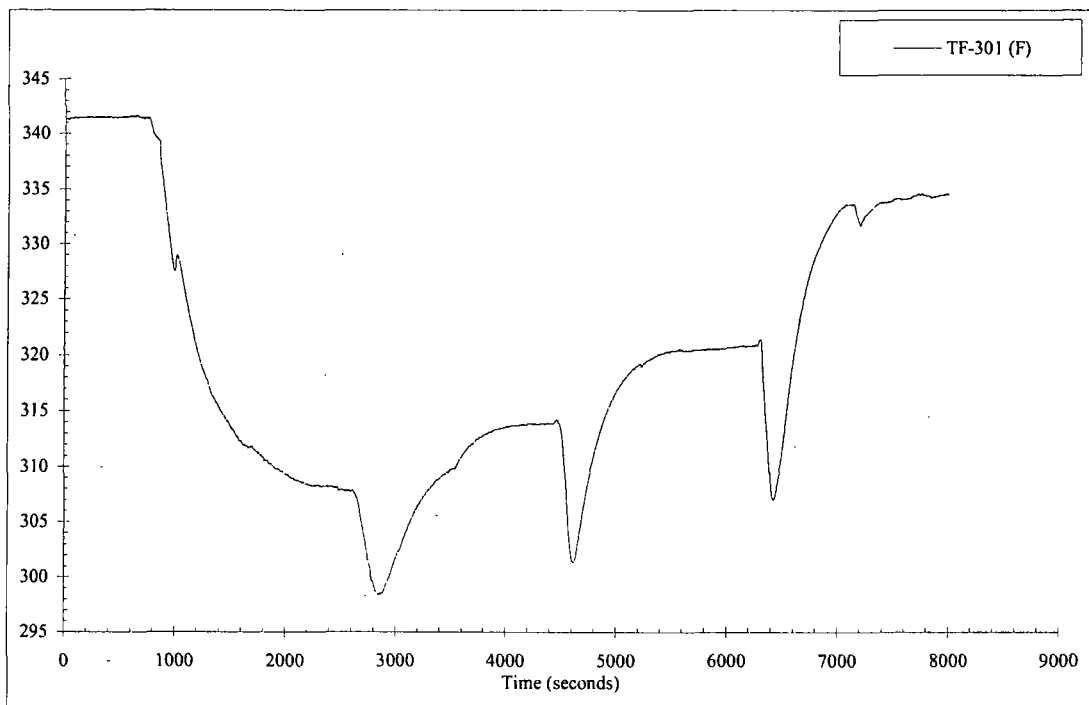
SG-1 Long Tube at Middle Inlet Temperature



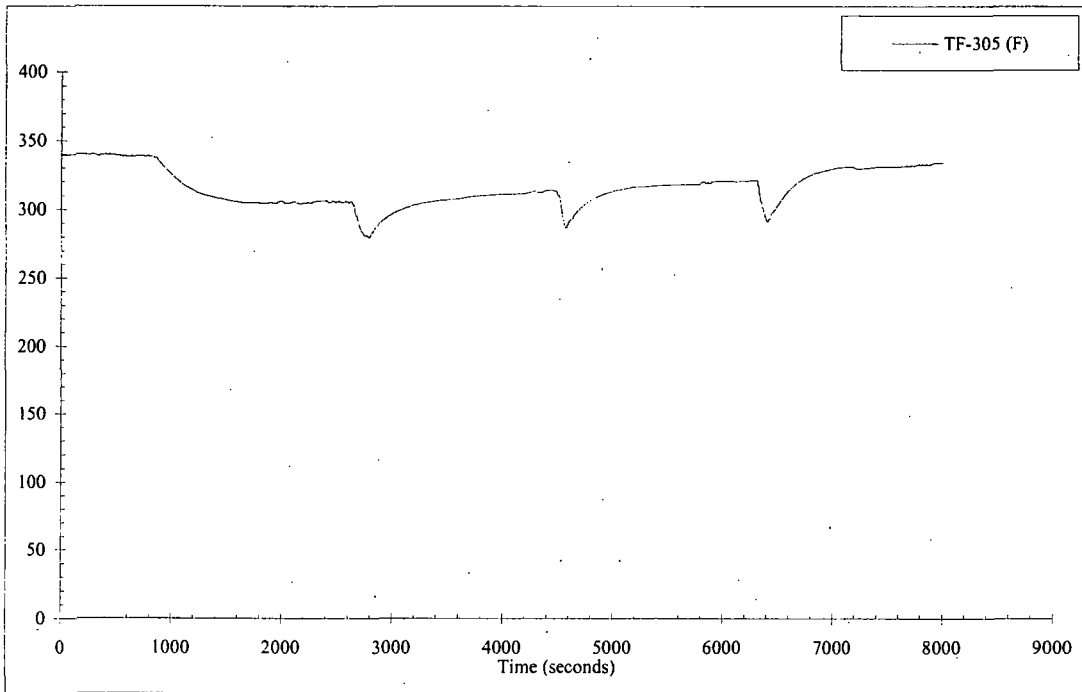
SG-1 Short Tube at Top Temperature



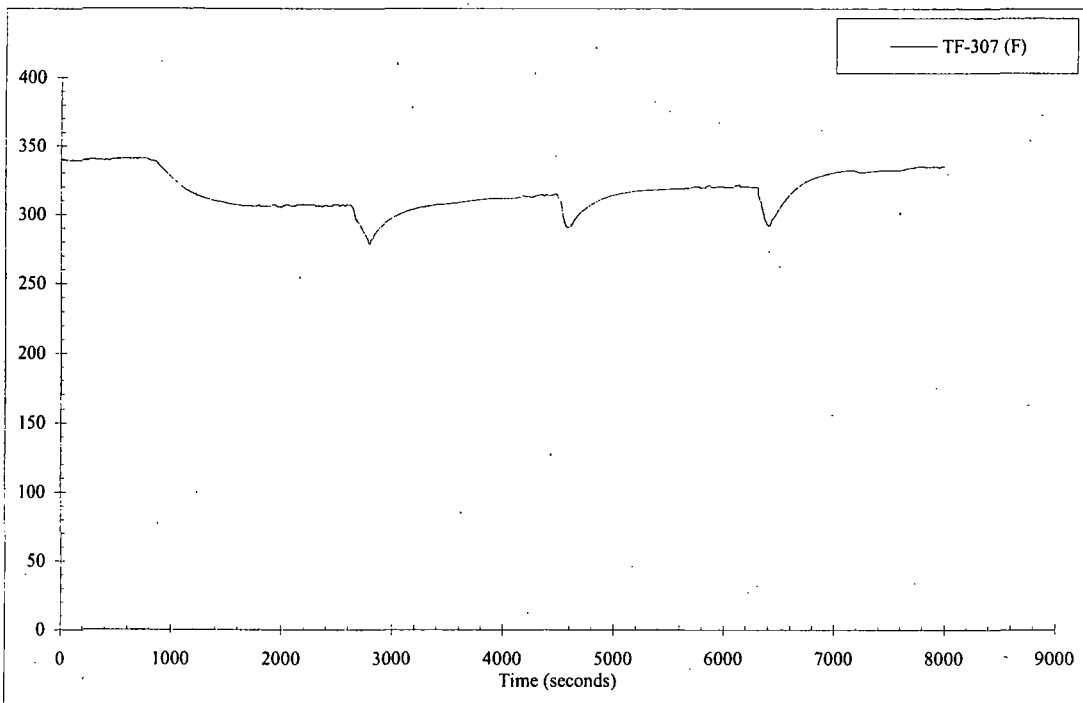
SG-1 Long Tube at Top Temperature



SG-1 Steam Temperature (SC-301)



SG-1 Downcomer HL Side Temperature



SG-1 Downcomer CL Side Temperature

NRC-COND-03: Steam Generator U-Tube Condensation Test @ 100 psig
 Oregon State University
 Start time = 12/16/2005 11:56:00
 End time = 12/16/2005 14:10:00
 File created on 12/16/2005 14:36:58

Timestamp	Interval (sec)	Tagname	Description	Area	Value
12/16/2005 11:54	-119	TEST_SW	Facility Test Switch	Switches	In Test
12/16/2005 12:10	854	M001_HS_A	SG-1 Stm Stop HS	Switches	Auto
12/16/2005 12:10	854	M001_STAT	SG-1 Steam Stop	Valves	Open
12/16/2005 12:19	1434	MF_001	FST Fill Valve	Valves	Open
12/16/2005 12:23	1662	MF_001	FST Fill Valve	Valves	Closed
12/16/2005 12:40	2698	MF_001	FST Fill Valve	Valves	Open
12/16/2005 12:45	2992	MF_001	FST Fill Valve	Valves	Closed
12/16/2005 13:07	4301	MF_001	FST Fill Valve	Valves	Open
12/16/2005 13:12	4593	MF_001	FST Fill Valve	Valves	Closed
12/16/2005 13:35	5945	MF_001	FST Fill Valve	Valves	Open
12/16/2005 13:39	6182	MF_001	FST Fill Valve	Valves	Closed
12/16/2005 13:40	6265	CVSP_HS_R	CVS Pump HS	Switches	Run
12/16/2005 13:40	6265	CVSP_X	CVS Pump	Pumps	Running
12/16/2005 13:41	6332	R610_STAT	PZR Vent	Valves	Open
12/16/2005 13:41	6343	R610_STAT	PZR Vent	Valves	Closed
12/16/2005 13:42	6365	R610_STAT	PZR Vent	Valves	Open
12/16/2005 13:42	6379	R610_STAT	PZR Vent	Valves	Closed
12/16/2005 13:42	6398	CVSP_HS_R	CVS Pump HS	Switches	Off
12/16/2005 13:42	6398	CVSP_X	CVS Pump	Pumps	Off
12/16/2005 13:46	6615	MF_001	FST Fill Valve	Valves	Open
12/16/2005 13:50	6849	MF_001	FST Fill Valve	Valves	Closed
12/16/2005 14:10	8040	TEST_SW	Facility Test Switch	Switches	Normal

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
DP-111	DP across Upper Core Plate	0.9963	4.9931	-30	30	Differential Pressure (in h2o)
DP-114	DP across Upper Support Plate	0.9934	4.9796	-375	375	Differential Pressure (in h2o)
DP-121	DVI-1/CL-1 Differential Pressure	0.989	4.9563	-25	25	Differential Pressure (in h2o)
DP-122	DVI-2/CL-2 Differential Pressure	0.9931	4.9591	-25	25	Differential Pressure (in h2o)
DP-123	DVI-1/CL-3 Differential Pressure	0.9957	4.9743	-25	25	Differential Pressure (in h2o)
DP-124	DVI-2/CL-4 Differential Pressure	0.9924	4.9561	-25	25	Differential Pressure (in h2o)
DP-125	HL-1 entrance losses	0.9951	4.97	0	30	Differential Pressure (in h2o)
DP-126	HL-2 entrance losses	0.9949	4.9707	0	30	Differential Pressure (in h2o)
DP-128	DVI-1 entrance losses	0.9959	4.9709	-25	25	Differential Pressure (in h2o)
DP-129	DVI-2 entrance losses	0.9958	4.9736	-25	25	Differential Pressure (in h2o)
DP-130	Upper Head Differential Pressure	0.9941	4.9622	-50	50	Differential Pressure (in h2o)
DP-201	CL-1 Differential Pressure	0.9939	4.9689	-25	25	Differential Pressure (in h2o)
DP-202	RCP-2 Differential Pressure	0.9916	4.9588	0	200	Differential Pressure (in h2o)
DP-203	HL-1 to CL1 Differential Pressure at SG1	0.9946	4.9692	0	27	Differential Pressure (psid)
DP-204	CL-2 Differential Pressure	0.9969	4.9814	-25	25	Differential Pressure (in h2o)
DP-205	RCP-3 Differential Pressure	0.995	4.978	0	200	Differential Pressure (in h2o)
DP-206	RCP-4 Differential Pressure	0.9959	4.984	0	200	Differential Pressure (in h2o)
DP-207	CL-3 Differential Pressure	0.9967	4.9817	-25	25	Differential Pressure (in h2o)
DP-208	CL-4 Differential Pressure	0.9984	4.9905	-25	25	Differential Pressure (in h2o)
DP-209	HL-1 Differential Pressure	0.998	4.9858	-25	25	Differential Pressure (in h2o)
DP-210	HL-2 Differential Pressure	0.9933	4.9649	-25	25	Differential Pressure (in h2o)
DP-211	SG-1 Short Tube Entrance Losses	0.9979	4.9849	0	25	Differential Pressure (in h2o)
DP-212	SG-2 Long Tube Exit Losses	0.9979	4.9838	0	25	Differential Pressure (in h2o)
DP-213	SG-1 Long Tube Exit Losses	0.9965	4.9788	-15	15	Differential Pressure (in h2o)
DP-214	SG-2 Long Tube Entrance Losses	0.9973	4.981	0	15	Differential Pressure (in h2o)
DP-215	Break Differential Pressure	0.9981	4.9807	0	500	Differential Pressure (psid)
DP-216	Break Differential Pressure	0.9964	4.9729	0	500	Differential Pressure (psid)
DP-217	U-Tube Condensation Separator Level	0.9966	4.9818	0	36.67	Differential Pressure (in h2o)
DP-218	HL-2 to CL2 Differential Pressure at SG2	0.9992	4.9889	0	150	Differential Pressure (in h2o)
DP-219	U-Tube Condensation Catch Tank Level	0.9949	4.9686	0	30.95	Differential Pressure (in h2o)
DP-220	HL-2 to CL4 Differential Pressure at SG2	0.9936	4.9627	0	150	Differential Pressure (in h2o)
DP-221	HL-1 to CL1 Differential Pressure at Rx	0.9951	4.9677	0	150	Differential Pressure (in h2o)
DP-222	HL-2 to CL2 Differential Pressure at Rx	0.9975	4.983	0	150	Differential Pressure (in h2o)
DP-223	HL-1 to CL3 Differential Pressure at Rx	0.9987	4.9915	0	150	Differential Pressure (in h2o)
DP-224	HL-2 to CL4 Differential Pressure at Rx	0.9944	4.9665	0	150	Differential Pressure (in h2o)
DP-401	ACC-1 Injection Differential Pressure	0.9975	4.979	0	400	Differential Pressure (in h2o)
DP-402	ACC-2 Injection Differential Pressure	0.9958	4.9736	0	400	Differential Pressure (in h2o)
DP-501	CMT-1 Injection Differential Pressure	0.9948	4.9675	-150	150	Differential Pressure (in h2o)
DP-502	CMT-2 Injection Differential Pressure	0.9947	4.9645	-150	150	Differential Pressure (in h2o)
DP-503	CMT-1 Balance Line Differential Pressure	0.998	4.9858	-150	150	Differential Pressure (in h2o)
DP-504	CMT-2 Balance Line Differential Pressure	1.0007	4.9955	-100	100	Differential Pressure (in h2o)
DP-601	HL-1 to ADS4-1 Differential Pressure	1.0008	4.9969	0	10	Differential Pressure (psid)
DP-602	HL-2 to ADS4-2 Differential Pressure	0.9948	4.967	0	10	Differential Pressure (psid)
DP-603	ADS4-1 Venturi	0.9985	4.9847	0	100	Differential Pressure (in h2o)
DP-604	ADS4-2 Venturi	0.9941	4.964	0	100	Differential Pressure (in h2o)
DP-605	ADS4-1 Venturi outlet to Enlarger inlet	0.9993	4.9881	0	50	Differential Pressure (in h2o)
DP-606	ADS4-2 Venturi outlet to Enlarger inlet	0.9991	4.9857	0	50	Differential Pressure (in h2o)
DP-611	PZR Surge Line Differential Pressure	0.9967	4.9773	-25	25	Differential Pressure (in h2o)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
DP-701	IRWST-1 Injection Differential Pressure	0.9982	4.9872	0	30	Differential Pressure (psid)
DP-702	IRWST-2 Injection Differential Pressure	0.9981	4.9871	0	30	Differential Pressure (psid)
DP-905	Break Separator Entrance Differential Pressure	0.9994	4.9905	0	100	Differential Pressure (psid)
FDP-604	ADS-2 Flow Differential Pressure	0.9961	4.9738	0	100	Differential Pressure (psid)
FDP-605	ADS-1 Flow Differential Pressure	0.9993	4.9896	0	250	Differential Pressure (psid)
FDP-606	ADS-3 Flow Differential Pressure	1.0023	5.0051	0	100	Differential Pressure (psid)
FMM-001	SG-1 Feed Flow	0.9961	4.9838	0	6	Volumetric Flow Rate (gpm)
FMM-002	SG-2 Feed Flow	0.9925	4.9642	0	6	Volumetric Flow Rate (gpm)
FMM-201	CL-1 Loop Flow	0.9921	4.9607	-100	100	Volumetric Flow Rate (gpm)
FMM-202	CL-2 Loop Flow	0.9943	4.9754	-100	100	Volumetric Flow Rate (gpm)
FMM-203	CL-3 Loop Flow	0.9974	4.9853	-100	100	Volumetric Flow Rate (gpm)
FMM-204	CL-4 Loop Flow	0.9936	4.9729	-100	100	Volumetric Flow Rate (gpm)
FMM-205	DVI-1 Flow	0.996	4.9706	0	75	Volumetric Flow Rate (gpm)
FMM-206	DVI-2 Flow	0.9969	4.9767	0	75	Volumetric Flow Rate (gpm)
FMM-401	ACC-1 Injection Flow	0.9932	4.9516	0	40	Volumetric Flow Rate (gpm)
FMM-402	ACC-2 Injection Flow	0.9965	4.9772	0	40	Volumetric Flow Rate (gpm)
FMM-501	CMT-1 Injection Flow	1.0006	4.9959	0	75	Volumetric Flow Rate (gpm)
FMM-502	CMT-2 CL Balance Line Flow	0.9994	4.9742	0	70	Volumetric Flow Rate (gpm)
FMM-503	CMT-1 CL Balance Line Flow	0.9985	4.9717	0	75	Volumetric Flow Rate (gpm)
FMM-504	CMT-2 Injection Flow	0.9925	4.9523	0	20	Volumetric Flow Rate (gpm)
FMM-601	ADS1-3 Loop Seal Flow	1.004	5.0168	0	200	Volumetric Flow Rate (gpm)
FMM-602	ADS4-2 Loop Seal Flow	1.0117	5.0507	0	60	Volumetric Flow Rate (gpm)
FMM-603	ADS4-1 Loop Seal Flow	1.0129	5.0571	0	60	Volumetric Flow Rate (gpm)
FMM-701	IRWST/DVI-1 Injection Flow	0.9954	4.9738	0	40	Volumetric Flow Rate (gpm)
FMM-702	IRWST/DVI-2 Injection Flow	0.9955	4.9724	0	40	Volumetric Flow Rate (gpm)
FMM-703	IRWST Overflow	0.9966	4.9663	0	10	Volumetric Flow Rate (gpm)
FMM-801	CVSP Discharge Flow	0.9998	4.9876	0	8	Volumetric Flow Rate (gpm)
FMM-802	PRHR Inlet Flow	0.9966	4.9656	0	40	Volumetric Flow Rate (gpm)
FMM-803	RNSP to DVI-2 Flow	0.9942	4.9629	0	30	Volumetric Flow Rate (gpm)
FMM-804	PRHR Outlet Flow	0.9963	4.9612	0	40	Volumetric Flow Rate (gpm)
FMM-805	RNSP Discharge Flow	0.9936	4.9711	0	40	Volumetric Flow Rate (gpm)
FMM-901	Primary Sump-1 Recirculation Injection Flow	0.9936	4.9673	-40	40	Volumetric Flow Rate (gpm)
FMM-902	Primary Sump-2 Recirculation Injection Flow	0.9948	4.9726	-40	40	Volumetric Flow Rate (gpm)
FMM-905	Break Separator Loop Seal Flow	1.0902	5.1224	-90	90	Volumetric Flow Rate (gpm)
FVM-001	U-Tube Outlet Steam Flow	1.0036	5.0202	0	70	Steam Flow Rate (cfm)
FVM-002	U-Tube Inlet Steam Flow	0.9986	4.9885	0	100	Steam Flow Rate (cfm)
FVM-003	SG 2 Secondary Side Steam Flow	0.9988	5.0101	0	140	Steam Flow Rate (cfm)
FVM-004	Catch Tank Outlet Steam Flow	1.001	4.9885	0	70	Steam Flow Rate (cfm)
FVM-009	SG-1 PORV Blowdown Steam Flow	0.9967	4.9836	0	381	Steam Flow Rate (cfm)
FVM-010	SG-2 PORV Blowdown Steam Flow	0.9971	4.9817	0	381	Steam Flow Rate (cfm)
FVM-601	ADS1-3 Separator Steam Flow	1.0017	4.9995	0	2000	Steam Flow Rate (cfm)
FVM-602	ADS4-2 Separator 6-inch Line Steam Flow	1.0018	5.006	0	2000	Steam Flow Rate (cfm)
FVM-603	ADS4-1 Separator 6-inch Line Steam Flow	1.0024	5.0062	0	1600	Steam Flow Rate (cfm)
FVM-604	ADS4-2 Separator 2-inch Line Steam Flow	1.0026	5.0034	0	348	Steam Flow Rate (cfm)
FVM-605	ADS4-1 Separator 2-inch Line Steam Flow	1.0028	5.0037	0	348	Steam Flow Rate (cfm)
FVM-901	BAMS HDR 6-inch Line Steam Flow	1.0023	5.0021	0	5000	Steam Flow Rate (cfm)
FVM-902	BAMS HDR 10-inch Line Steam Flow	1.0027	5.01	0	12500	Steam Flow Rate (cfm)
FVM-903	Primary Sump Steam Exhaust Flow	0.9949	4.9879	0	22	Steam Flow Rate (cfm)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
FVM-904	Break Separator 3-inch Line Steam Flow	0.9979	4.9986	0	400	Steam Flow Rate (cfm)
FVM-905	Break Separator 6-inch Line Steam Flow	1.004	5.0036	0	6000	Steam Flow Rate (cfm)
FVM-906	Break Separator 8-inch Line Steam Flow	1.0025	5.0048	0	4000	Steam Flow Rate (cfm)
KW-101	Rx Heater Group 1 Power	1.1171	4.3222	0	472	Power (kW)
KW-102	Rx Heater Group 2 Power	1.0045	4.1621	0	486	Power (kW)
KW-103	Rx Heater Group 1 Power	0.9786	4.8931	0	496	Power (kW)
KW-104	Rx Heater Group 2 Power	0.9946	4.912	0	492	Power (kW)
KW-601	PZR Heater Power	0.982	4.9435	0	24.3	Power (kW)
LCT-701	IRWST Weight	0.9976	4.9831	0	40000	Mass (lbm)
LCT-901	Primary Sump Weight	0.9969	4.977	0	28800	Mass (lbm)
LCT-902	Secondary Sump Weight	0.9983	4.9845	0	16700	Mass (lbm)
LDP-001	FST Uncompensated Water Level	1.0017	5.0056	0	91.88	Water Level (in)
LDP-101	CL to Bypass Holes Uncompensated Water Level (270)	0.9945	4.9645	0	5.561	Water Level (in)
LDP-102	CL to Bypass Holes Uncompensated Water Level (180)	0.9963	4.9725	0	5.938	Water Level (in)
LDP-103	DVI to CL Uncompensated Water Level (270)	0.9982	4.9807	0	11.692	Water Level (in)
LDP-104	DVI to CL Uncompensated Water Level (180)	0.9992	4.9748	0	12.376	Water Level (in)
LDP-105	Upper Core Plate to DVI Uncompensated Water Level (270)	1.0058	5.0076	0	11.929	Water Level (in)
LDP-106	Bottom of Core to Lower Core Plate Uncompensated Water Level (180)	0.9985	4.9732	0	8.198	Water Level (in)
LDP-107	Bottom of Core to Lower Core Plate Uncompensated Water Level (270)	0.9958	4.9713	0	8.223	Water Level (in)
LDP-108	Bottom of Core to Lower Core Plate Uncompensated Water Level (0)	0.9953	4.9683	0	8.562	Water Level (in)
LDP-109	Lower Core Plate to Mid-Core Spacer Grid Uncompensated Water Level (0)	0.9988	4.984	0	19.763	Water Level (in)
LDP-110	Mid-Core Spacer Grid to Upper-Core Spacer Grid Uncompensated Water Level (0)	0.9991	4.9909	0	20.02	Water Level (in)
LDP-112	Upper Core Plate to DVI Uncompensated Water Level (0)	0.9963	4.9755	0	4.696	Water Level (in)
LDP-113	DVI to Bottom of Upper Support Plate Uncompensated Water Level (0)	0.9986	4.9849	0	15.614	Water Level (in)
LDP-115	Upper Support Plate to Top of Rx Uncompensated Water Level (0)	0.9996	4.9896	0	24.28	Water Level (in)
LDP-116	Bottom of Rx to Bottom of Bypass Holes Uncompensated Water Level (270)	0.9949	4.9638	0	77.59	Water Level (in)
LDP-117	Upper Core Spacer Grid to DVI Uncompensated Water Level (180)	0.9983	4.9838	0	11.383	Water Level (in)
LDP-118	Lower Core Plate to Upper Core Plate Uncompensated Water Level (270)	0.9988	4.9848	0	39.98	Water Level (in)
LDP-119	Lower Core Plate to Upper Core Support Grid Uncompensated Water Level (180)	0.9996	4.988	0	40.26	Water Level (in)
LDP-127	Rx Wide Range Uncompensated Water Level	1.0007	4.999	0	98.97	Water Level (in)
LDP-138	Upper Core Spacer Grid to Bottom of Upper Support Plate Uncompensated Water Level (180)	0.9946	4.9639	0	39.3	Water Level (in)
LDP-139	Top of Lower Core Plate to Upper Core Spacer Grid Uncompensated Water Level	0.9982	4.9837	0	24.166	Water Level (in)
LDP-140	Bottom of Rx to Bottom of Flow Holes (180) Uncompensated Water Level	1.0014	4.9981	0	78.02	Water Level (in)
LDP-141	Upper Core Plate to Lower Support Plate Uncompensated Water Level	0.9994	4.9843	0	20.135	Water Level (in)
LDP-201	CL-1 Uncompensated Water Level	1.0002	4.9961	0	2.496	Water Level (in)
LDP-202	CL-2 Uncompensated Water Level	0.9994	4.9924	0	2.223	Water Level (in)
LDP-203	CL-3 Uncompensated Water Level	0.9994	4.9923	0	2.532	Water Level (in)
LDP-204	CL-4 Uncompensated Water Level	0.9927	4.9594	0	2.47	Water Level (in)
LDP-205	HL-1 Uncompensated Water Level	0.9945	4.9663	0	4.415	Water Level (in)
LDP-206	HL-2 Uncompensated Water Level	0.9944	4.9653	0	4.013	Water Level (in)
LDP-207	SG-1 to HL-1 Elbow Plenum Uncompensated Water Level	0.9972	4.9779	0	18.3	Water Level (in)
LDP-208	SG-2 to HL-2 Elbow Plenum Uncompensated Water Level	0.9969	4.9825	0	19.247	Water Level (in)
LDP-209	SG-1 to HL-1 Plenum Uncompensated Water Level	1.0002	4.9954	0	10.939	Water Level (in)
LDP-210	SG-2 to CL-4 Plenum Uncompensated Water Level	0.9943	4.9677	0	16.988	Water Level (in)
LDP-211	SG-1 to CL-3 Plenum Uncompensated Water Level	0.993	4.9613	0	16.793	Water Level (in)
LDP-212	SG-2 to CL-2 Plenum Uncompensated Water Level	0.9982	4.9836	0	16.772	Water Level (in)
LDP-213	SG-1 to CL-1 Plenum Uncompensated Water Level	0.9978	4.9864	0	16.747	Water Level (in)
LDP-214	SG-2 to HL-2 Plenum Uncompensated Water Level	1.0002	4.9953	0	11.571	Water Level (in)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
LDP-215	SG-1 Long Tube to HL Uncompensated Water Level	0.9992	4.99	0	102.06	Water Level (in)
LDP-216	SG-2 Short Tube to HL Uncompensated Water Level	0.9955	4.9717	0	95.55	Water Level (in)
LDP-217	SG-1 Short Tube to HL Uncompensated Water Level	0.9932	4.9618	0	96.25	Water Level (in)
LDP-218	SG-2 Long Tube to HL Uncompensated Water Level	0.9943	4.9658	0	103.14	Water Level (in)
LDP-219	SG-1 Long Tube to CL Uncompensated Water Level	0.9992	4.9867	0	102.45	Water Level (in)
LDP-220	SG-2 Short Tube to CL Uncompensated Water Level	0.9971	4.9786	0	96	Water Level (in)
LDP-221	SG-1 Short Tube to CL Uncompensated Water Level	0.9986	4.985	0	95.98	Water Level (in)
LDP-222	SG-2 Long Tube to CL Uncompensated Water Level	0.9947	4.9628	0	102.71	Water Level (in)
LDP-301	SG-1 WR Uncompensated Water Level	1.0006	5.0022	0	119.25	Water Level (in)
LDP-302	SG-2 WR Uncompensated Water Level	1.0003	4.9995	0	119.02	Water Level (in)
LDP-303	SG-1 NR Uncompensated Water Level	0.9934	4.9699	0	31.81	Water Level (in)
LDP-304	SG-2 NR Uncompensated Water Level	0.995	4.9748	0	31.52	Water Level (in)
LDP-401	ACC-1 Uncompensated Water Level	0.9951	4.987	0	38.26	Water Level (in)
LDP-402	ACC-2 Uncompensated Water Level	1.0332	5.166	0	38.34	Water Level (in)
LDP-501	CMT-1 NR Uncompensated Water Level (Bottom)	0.9986	4.9834	0	5.31	Water Level (in)
LDP-502	CMT-2 WR Uncompensated Water Level	1.0396	5.1958	0	57.5	Water Level (in)
LDP-503	CMT-1 NR Uncompensated Water Level (Middle)	0.9979	4.984	0	46.77	Water Level (in)
LDP-504	CMT-2 NR Uncompensated Water Level (Bottom)	0.9972	4.9793	0	5.226	Water Level (in)
LDP-505	CMT-1 NR Uncompensated Water Level (Top)	1	4.994	0	5.486	Water Level (in)
LDP-506	CMT-2 NR Uncompensated Water Level (Middle)	0.9975	4.9823	0	46.96	Water Level (in)
LDP-507	CMT-1 WR Uncompensated Water Level	1.0383	5.1887	0	57.5	Water Level (in)
LDP-508	CMT-2 NR Uncompensated Water Level (Top)	0.9994	4.9913	0	5.309	Water Level (in)
LDP-509	CL-3 to CMT-1 Balance Line Uncompensated Water Level	0.9968	4.9772	0	78.84	Water Level (in)
LDP-510	CL-1 to CMT-2 Balance Line Uncompensated Water Level	0.9942	4.9653	0	78.28	Water Level (in)
LDP-601	PZR WR Uncompensated Water Level	0.9991	5.0006	0	140.47	Water Level (in)
LDP-602	PZR Surge Line Uncompensated Water Level	0.997	4.9777	0	47.5	Water Level (in)
LDP-605	PZR Upper Surge Line Pipe Uncompensated Water Level	0.9963	4.9735	0	3.533	Water Level (in)
LDP-606	PZR Surge Line Pipe Level at PZR Inlet Uncompensated Water Level	0.9958	4.9724	0	18.696	Water Level (in)
LDP-607	PZR Middle Surge Line Pipe Uncompensated Water Level	0.996	4.9737	0	4.127	Water Level (in)
LDP-608	PZR Lower Surge Line Pipe Uncompensated Water Level	0.9964	4.9731	0	3.82	Water Level (in)
LDP-609	PZR Surge Line Pipe Uncompensated Water Level at HL-2	1.0011	4.996	0	14.717	Water Level (in)
LDP-610	ADS1-3 Separator Uncompensated Water Level	1.0399	5.193	0	45.24	Water Level (in)
LDP-611	ADS4-1 Separator Uncompensated Water Level	1.0342	5.1628	0	55.97	Water Level (in)
LDP-612	ADS4-2 Separator Uncompensated Water Level	1.0386	5.1859	0	56.6	Water Level (in)
LDP-701	IRWST Uncompensated Water Level	1.0048	5.0202	0	115.8	Water Level (in)
LDP-801	PRHR HX Inlet Head Uncompensated Water Level	1.0013	4.9945	0	6.971	Water Level (in)
LDP-802	PRHR HX WR Uncompensated Water Level	0.9998	4.9871	0	57.08	Water Level (in)
LDP-901	Primary Sump Uncompensated Water Level	1.0015	5.0016	0	104.36	Water Level (in)
LDP-902	Secondary Sump Uncompensated Water Level	1.0007	5.0018	0	102.56	Water Level (in)
LDP-903	CRT Uncompensated Water Level	1.0346	5.1669	0	32.358	Water Level (in)
LDP-905	Break Separator Uncompensated Water Level	1.0378	5.1788	0	130.68	Water Level (in)
LT-120	Rx Vessel Capacitance Probe Water Level	1.0042	5.0053	50	99	Water Level (in)
PT-001	MFP Discharge Pressure	1.0121	5.0658	0	600	Pressure (psig)
PT-002	SG 2 (FVM-003) Steam Pressure	0.9962	4.9759	0	500	Pressure (psig)
PT-003	Lab Barometer	0.9944	4.9656	10	20	Pressure (psia)
PT-004	U-Tube Inlet (FVM-002) Steam Pressure	1.0016	5.0026	0	400	Pressure (psig)
PT-009	SG-1 PORV Blowdown Pressure	0.9983	4.9816	0	300	Pressure (psig)
PT-010	SG-2 PORV Blowdown Pressure	1.0004	4.9924	0	300	Pressure (psig)

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
PT-101	CL-1 Pressure at Rx Flange	0.9986	4.9877	0	500	Pressure (psig)
PT-102	CL-2 Pressure at Rx Flange	0.9958	4.9706	0	10	Pressure (psig)
PT-103	CL-3 Pressure at Rx Flange	0.9946	4.9646	0	10	Pressure (psig)
PT-104	CL-4 Pressure at Rx Flange	0.9988	4.9882	0	500	Pressure (psig)
PT-107	Rx Upper Head Pressure	1.0096	5.0478	0	500	Pressure (psig)
PT-108	Bottom of Rx Pressure	0.9938	4.9637	0	500	Pressure (psig)
PT-109	DVI-1 Pressure at Rx Flange	0.998	4.9874	0	500	Pressure (psig)
PT-110	DVI-2 Pressure at Rx Flange	0.9984	4.9825	0	10	Pressure (psig)
PT-111	Rx Annular Pressure at Flow Bypass Holes	0.9982	4.9886	0	500	Pressure (psig)
PT-112	Rx Annular Pressure at Bottom of Rx	0.9958	4.977	0	10	Pressure (psig)
PT-113	Rx Pressure Below Mid-Core Spacer Grid	0.9921	4.9616	0	500	Pressure (psig)
PT-201	SG-1 Long Tube Pressure (Top)	1.0008	4.9935	0	500	Pressure (psig)
PT-202	HL-2 Pressure at SG-2 Flange	0.9978	4.9841	0	500	Pressure (psig)
PT-203	CL Break Pressure at Break Valve	0.9982	4.988	0	500	Pressure (psig)
PT-204	SG-2 Long Tube Pressure (Top)	1.0005	4.9974	0	500	Pressure (psig)
PT-205	HL-1 Pressure at SG-1 Flange	0.9988	4.9838	0	400	Pressure (psig)
PT-206	HL Break Pressure at Break Valve	0.9982	4.9869	0	500	Pressure (psig)
PT-301	SG-1 Pressure	1.0123	5.0617	0	500	Pressure (psig)
PT-302	SG-2 Pressure	1.0219	5.1023	0	500	Pressure (psig)
PT-401	ACC-1 Pressure	0.9993	4.9908	0	300	Pressure (psig)
PT-402	ACC-2 Pressure	0.9975	4.9802	0	300	Pressure (psig)
PT-501	U-Tube Outlet (FVM-001) Steam Pressure	0.9979	4.982	0	300	Pressure (psig)
PT-502	CMT-2 Pressure	0.998	4.9869	0	500	Pressure (psig)
PT-602	PZR NR Pressure	0.9988	4.9747	300	400	Pressure (psig)
PT-603	PZR NR Pressure	0.9944	4.9616	0	10	Pressure (psig)
PT-604	PZR WR Pressure	0.9942	4.9794	0	500	Pressure (psig)
PT-605	ADS1-3 Separator Pressure	0.9966	4.9725	0	100	Pressure (psig)
PT-606	IRWST Sparger Line Pressure	0.995	4.9653	0	100	Pressure (psig)
PT-610	ADS4-2 Separator Pressure	0.9983	4.9845	0	10	Pressure (psig)
PT-611	ADS4-1 Separator Pressure	0.9977	4.9806	0	10	Pressure (psig)
PT-701	IRWST Pressure	1.0087	5.0436	0	15	Pressure (psig)
PT-801	CVSP Discharge Pressure	0.9993	4.9909	0	500	Pressure (psig)
PT-802	RNSP Discharge Pressure	0.9962	4.9768	0	250	Pressure (psig)
PT-901	Primary Sump Pressure	0.9947	4.9659	0	10	Pressure (psig)
PT-902	BAMS Header Pressure	1.0013	4.9988	0	16	Pressure (psig)
PT-905	Break Separator Pressure	1.0067	5.0265	0	20	Pressure (psig)
TF-005	Lab Ambient Temperature at Ground Level	0	1000	0	1000	Fluid Temperature (F)
TF-006	Lab Ambient Temperature at Second Level	0	1000	0	1000	Fluid Temperature (F)
TF-007	Lab Ambient Temperature at Third Level	0	1000	0	1000	Fluid Temperature (F)
TF-009	SG-1 PORV Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-010	SG-2 PORV Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-101	CL-3 Temperature (SC-101)	40	450	40	450	Fluid Temperature (F)
TF-101-1.3D-2	CL-1 Downcomer Temperature at 1.3D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-2D-1	CL-1 Downcomer Temperature at 2D, 120 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-2D-2	CL-1 Downcomer Temperature at 2D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-2D-3	CL-1 Downcomer Temperature at 2D, 150 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-3D-1	CL-1 Downcomer Temperature at 3D, 104 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-3D-2	CL-1 Downcomer Temperature at 3D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-101-3D-3	CL-1 Downcomer Temperature at 3D, 166 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-4D-1	CL-1 Downcomer Temperature at 4D, 90 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-4D-2	CL-1 Downcomer Temperature at 4D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-8D-1	CL-1 Downcomer Temperature at 8D, 90 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-101-8D-2	CL-1 Downcomer Temperature at 8D, 135 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102	CL-4 Temperature (SC-102)	40	450	40	450	Fluid Temperature (F)
TF-102-1.3D-2	CL-2 Downcomer Temperature at 1.3D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-2D-1	CL-2 Downcomer Temperature at 2D, 210 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-2D-2	CL-2 Downcomer Temperature at 2D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-2D-3	CL-2 Downcomer Temperature at 2D, 240 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-3D-1	CL-2 Downcomer Temperature at 3D, 194 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-3D-2	CL-2 Downcomer Temperature at 3D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-3D-3	CL-2 Downcomer Temperature at 3D, 256 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-4D-2	CL-2 Downcomer Temperature at 4D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-8D-1	CL-2 Downcomer Temperature at 8D, 180 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-102-8D-2	CL-2 Downcomer Temperature at 8D, 225 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-1.3D-2	CL-3 Downcomer Temperature at 1.3D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-2D-1	CL-3 Downcomer Temperature at 2D, 30 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-2D-2	CL-3 Downcomer Temperature at 2D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-2D-3	CL-3 Downcomer Temperature at 2D, 60 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-3D-1	CL-3 Downcomer Temperature at 3D, 14 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-3D-2	CL-3 Downcomer Temperature at 3D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-3D-3	CL-3 Downcomer Temperature at 3D, 76 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-4D-2	CL-3 Downcomer Temperature at 4D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-8D-1	CL-3 Downcomer Temperature at 8D, 0 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-103-8D-2	CL-3 Downcomer Temperature at 8D, 45 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-1.3D-2	CL-4 Downcomer Temperature at 1.3D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-2D-1	CL-4 Downcomer Temperature at 2D, 300 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-2D-2	CL-4 Downcomer Temperature at 2D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-2D-3	CL-4 Downcomer Temperature at 2D, 330 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-1	CL-4 Downcomer Temperature at 3D, 284 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-1.5	CL-4 Downcomer Temperature at 3D, 300 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-2	CL-4 Downcomer Temperature at 3D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-2.5	CL-4 Downcomer Temperature at 3D, 330 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-3D-3	CL-4 Downcomer Temperature at 3D, 345 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-1	CL-4 Downcomer Temperature at 4D, 270 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-1.3	CL-4 Downcomer Temperature at 4D, 285 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-1.6	CL-4 Downcomer Temperature at 4D, 300 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-2	CL-4 Downcomer Temperature at 4D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-2.3	CL-4 Downcomer Temperature at 4D, 330 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-4D-2.6	CL-4 Downcomer Temperature at 4D, 345 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-1	CL-4 Downcomer Temperature at 8D, 270 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-1.3	CL-4 Downcomer Temperature at 8D, 285 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-1.6	CL-4 Downcomer Temperature at 8D, 300 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-2	CL-4 Downcomer Temperature at 8D, 315 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-2.3	CL-4 Downcomer Temperature at 8D, 330 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-104-8D-2.6	CL-4 Downcomer Temperature at 8D, 345 degrees	0	1000	0	1000	Fluid Temperature (F)
TF-105	CL-1 Temperature (SC-105)	40	450	40	450	Fluid Temperature (F)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-106	CL-2 Temperature (SC-106)	40	450	40	450	Fluid Temperature (F)
TF-107	CL-1/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-108	CL-2/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-113	DVI-1/Rx Flange at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-114	DVI-2/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-115	DVI-1/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-116	DVI-2/Rx Flange at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-118	Lower Rx Vessel Layer Y-Y at 30 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-120	Top of Rx at 8.5 Inches & 350 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-126	Lower Rx Vessel Layer A-A at 225 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-127	Lower Rx Vessel Layer A-A at 315 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-128	Lower Rx Vessel Layer C-C at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-129	Lower Rx Vessel Layer C-C at 32 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-130	Lower Rx Vessel Layer G-G at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-131	Lower Rx Vessel Layer G-G at 11.3 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-132	Upper Rx Vessel Layer F-F at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-133	Upper Rx Vessel Layer F-F at 8 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-134	Upper Rx Vessel Layer E-E at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-135	Upper Rx Vessel Layer E-E at 6.2 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-140	HL-2 Temperature at Rx Flange (SC-140)	40	450	40	450	Fluid Temperature (F)
TF-141	HL-1 Temperature at Rx Flange (SC-141)	40	450	40	450	Fluid Temperature (F)
TF-142	HL-2/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-143	HL-1/Rx Flange at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-147	Upper Rx Vessel Layer I-I at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-148	Upper Rx Vessel Layer I-I at 188 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-149	Upper Rx Vessel Layer H-H at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-150	Upper Rx Vessel Layer H-H at 186.2 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-151	Upper Rx Vessel Layer E-E at 186.2 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-152	Upper Rx Vessel Layer E-E at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-153	Upper Rx Vessel Layer F-F at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-154	Upper Rx Vessel Layer F-F at 188 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-155	Lower Rx Vessel Layer G-G at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-156	Lower Rx Vessel Layer G-G at 191.3 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-157	Lower Rx Vessel Layer C-C at 212 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-158	Lower Rx Vessel Layer C-C at 180 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-162	Lower Rx Vessel Layer A-A at 45 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-163	Lower Rx Vessel Layer A-A at 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-164	Upper Rx Vessel Layer H-H at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-165	Upper Rx Vessel Layer H-H at 6.2 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-166	Upper Rx Vessel Layer I-I at 0 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-167	Rx Heater Rod B2-319 at 40.13 inches	0	1000	0	1000	Fluid Temperature (F)
TF-168	Upper Rx Vessel Layer K-K at 270 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-169	Upper Rx Vessel Layer M-M at 90 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-171	Top of Rx Down to within 0.50 inches of Upper Support Plate Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-173	Lower Rx Vessel Layer AA-AA at 270 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-201	CL-1 at RCP-1 Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-202	CL-2 at RCP-2 Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-203	U-Tube Outlet (FVM-001) Steam Temperature	0	1000	0	1000	Fluid Temperature (F)

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-204	CL-4 at RCP-4 Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-205	HL-1 Temperature at SG-1 Head (SC-205)	40	450	40	450	Fluid Temperature (F)
TF-206	HL-2 Temperature at SG-2 Head (SC-206)	40	450	40	450	Fluid Temperature (F)
TF-207	SG-1 Short Tube at Middle Outlet Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-208	SG-2 Short Tube at Middle Outlet Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-209	SG-1 Short Tube at Middle Inlet Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-210	SG-2 Short Tube at Middle Inlet Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-211	SG-1 Long Tube at Middle Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-212	SG-2 Long Tube at Middle Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-213	SG-1 Long Tube at Middle Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-214	SG-2 Long Tube at Middle Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-215	SG-1 Short Tube at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-216	SG-2 Short Tube at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-217	SG-1 Long Tube at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-218	SG-2 Long Tube at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-222	CL-4 T/C Rod at 3.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-223	CL-3 T/C Rod at 2.50 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-224	CL-4 T/C Rod at 2.50 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-225	CL-3 T/C Rod at 1.75 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-226	CL-4 T/C Rod at 1.75 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-227	CL-3 T/C Rod at 1.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-228	CL-4 T/C Rod at 1.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-229	CL-3 T/C Rod at 0.75 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-230	CL-4 T/C Rod at 0.75 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-231	CL-3 T/C Rod at 0.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-232	CL-4 T/C Rod at 0.25 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-251-1	CL-1 Loop Seal Upper Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-251-2	CL-1 Loop Seal Middle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-251-3	CL-1 Loop Seal Lower Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-252-1	CL-2 Loop Seal Upper Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-252-2	CL-2 Loop Seal Middle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-252-3	CL-2 Loop Seal Lower Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-253-1	CL-3 Loop Seal Upper Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-253-2	CL-3 Loop Seal Middle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-253-3	CL-3 Loop Seal Lower Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-254-1	CL-4 Loop Seal Upper Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-254-2	CL-4 Loop Seal Middle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-254-3	CL-4 Loop Seal Lower Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-255	CL-1 Safety Injection Nozzle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-256	CL-2 Safety Injection Nozzle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-257	CL-3 Safety Injection Nozzle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-258	CL-4 Safety Injection Nozzle Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-301	SG-1 Steam Temperature (SC-301)	40	450	40	450	Fluid Temperature (F)
TF-305	SG-1 Downcomer HL Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-306	SG-2 Downcomer HL Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-307	SG-1 Downcomer CL Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-308	SG-2 Downcomer CL Side Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-310	SG-2 Steam Temperature (SC-310)	40	450	40	450	Fluid Temperature (F)

Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-311	SG-1 Feed Header Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-312	SG-2 Feed Header Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-401	ACC-1 Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-402	ACC-2 Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-403	ACC-1 N2Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-404	ACC-2 N2 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-405	ACC-1 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-406	ACC-2 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-501	CMT-1 Long T/C Rod at 0.30 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-502	CMT-2 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-503	CMT-1 at 1/2 Lower Head Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-504	CMT-2 Long T/C Rod at 0.30 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-505	CMT-1 at 20% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-506	CMT-2 at 1/2 Lower Head Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-507	CMT-1 Long T/C Rod at 20.87 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-508	CMT-2 at 20% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-510	CMT-2 Long T/C Rod at 20.87 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-511	CMT-1 at 50% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-513	CMT-1 Long T/C Rod at 40.59 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-514	CMT-2 at 50% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-515	CMT-1 Long T/C Rod at 43.41 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-516	CMT-2 Long T/C Rod at 40.59 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-517	CMT-1 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-518	CMT-2 Long T/C Rod at 43.41 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-519	CMT-1 Long T/C Rod at 46.23 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-520	CMT-2 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-521	CMT-1 at 75% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-522	CMT-2 Long T/C Rod at 46.23 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-523	CMT-1 Long T/C Rod at 49.05 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-524	CMT-2 at 75% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-525	CMT-1 at 1/2 Upper-Head Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-527	CMT-1 Long T/C Rod at 51.87 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-528	CMT 2\3 HEAD TEMP	0	1000	0	1000	Fluid Temperature (F)
TF-529	CMT-1 Long T/C Rod at 56.61 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-531	CMT-1 Balance Line at CMT Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-532	CMT-2 Long T/C Rod at 56.61 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-533	CMT-1 CL Balance Line at CL-3 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-535	CMT-1 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-536	CMT-2 CL Balance Line at CL-1 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-537	CMT-1 at 20% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-538	CMT-2 at 20% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-539	CMT-1 at 50% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-540	CMT-2 at 50% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-541	CMT-1 at 60% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-542	CMT-2 at 60% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-543	CMT-1 at 75% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-544	CMT-2 at 75% Volume-Height, 135 degrees Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-546	CMT-2 Balance Line at CMT Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-547	CMT-1 Long T/C Rod at 54.24 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-548	CMT-2 Long T/C Rod at 54.24 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-549	CMT-1 Discharge Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-550	CMT-2 Discharge Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-551	CMT-1 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-552	CMT-2 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-553	CMT-1 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-554	CMT-2 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-555	CMT-1 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-556	CMT-2 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-557	CMT-1 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-558	CMT-2 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-559	CMT-1 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-560	CMT-2 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-561	CMT-1 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-562	CMT-2 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-563	CMT-1 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-564	CMT-2 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-601	PZR Surge Line at PZR Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-602	ADS1-3 Common Line at PZR Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-603	PZR Surge Line at HL-2 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-605	PZR Water Space Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-608	PZR Temperature (SC-608)	40	450	40	450	Fluid Temperature (F)
TF-609	ADS4-1 Discharge Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-610	ADS4-2 Discharge Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-614	PZR Steam Vent Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-615	ADS1-3 Common Line From PZR Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-616	ADS1-3 Separator Loop Seal Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-617	ADS1-3 Separator Steam Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-618	ADS4-2 Loop Seal Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-619	ADS4-1 Loop Seal Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-620	ADS4-2 Inlet From HL-2 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-621	ADS4-1 Inlet From HL-1 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-622	ADS4-2 Separator Steam Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-623	ADS4-1 Separator Steam Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-701	IRWST/PRHR T/C Rod at Bottom Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-702	IRWST/PRHR T/C Rod at 7.98 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-703	IRWST/PRHR T/C Rod at 15.97 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-704	IRWST/PRHR T/C Rod at 25.85 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-705	IRWST/PRHR T/C Rod at 35.73 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-706	IRWST/PRHR T/C Rod at 45.61 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-707	IRWST/PRHR T/C Rod at 55.49 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-708	IRWST/PRHR T/C Rod at 65.36 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-709	IRWST/PRHR T/C Rod at 75.24 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-710	IRWST/PRHR T/C Rod at 86.36 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-711	IRWST/PRHR T/C Rod at 97.47 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-712	IRWST/PRHR T/C Rod at 108.59 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-713	IRWST Discharge to DVI-01 at IRWST Temperature	0	1000	0	1000	Fluid Temperature (F)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TF-714	IRWST Discharge to DVI-02 at IRWST Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-715	IRWST Sparger T/C Rod at 8.97 inches Temperature (SC-715)	0	1000	0	1000	Fluid Temperature (F)
TF-716	IRWST Sparger T/C Rod at 36.63 inches Temperature	40	240	40	240	Fluid Temperature (F)
TF-717	IRWST Sparger T/C Rod at 66.34 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-718	IRWST Sparger T/C Rod at 98.45 inches Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-719	IRWST Sparger Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-720	IRWST/DVI-2 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-721	IRWST/DVI-1 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-722	IRWST Steam Exhaust Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-723	IRWST/Primary Sump Overflow Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-801	CVSP Discharge Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-802	RNSP Discharge Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-803	PRHR HX Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-804	PRHR HX Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-805	PRHR HX Long Tube Outlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-806	PRHR HX Short Tube Outlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-808	PRHR HX Short Tube Outlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-809	PRHR HX Long Tube at Center Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-810	PRHR HX Short Tube Inlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-811	PRHR HX Long Tube Inlet at Bend Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-812	PRHR HX Outlet Head Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-813	RNSP Discharge to DVI-1 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-814	RNSP Discharge to DVI-2 Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-901	Primary Sump Inlet from Fill Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-902	Secondary Sump Temperature (SC-902)	40	240	40	240	Fluid Temperature (F)
TF-903	Primary Sump Temperature (SC-903)	40	240	40	240	Fluid Temperature (F)
TF-904	Primary Sump/DVI-2 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-905	Primary Sump at Secondary Sump Crossover Level Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-906	Primary Sump Exhaust Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-907	Primary Sump at Top Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-908	Break Separator Inlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-909	Primary Sump/DVI-1 Injection Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-910	CRP Discharge to Primary Sump Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-911	CRP Discharge to IRWST Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-912	Break Separator Loop Seal Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-913	Break Separator Steam Outlet Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-914	Condensate Return Tank Temperature (SC-914)	40	200	40	200	Fluid Temperature (F)
TF-915	Break Separator 6-inch Steam Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-916	BAMS Header 10-inch Steam Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TF-917	BAMS Header Temperature (SC-917)	40	240	40	240	Fluid Temperature (F)
TF-918	Break Separator 8-inch Steam Line Temperature	0	1000	0	1000	Fluid Temperature (F)
TH-103	Rx Heater Rod Temperature (SCTH-101-3)	40	1000	40	1000	Internal Rod Temperature (F)
TH-211	Rx Heater Rod Temperature (SCTH-103-3)	40	1000	40	1000	Internal Rod Temperature (F)
TH-305	Rx Heater Rod Temperature (SCTH-304-3)	40	1000	40	1000	Internal Rod Temperature (F)
TH-309	Rx Heater Rod Temperature (SCTH-102-4)	40	1000	40	1000	Internal Rod Temperature (F)
TH-401	Rx Heater Rod Temperature (SCTH-104-4)	40	1000	40	1000	Internal Rod Temperature (F)
TH-507	Rx Heater Rod Temperature (SCTH-314-3)	40	1000	40	1000	Internal Rod Temperature (F)
TH-601	PZR Heater Rod #1	0	1000	0	1000	Internal Rod Temperature (F)

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Name	Description	Raw Min	Raw Max	Eng Min	Eng Max	Units
TH-602	PZR Heater Rod #2	0	1000	0	1000	Internal Rod Temperature (F)
TH-603	PZR Heater Rod #3	0	1000	0	1000	Internal Rod Temperature (F)
TH-604	PZR Heater Rod #4	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-2	Core Thermocouple Rod D-001 at 19.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-3	Core Thermocouple Rod D-001 at 25.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-4	Core Thermocouple Rod D-001 at 31.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-5	Core Thermocouple Rod D-001 at 37.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-001-6	Core Thermocouple Rod D-001 at 43.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-1	Core Thermocouple Rod D-303 at 10.50 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-2	Core Thermocouple Rod D-303 at 19.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-3	Core Thermocouple Rod D-303 at 25.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-4	Core Thermocouple Rod D-303 at 31.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-5	Core Thermocouple Rod D-303 at 37.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-303-6	Core Thermocouple Rod D-303 at 43.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-1	Core Thermocouple Rod E-308 at 22.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-2	Core Thermocouple Rod E-308 at 34.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-3	Core Thermocouple Rod E-308 at 46.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-4	Core Thermocouple Rod D-001 at 49.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-5	Core Thermocouple Rod D-001 at 51.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-308-6	Core Thermocouple Rod D-303 at 49.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-1	Core Thermocouple Rod D-313 at 10.50 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-2	Core Thermocouple Rod D-313 at 19.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-3	Core Thermocouple Rod D-313 at 25.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-4	Core Thermocouple Rod D-313 at 31.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-5	Core Thermocouple Rod D-313 at 37.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-313-6	Core Thermocouple Rod D-313 at 43.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-1	Core Thermocouple Rod F-318 at 28.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-2	Core Thermocouple Rod F-318 at 40.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-3	Core Thermocouple Rod F-318 at 51.86 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-4	Core Thermocouple Rod D-303 at 51.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-5	Core Thermocouple Rod D-313 at 49.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TR-318-6	Core Thermocouple Rod D-313 at 51.13 inches	0	1000	0	1000	Internal Rod Temperature (F)
TW-104-1.5D-2	CL-4 Downcomer Wall Temperature at 1.5D, 315 degrees	0	1000	0	1000	Wall Temperature (F)
TW-104-3.5D-2	CL-4 Downcomer Wall Temperature at 3.5D, 315 degrees	0	1000	0	1000	Wall Temperature (F)
TW-104-3.5D-3	CL-4 Downcomer Wall Temperature at 3.5D, 345 degrees	0	1000	0	1000	Wall Temperature (F)
TW-201	SG-1 Short Tube Bottom Outlet	0	1000	0	1000	Wall Temperature (F)
TW-203	SG-1 Short Tube Bottom Inlet	0	1000	0	1000	Wall Temperature (F)
TW-208	SG-2 Long Tube Bottom Inlet	0	1000	0	1000	Wall Temperature (F)
TW-601	ADS1-3 Separator Wall Temperature	0	1000	0	1000	Wall Temperature (F)
TW-602	ADS4-2 Separator Wall Temperature	0	1000	0	1000	Wall Temperature (F)
TW-603	ADS4-1 Separator Wall Temperature	0	1000	0	1000	Wall Temperature (F)
TW-801	PRHR HX Long Tube Outlet	0	1000	0	1000	Wall Temperature (F)
TW-802	PRHR HX Short Tube Outlet	0	1000	0	1000	Wall Temperature (F)
TW-805	PRHR HX Short Tube Upper Mid-piece	0	1000	0	1000	Wall Temperature (F)
TW-806	PRHR HX Long Tube Upper Mid-piece	0	1000	0	1000	Wall Temperature (F)
TW-807	PRHR HX Short Tube Inlet	0	1000	0	1000	Wall Temperature (F)
TW-808	PRHR HX Long Tube Inlet	0	1000	0	1000	Wall Temperature (F)
TW-905	Break Separator Wall Temperature	0	1000	0	1000	Wall Temperature (F)

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DEPARTMENT OF NUCLEAR ENGINEERING &
RADIATION HEALTH PHYSICS

**ADVANCED THERMAL HYDRAULIC
RESEARCH LABORATORY**

**STEAM GENERATOR U-TUBE CONDENSATION
TEST @ 300 PSIG**

NRC-COND-04

Revision 0

1/18/2007

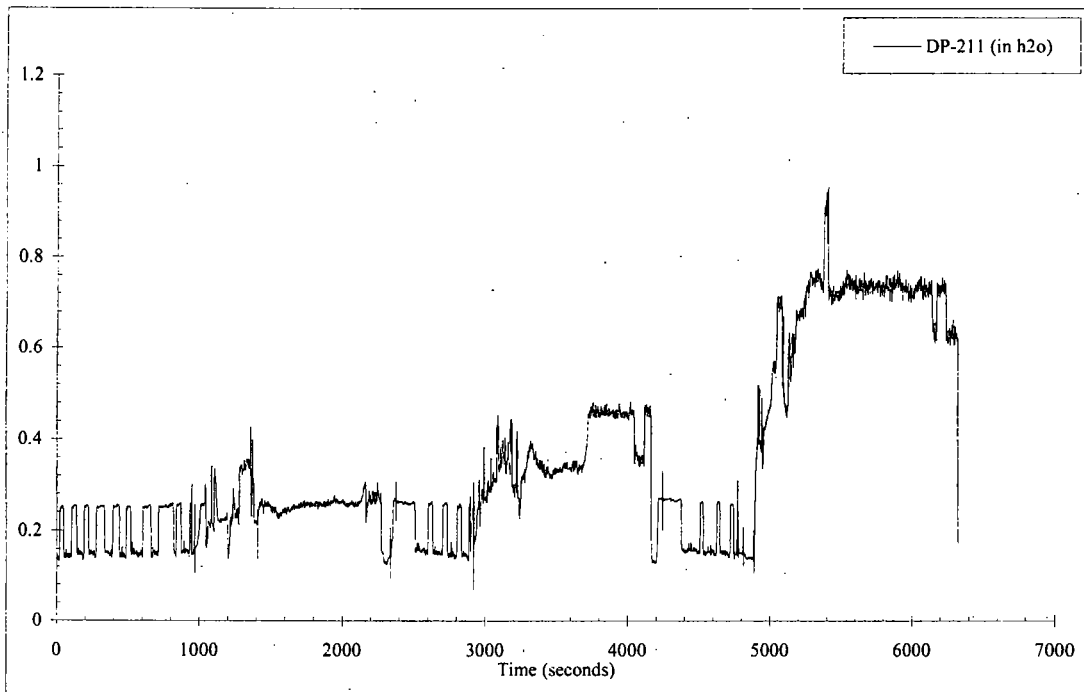
John Groome, Originator
Facility Operations Manager
Research Assistant

Date

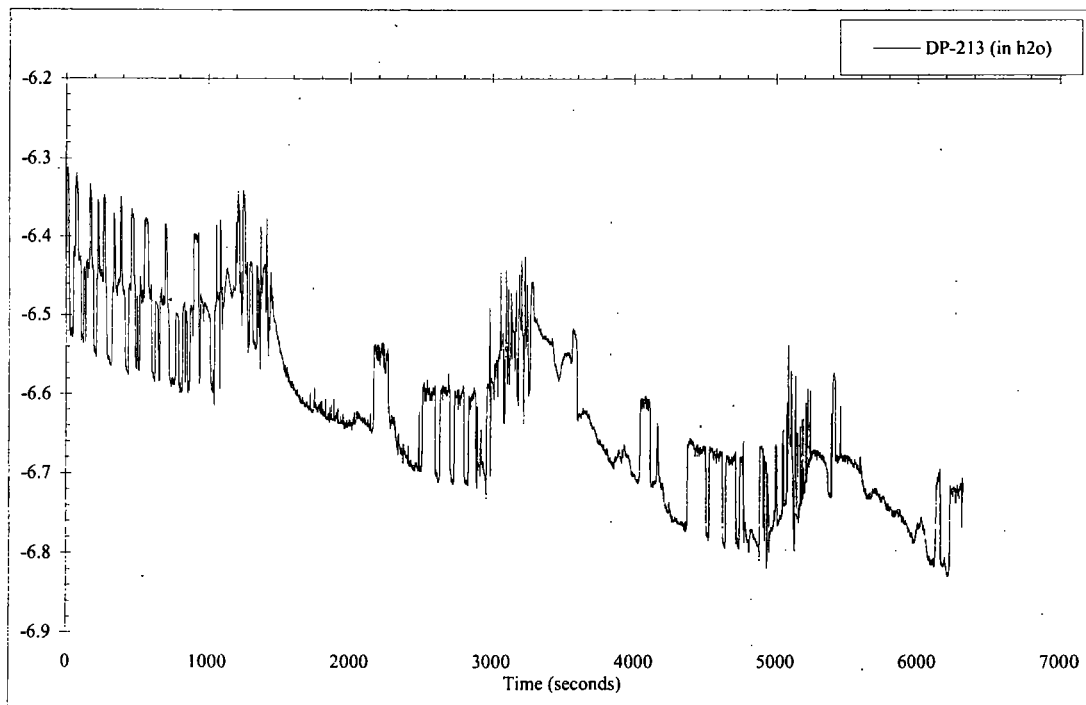
1/18/2007

Brian Woods, Approval
Program Manager
Assistant Professor

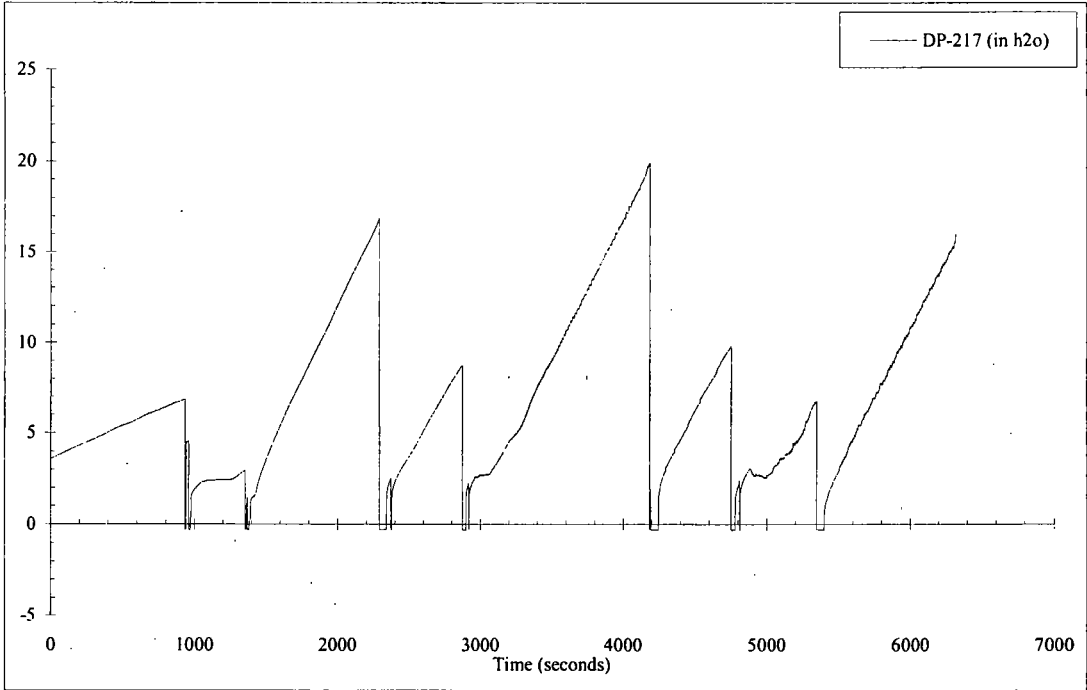
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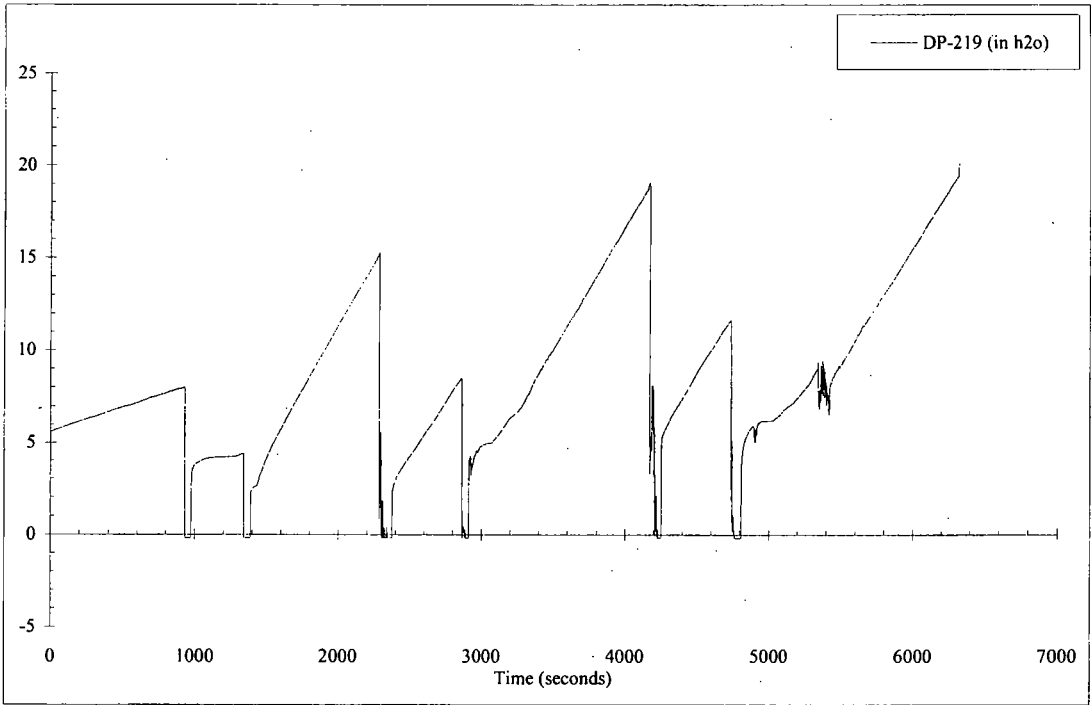
SG-1 Short Tube Entrance Losses



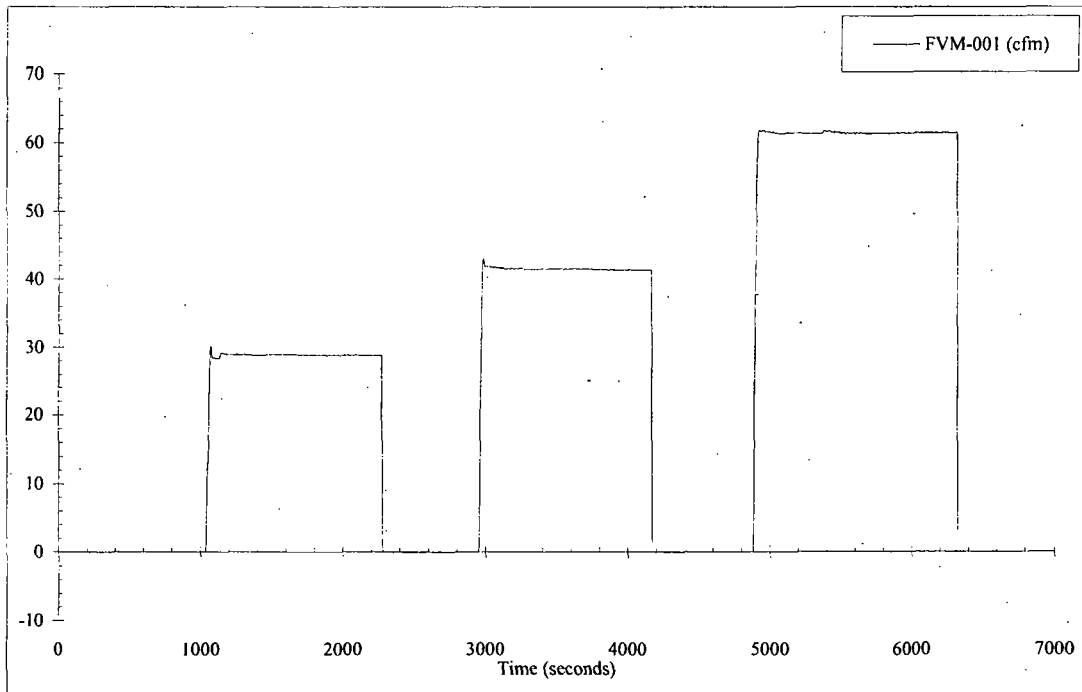
SG-1 Long Tube Exit Losses



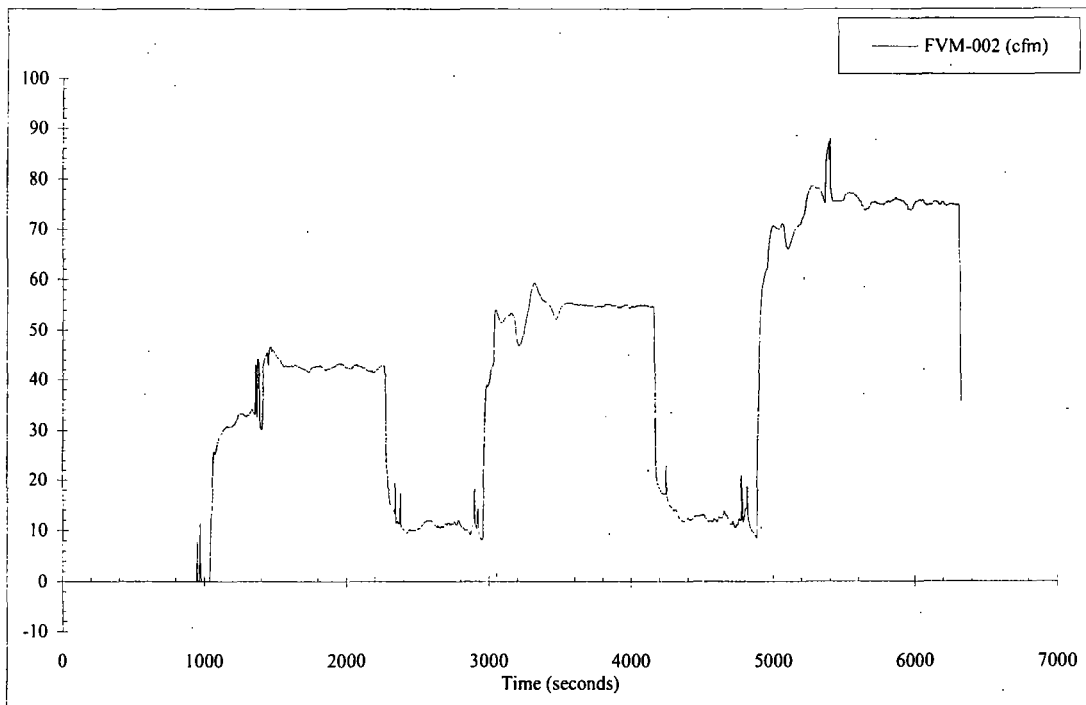
Separator Uncompensated Water Level



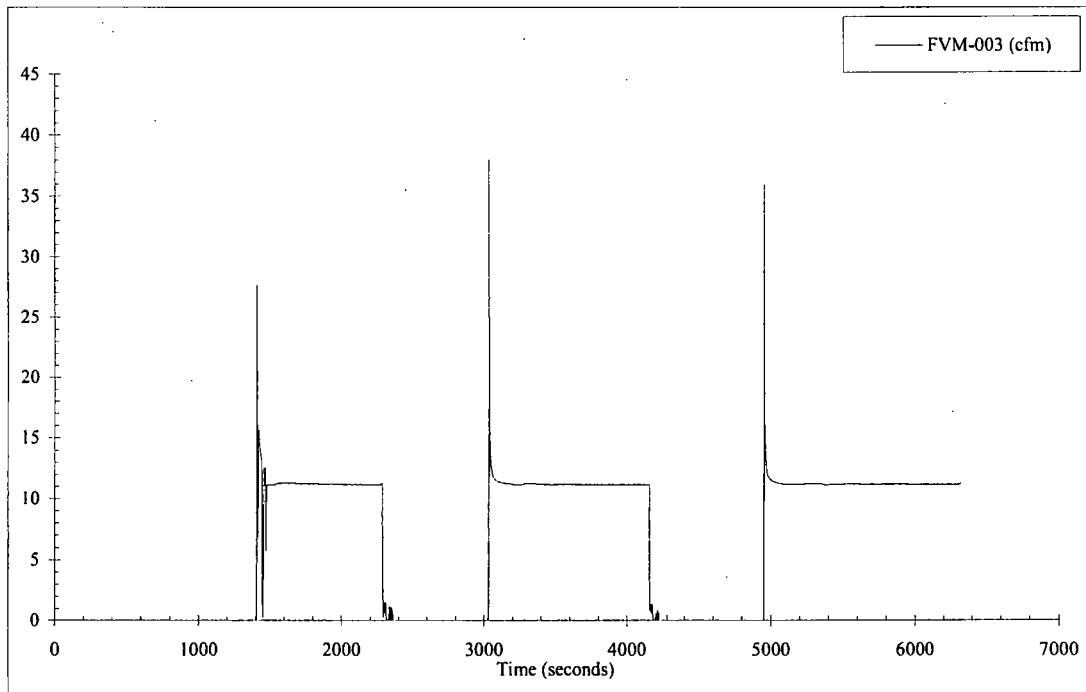
Catch Tank Uncompensated Water Level



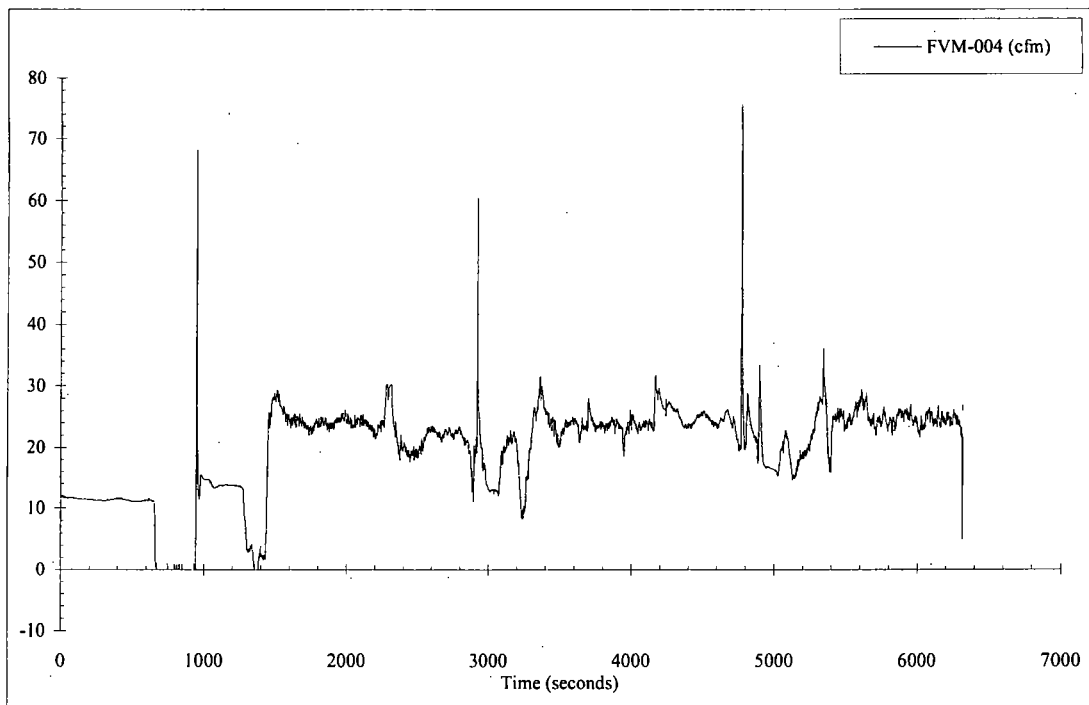
Separator Outlet Steam Flowrate



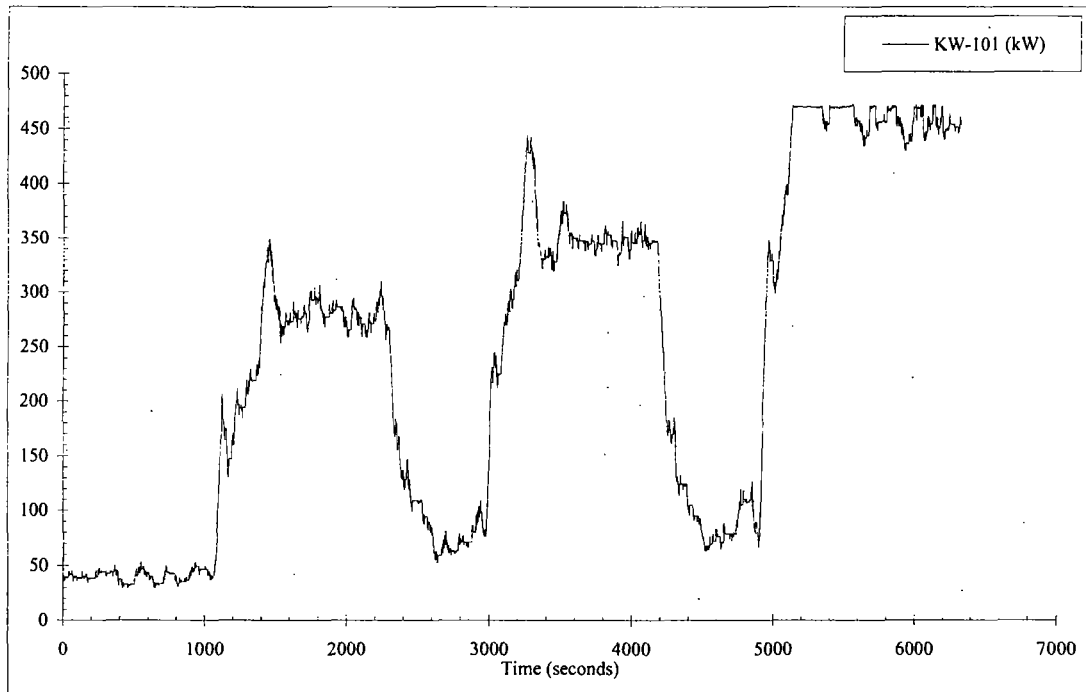
SG-2 Main Steam Flow



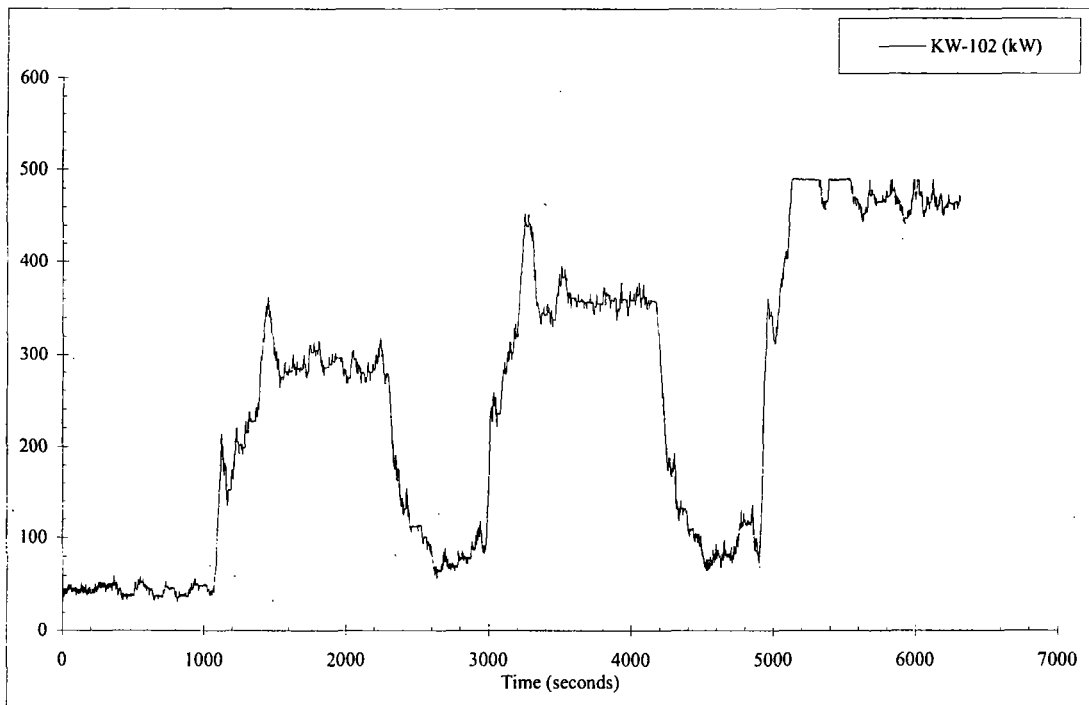
Main Steam Total Flow



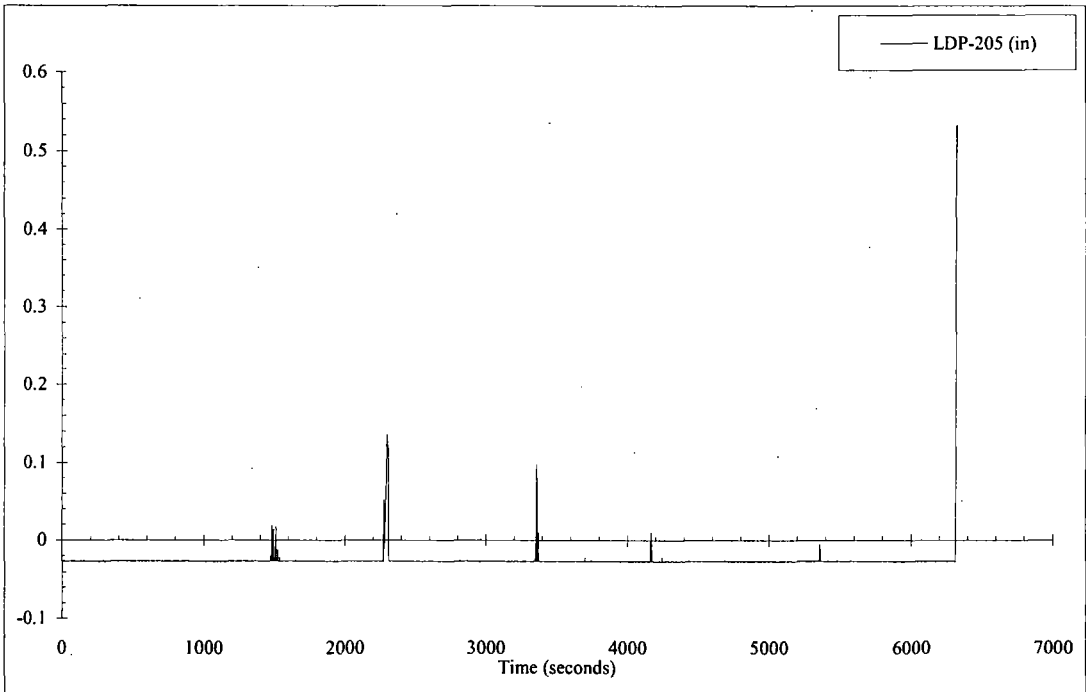
Catch Tank Steam Flow Rate



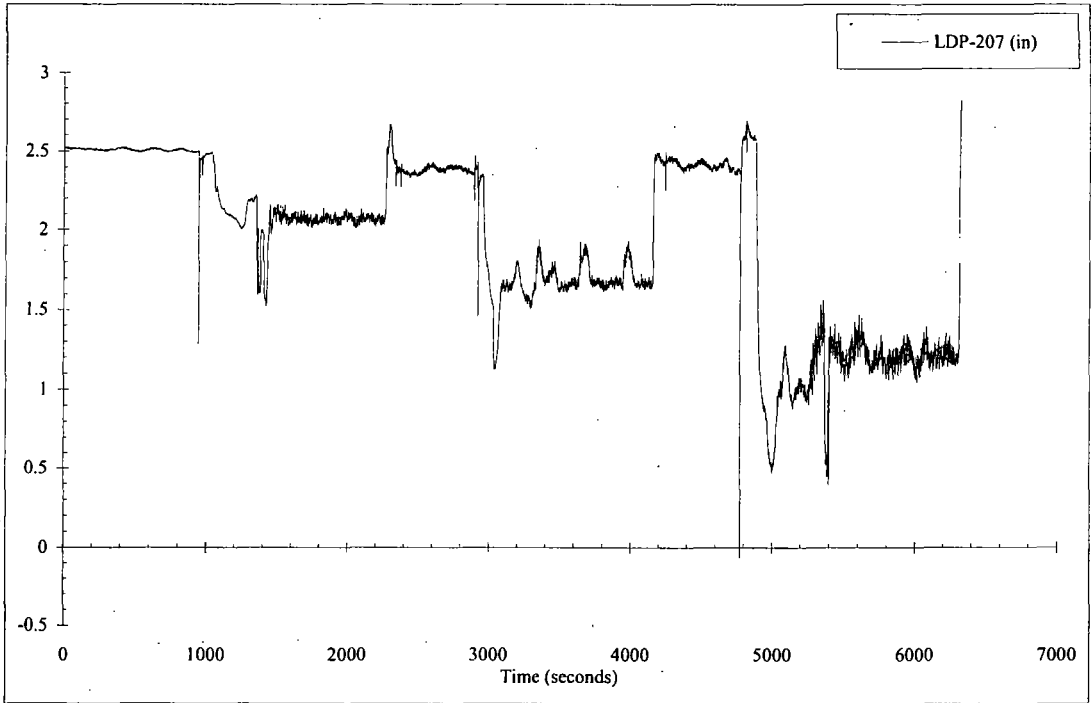
Rx Heater Group 1 Power



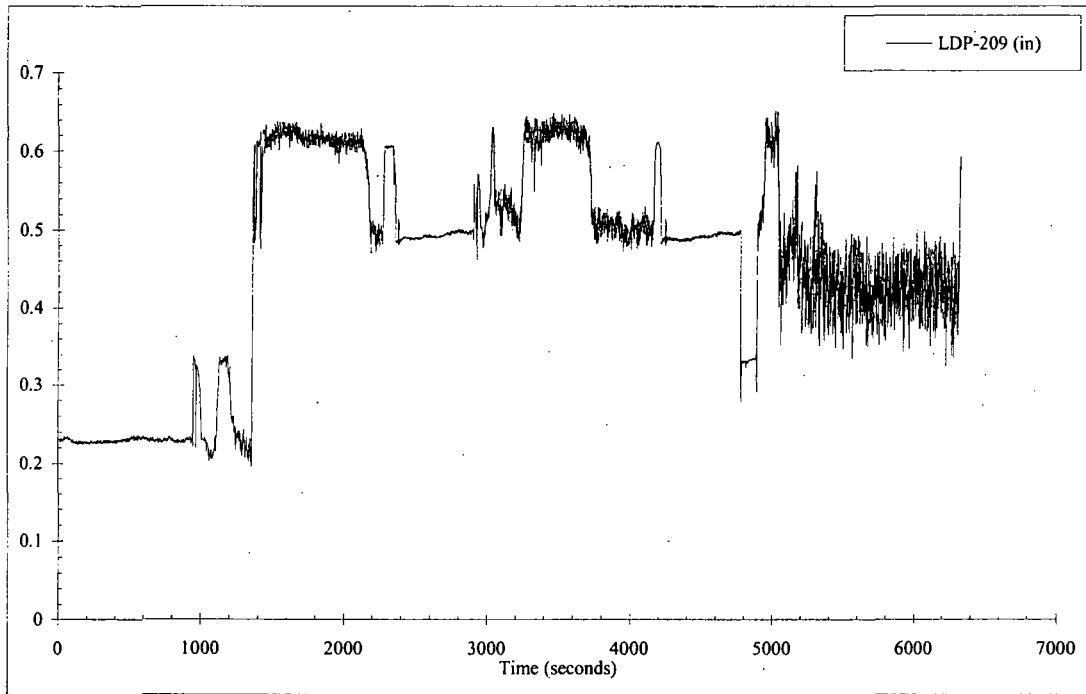
Rx Heater Group 2 Power



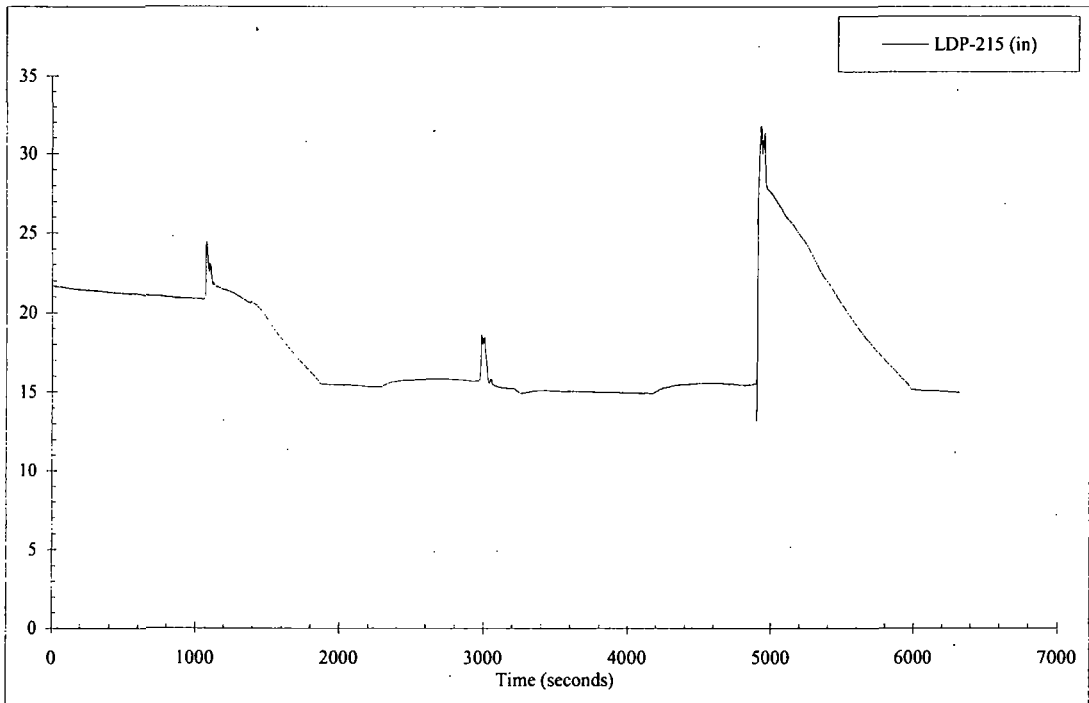
HL-1 Uncompensated Water Level



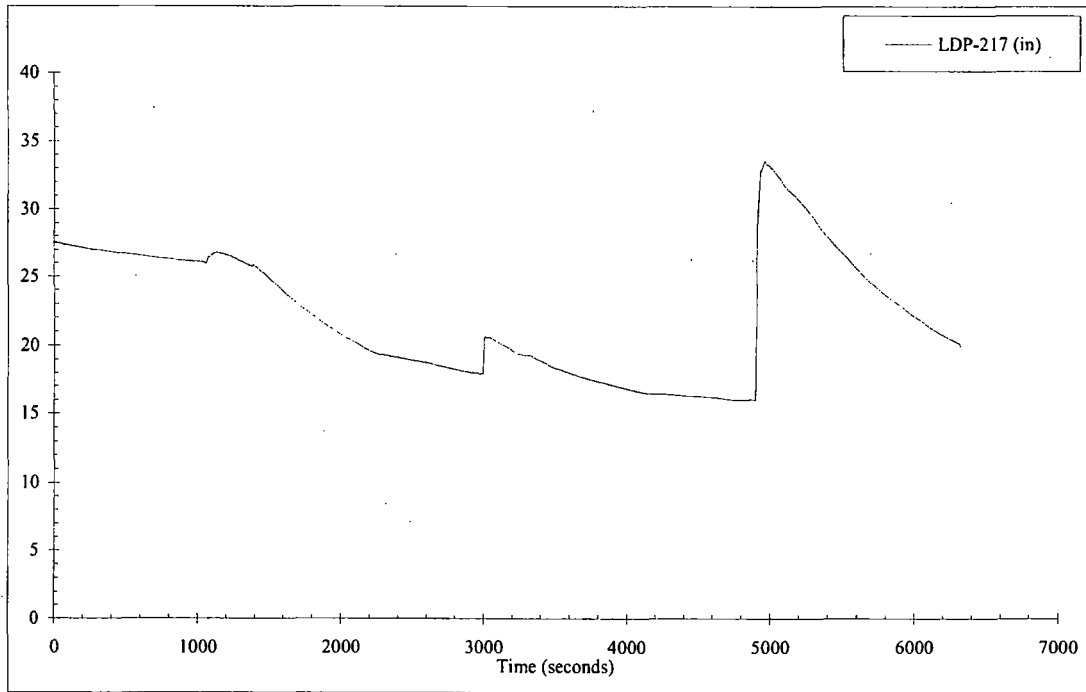
SG-1 to HL-1 Elbow Plenum Uncompensated Water Level



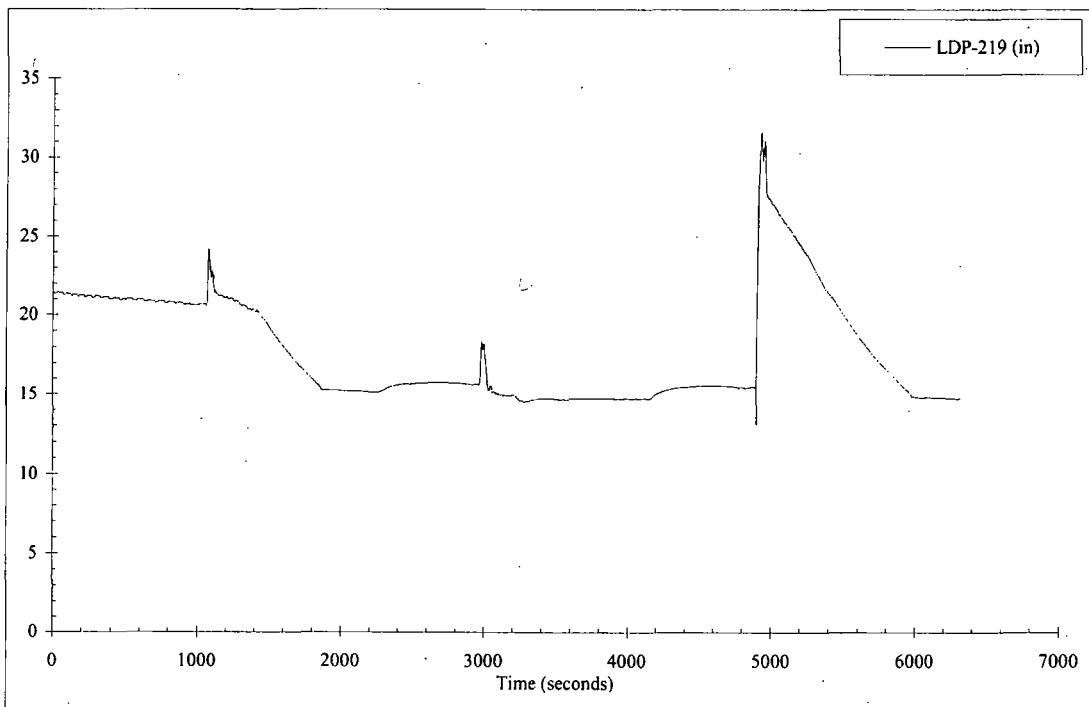
SG-1 to HL-1 Plenum Uncompensated Water Level



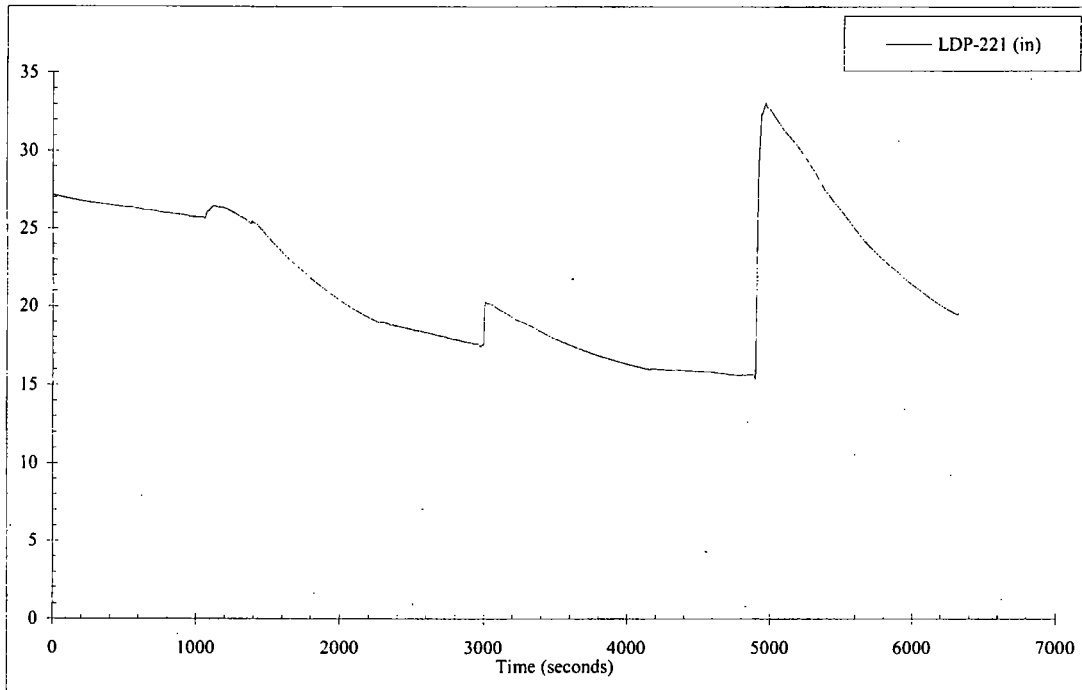
SG-1 Long Tube to HL Uncompensated Water Level



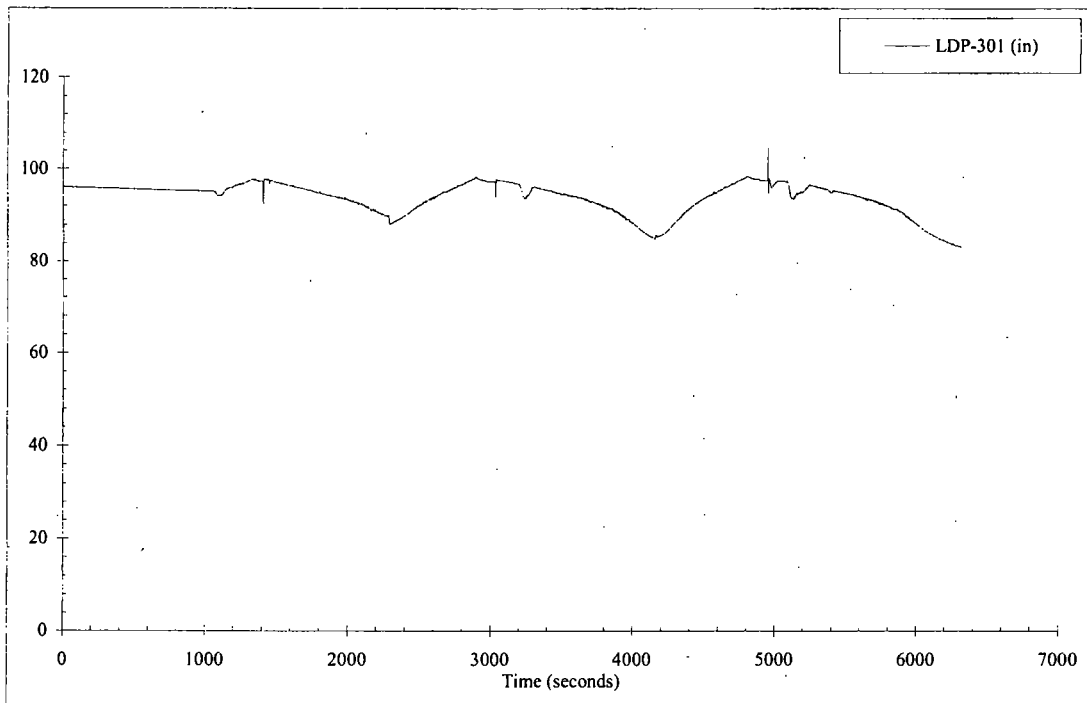
SG-1 Short Tube to HL Uncompensated Water Level



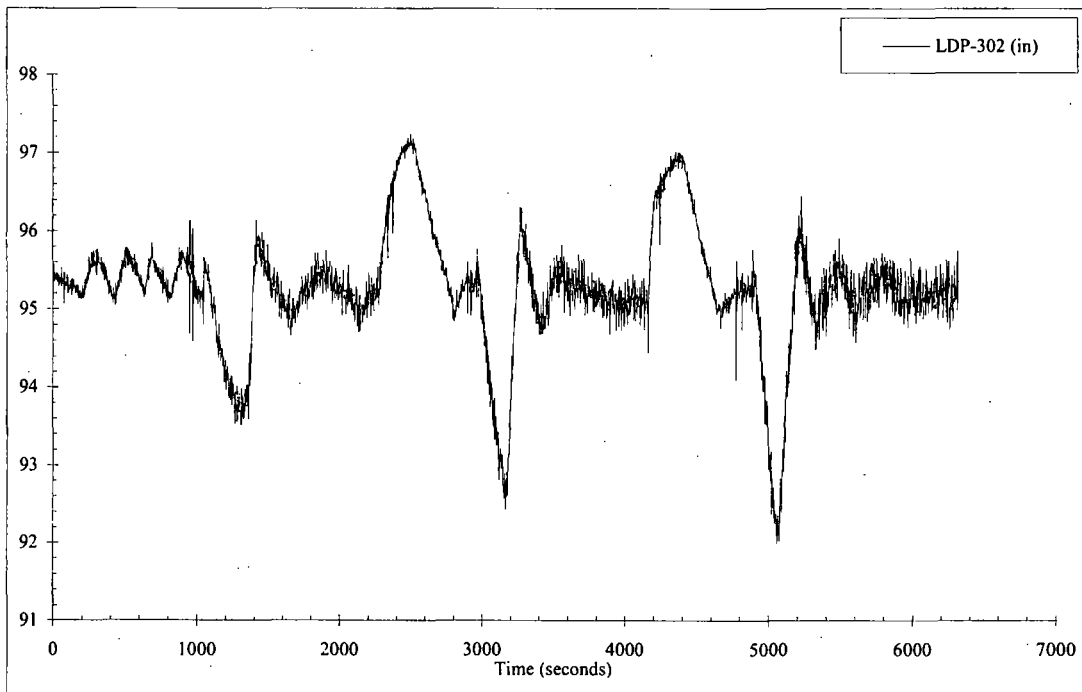
SG-1 Long Tube to CL Uncompensated Water Level



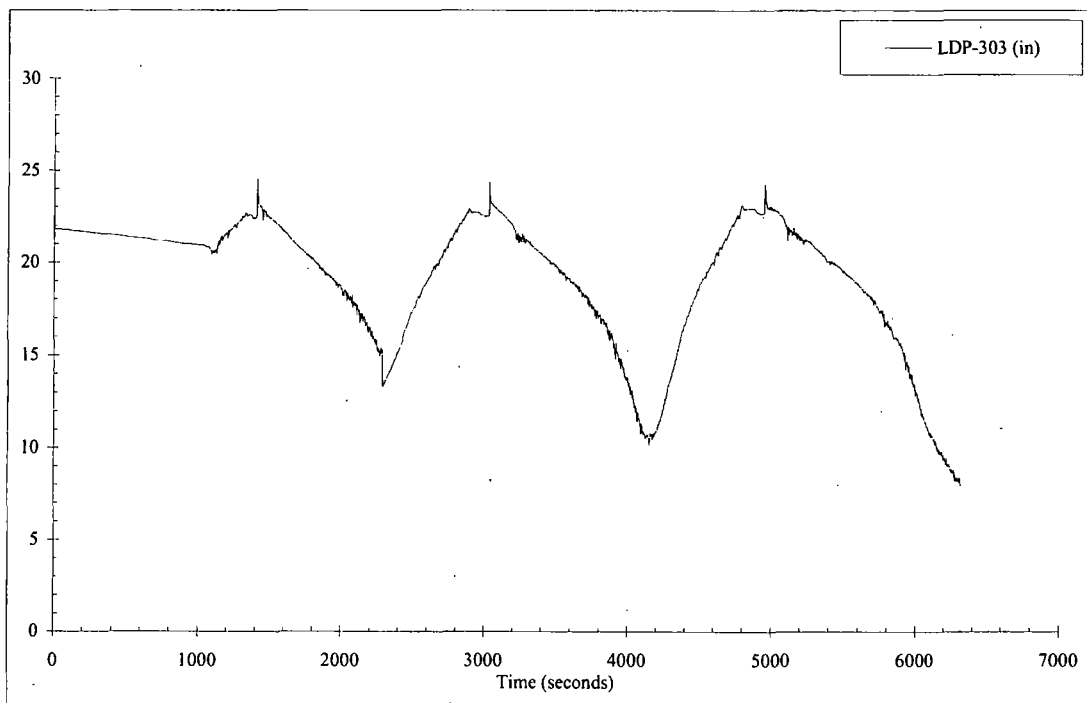
SG-1 Short Tube to CL Uncompensated Water Level



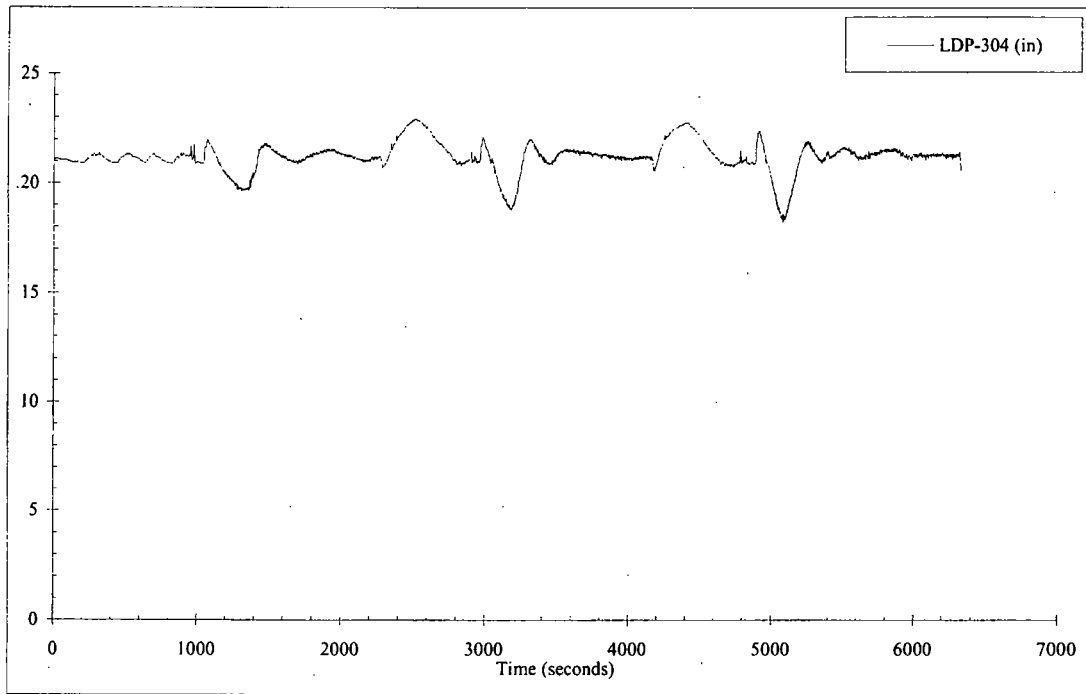
SG-1 WR Uncompensated Water Level



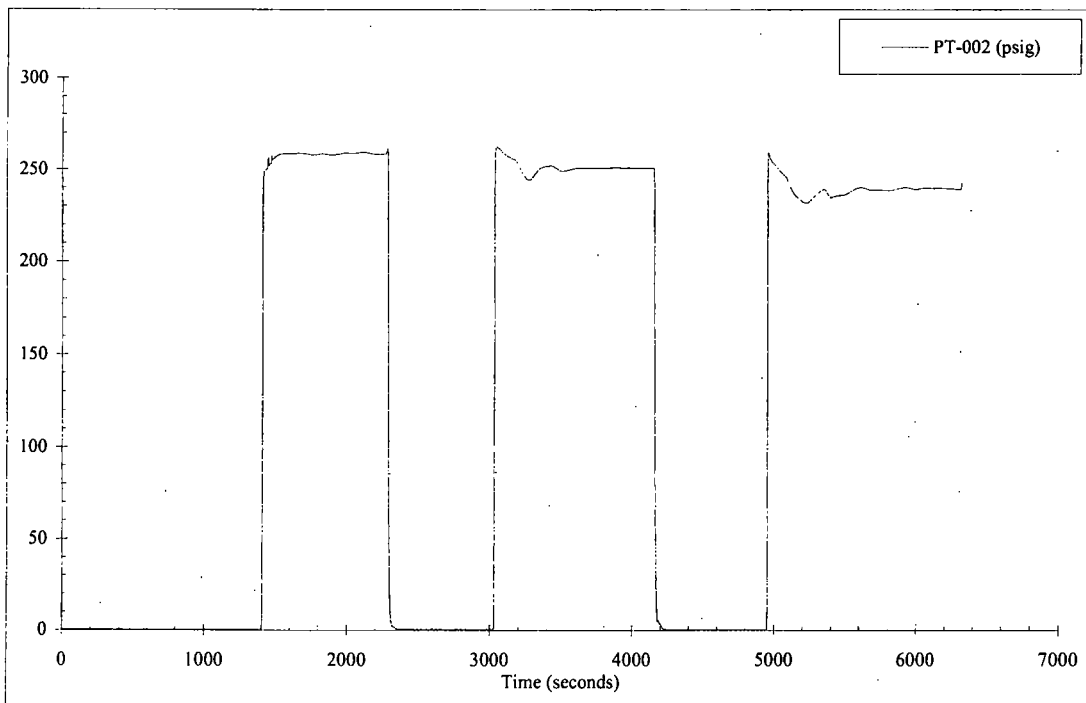
SG-2 WR Uncompensated Water Level



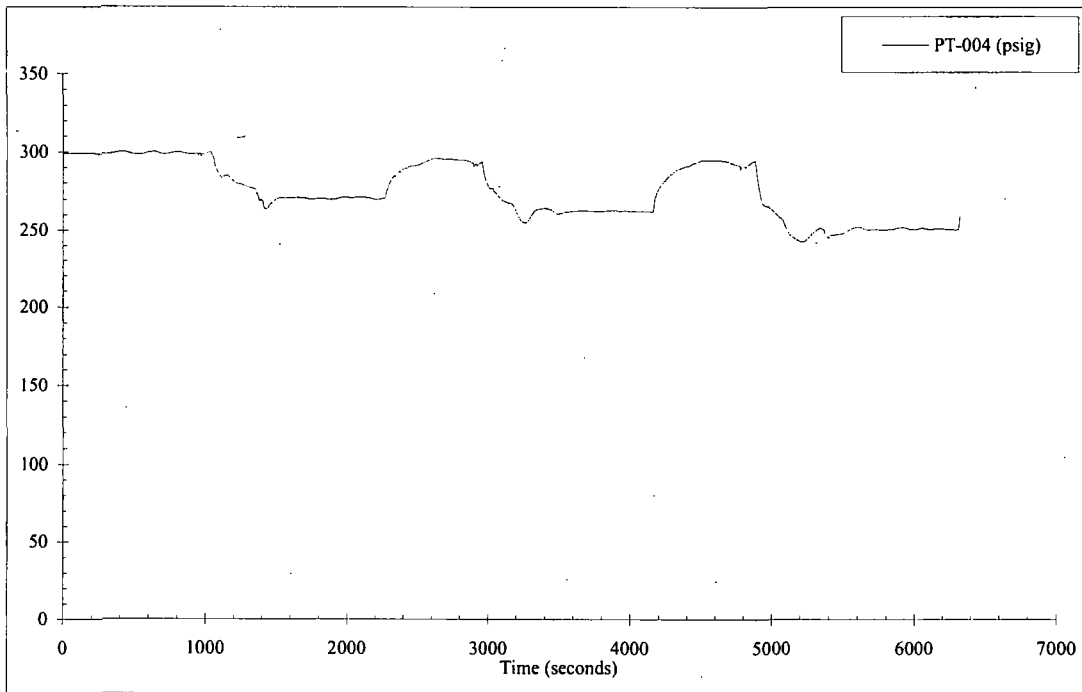
SG-1 NR Uncompensated Water Level



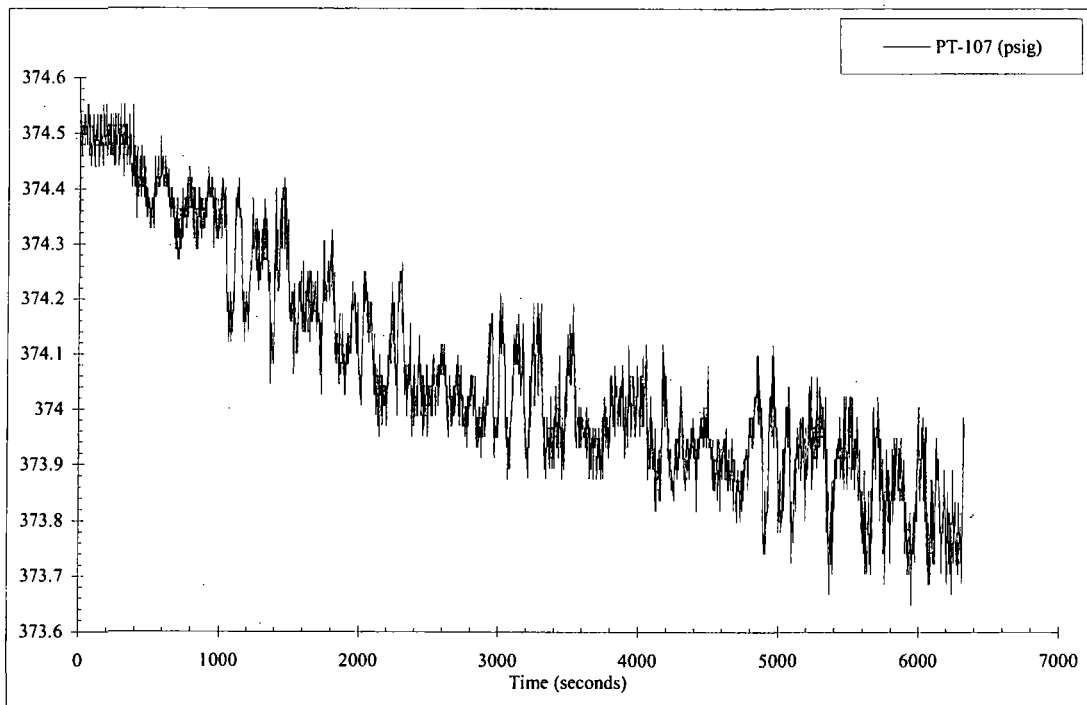
SG-2 NR Uncompensated Water Level



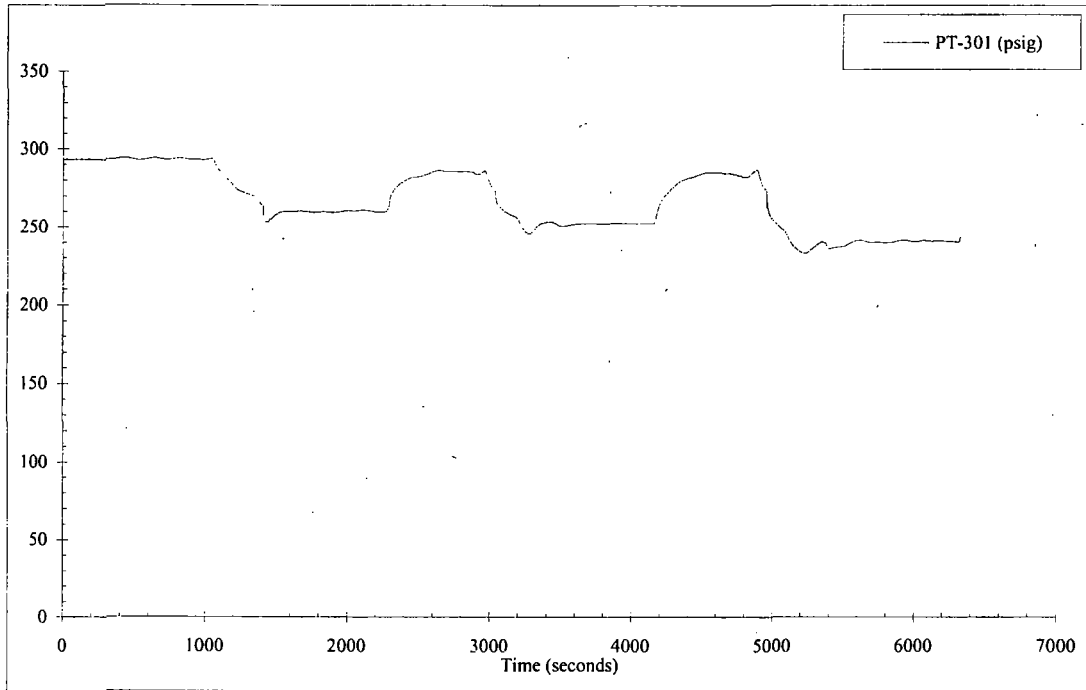
MS Header Pressure



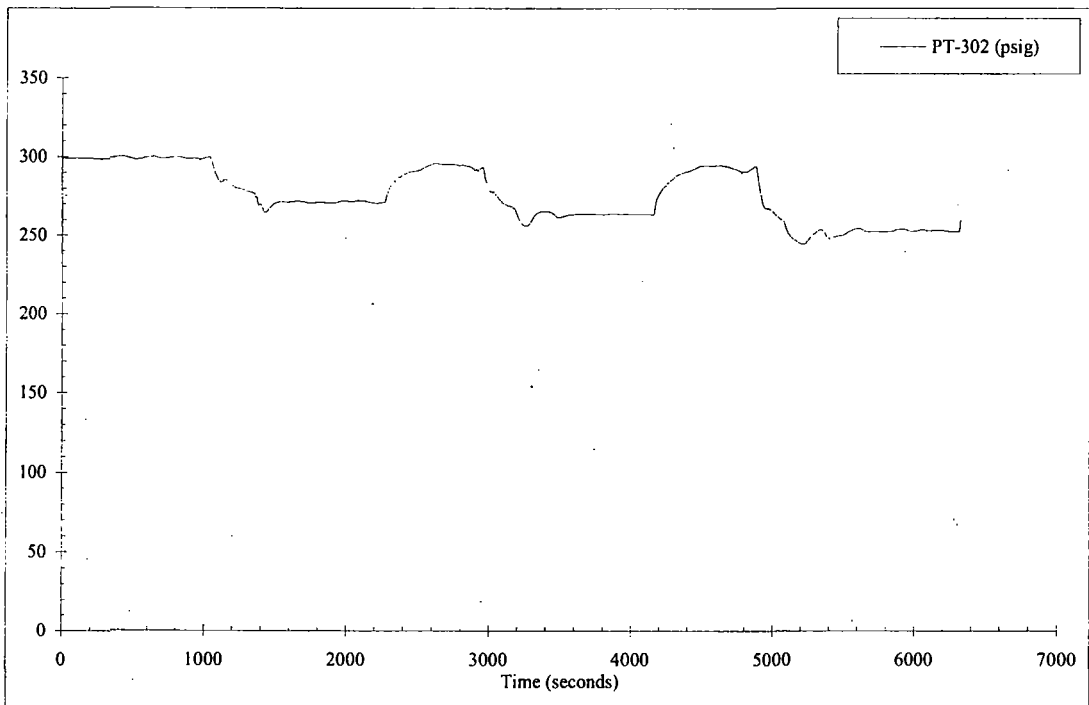
Temp Steam Pressure for FVM-002



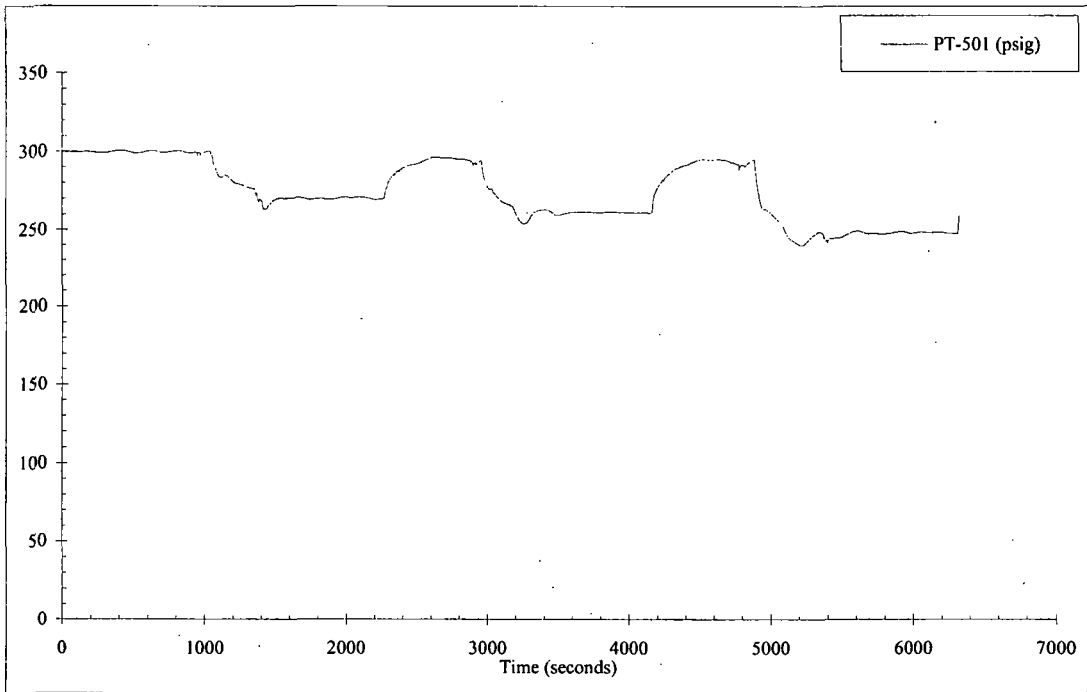
Rx Upper Head Pressure



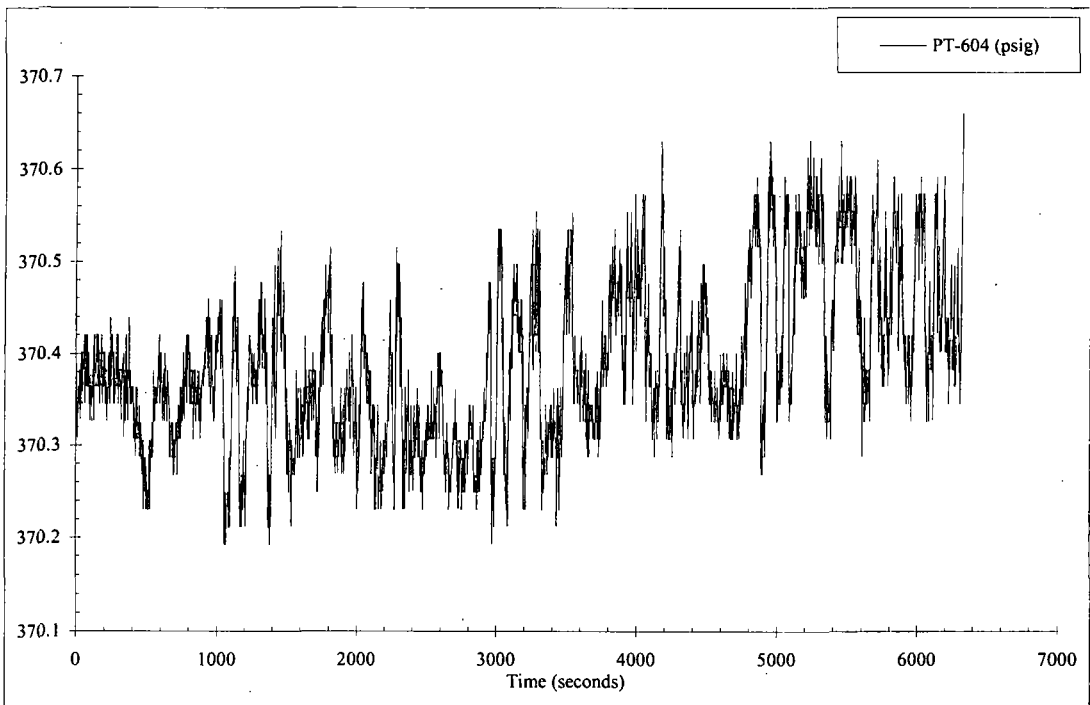
SG-1 Pressure



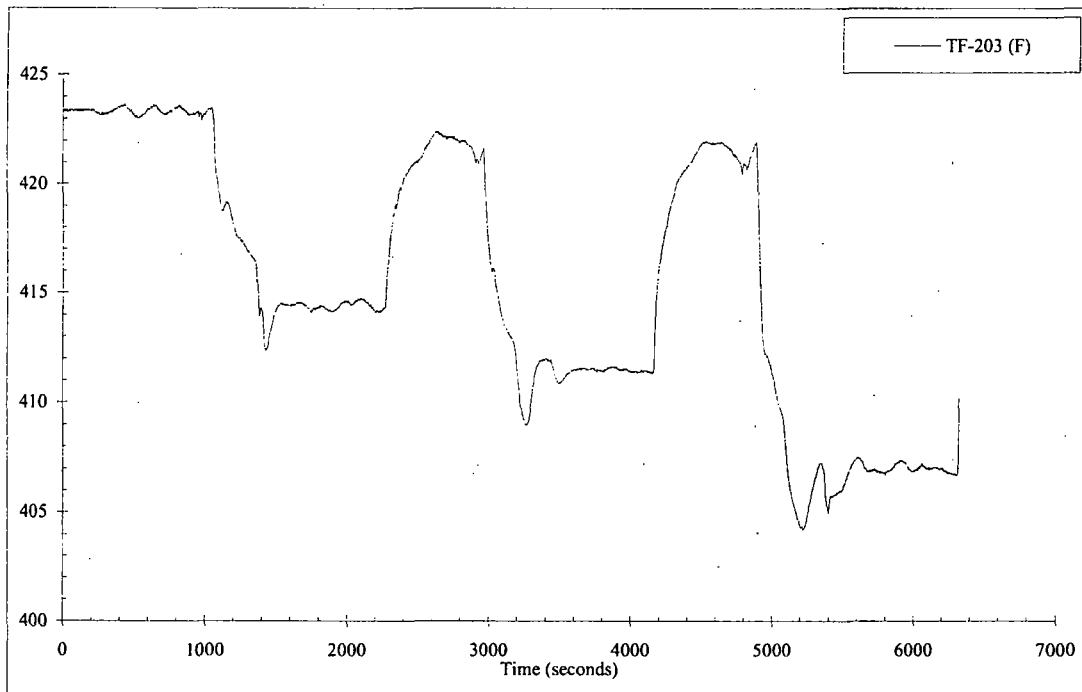
SG-2 Pressure



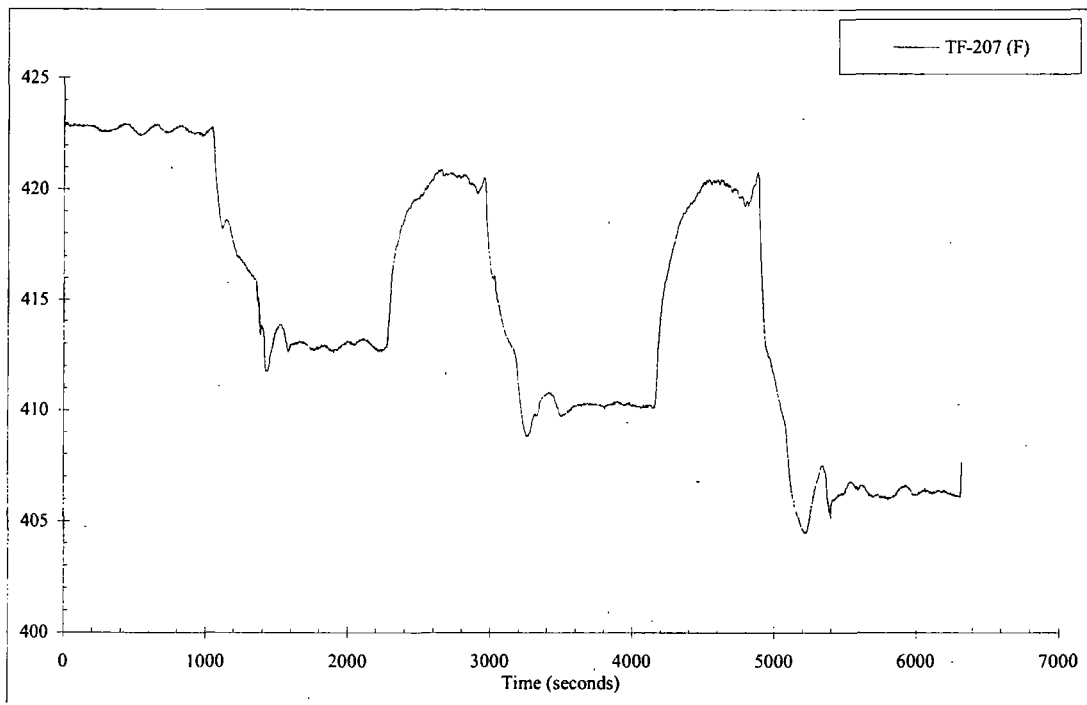
Separator Outlet Steam Pressure



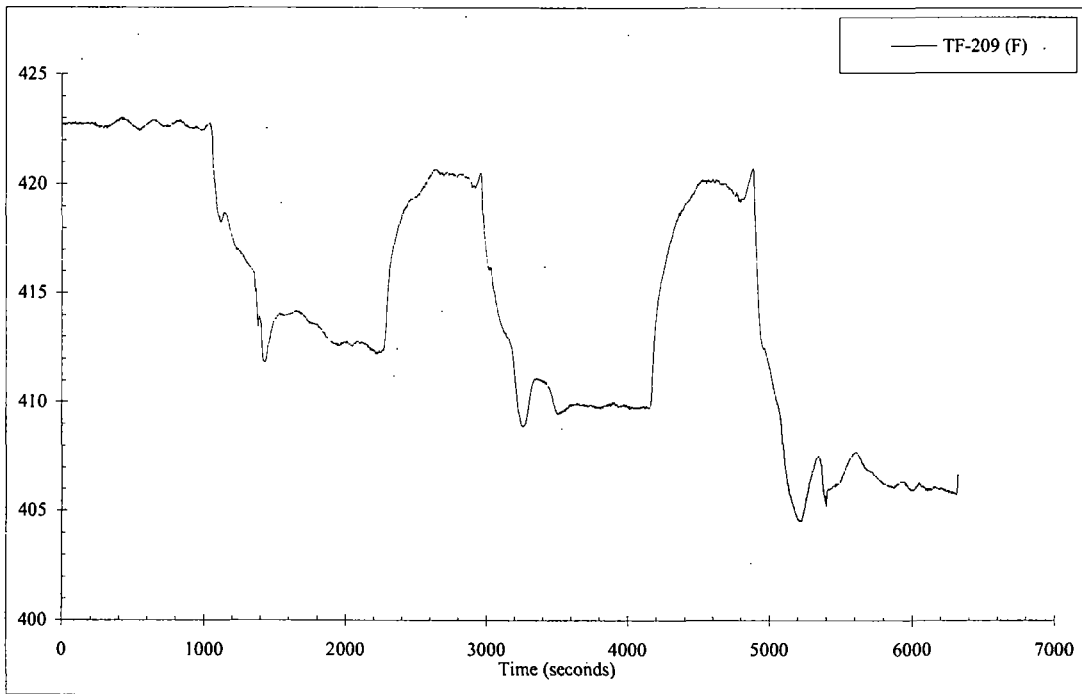
PZR WR Pressure



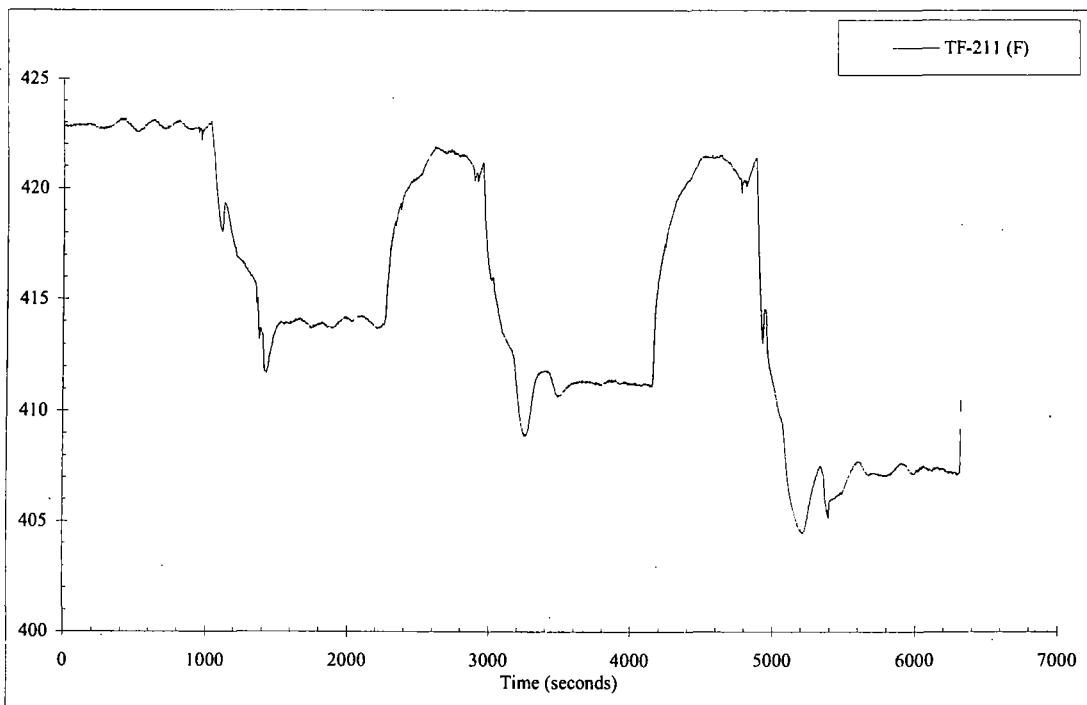
Separator Outlet Steam Temperature



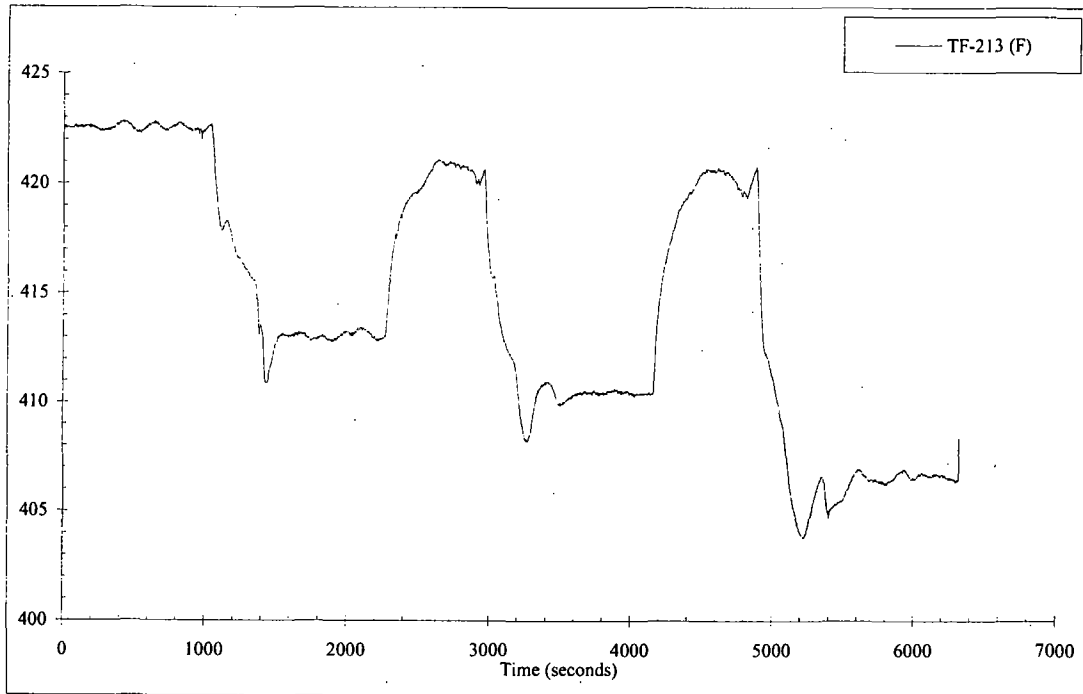
SG-1 Short Tube at Middle Outlet Side Temperature



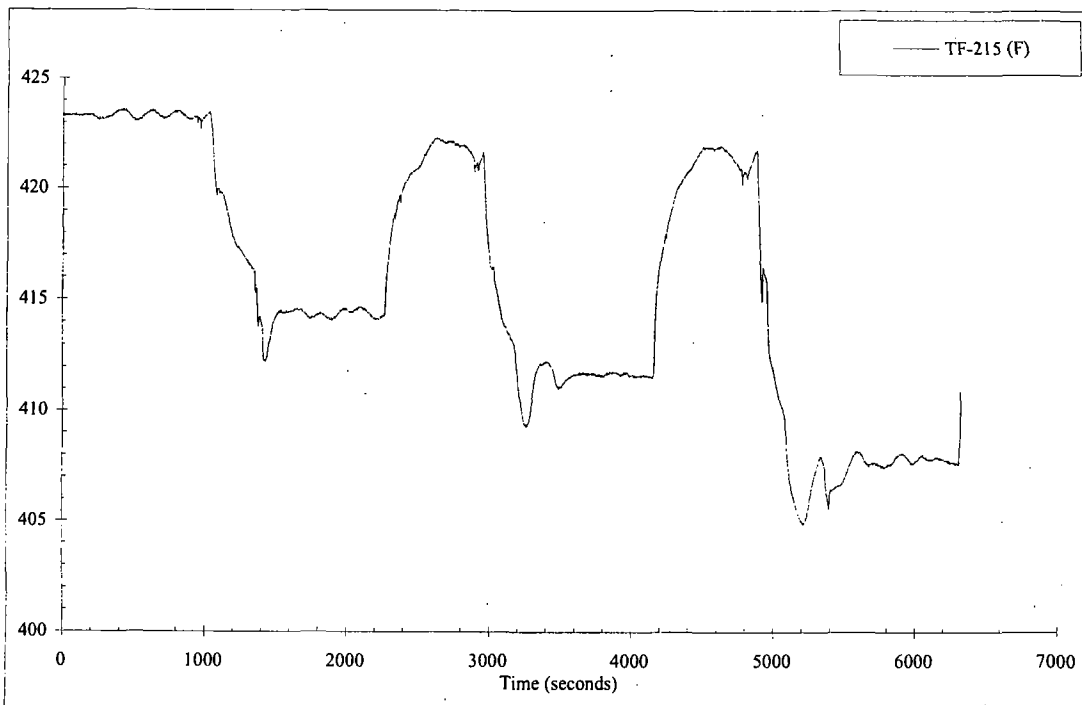
SG-1 Short Tube at Middle Inlet Side Temperature



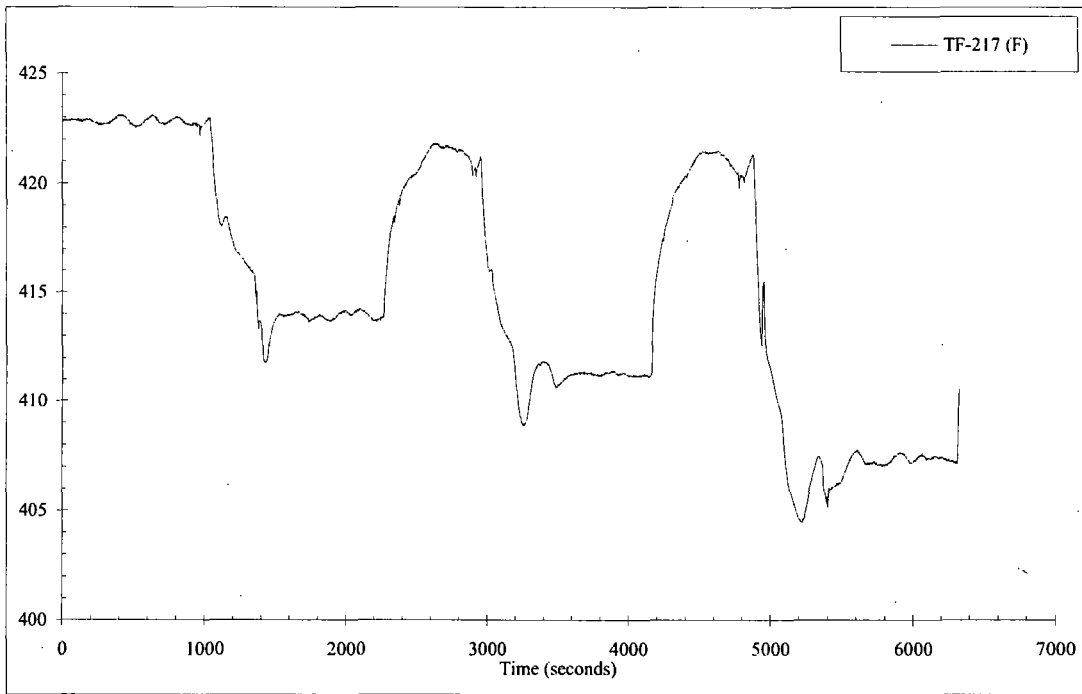
SG-1 Long Tube at Middle Outlet Temperature



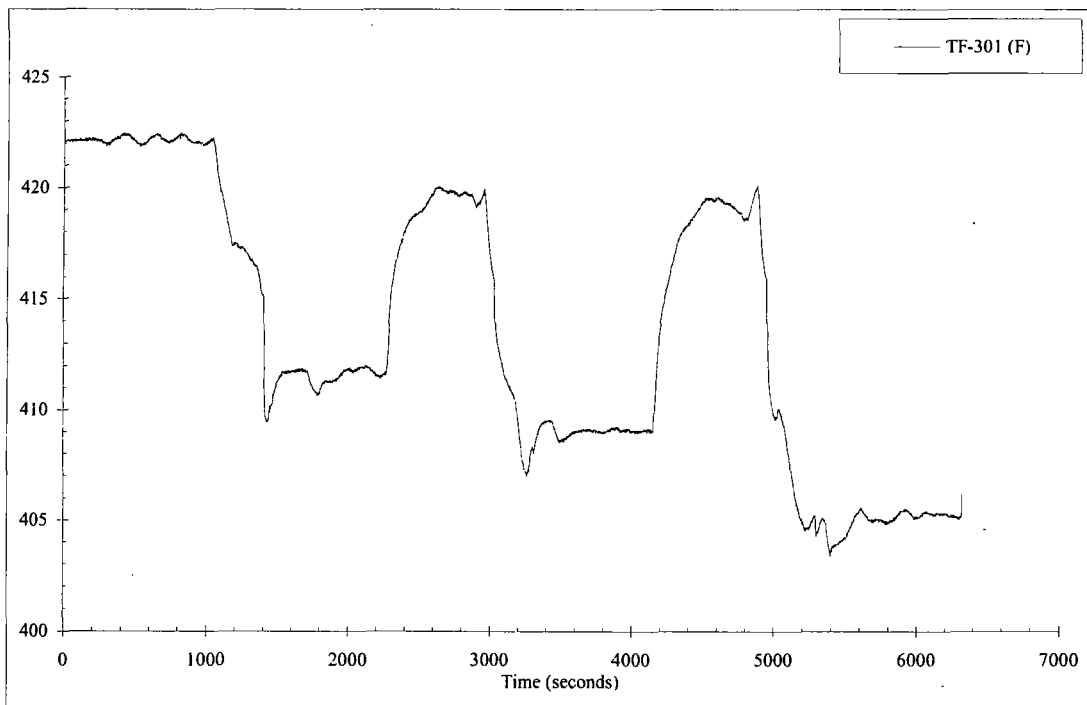
SG-1 Long Tube at Middle Inlet Temperature



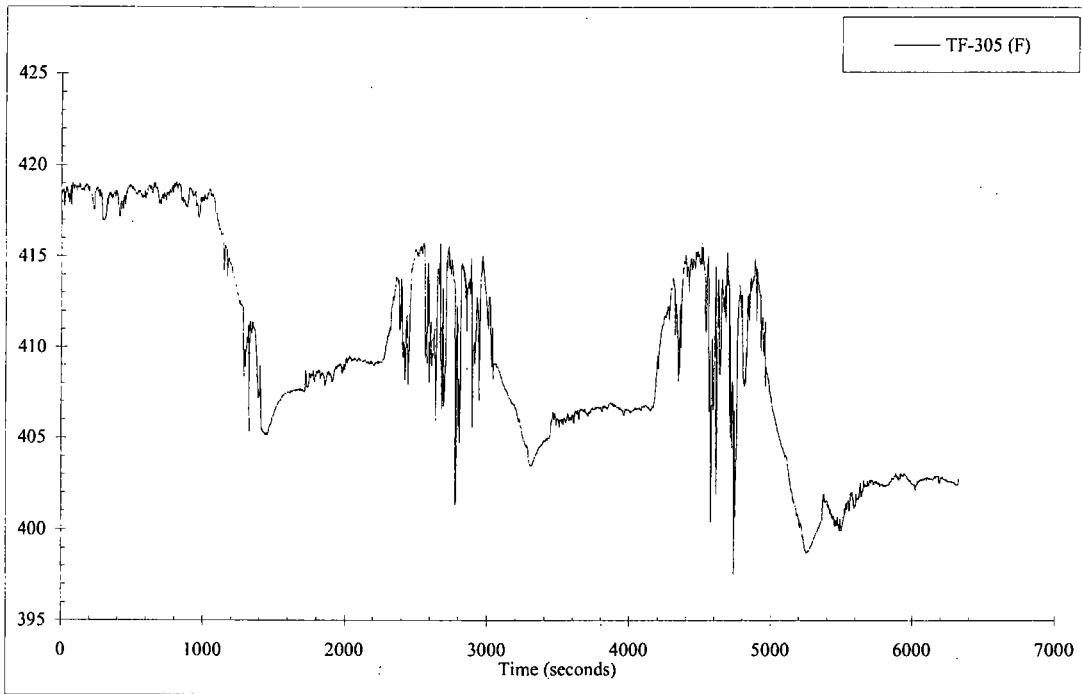
SG-1 Short Tube at Top Temperature



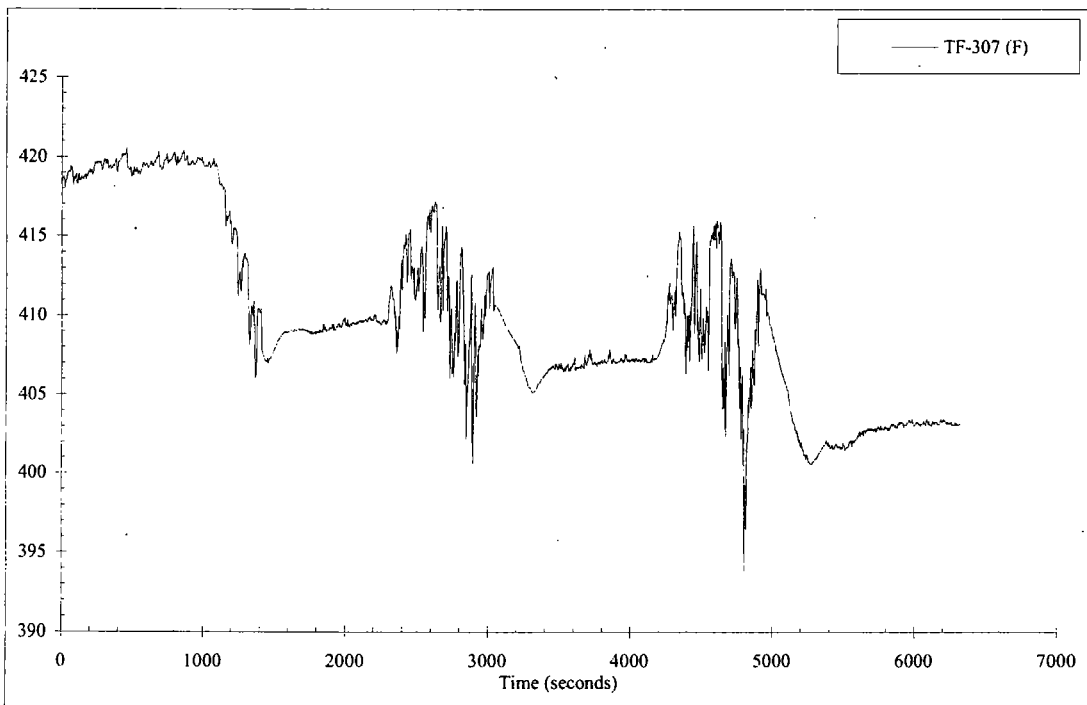
SG-1 Long Tube at Top Temperature



SG-1 Steam Temperature (SC-301)



SG-1 Downcomer HL Side Temperature



SG-1 Downcomer CL Side Temperature

Sequence of Events Summary

Date	Time	ΔT	Action	Event		
1/18/2007	1:23:03 PM	-119	TEST_SW	Facility Test Switch	Switches	In Test
1/18/2007	1:23:03 PM	-119	dMuteSCR_Alarm	SCR Signal loss audible alarm	Status	ON
1/18/2007	1:48:26 PM	1403	M001_HS_O	SG-1 Stm Stop HS	Switches	Open
1/18/2007	1:48:27 PM	1404	M001_STAT	SG-1 Steam Stop	Valves	Open
1/18/2007	1:49:13 PM	1450	MF_001	FST Fill Valve	Valves	Open
1/18/2007	1:54:56 PM	1793	MF_001	FST Fill Valve	Valves	Closed
1/18/2007	2:03:06 PM	2283	M001_HS_O	SG-1 Stm Stop HS	Switches	Close
1/18/2007	2:03:08 PM	2285	M001_STAT	SG-1 Steam Stop	Valves	Closed
1/18/2007	2:06:29 PM	2486	MF_001	FST Fill Valve	Valves	Open
1/18/2007	2:11:17 PM	2774	MF_001	FST Fill Valve	Valves	Closed
1/18/2007	2:15:33 PM	3030	M001_HS_O	SG-1 Stm Stop HS	Switches	Open
1/18/2007	2:15:35 PM	3032	M001_STAT	SG-1 Steam Stop	Valves	Open
1/18/2007	2:23:29 PM	3506	MF_001	FST Fill Valve	Valves	Open
1/18/2007	2:29:55 PM	3892	MF_001	FST Fill Valve	Valves	Closed
1/18/2007	2:34:16 PM	4153	M001_HS_O	SG-1 Stm Stop HS	Switches	Close
1/18/2007	2:34:18 PM	4155	M001_STAT	SG-1 Steam Stop	Valves	Closed
1/18/2007	2:40:16 PM	4513	MF_001	FST Fill Valve	Valves	Open
1/18/2007	2:45:25 PM	4822	MF_001	FST Fill Valve	Valves	Closed
1/18/2007	2:47:33 PM	4950	M001_HS_O	SG-1 Stm Stop HS	Switches	Open
1/18/2007	2:47:34 PM	4951	M001_STAT	SG-1 Steam Stop	Valves	Open
1/18/2007	2:54:48 PM	5385	MF_001	FST Fill Valve	Valves	Open
1/18/2007	3:03:09 PM	5886	MF_001	FST Fill Valve	Valves	Closed
1/18/2007	3:10:26 PM	6323	TEST_SW	Facility Test Switch	Switches	Normal

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
DP-111	DP across Upper Core Plate	4.9931	0.9963	30	-30	Differential Pressure (in h2o)
DP-114	DP across Upper Support Plate	4.9796	0.9934	375	-375	Differential Pressure (in h2o)
DP-121	DVI-1/CL-1 Differential Pressure	4.9563	0.989	25	-25	Differential Pressure (in h2o)
DP-122	DVI-2/CL-2 Differential Pressure	4.9591	0.9931	25	-25	Differential Pressure (in h2o)
DP-123	DVI-1/CL-3 Differential Pressure	4.9743	0.9957	25	-25	Differential Pressure (in h2o)
DP-124	DVI-2/CL-4 Differential Pressure	4.9561	0.9924	25	-25	Differential Pressure (in h2o)
DP-125	HL-1 entrance losses	4.97	0.9951	30	0	Differential Pressure (in h2o)
DP-126	HL-2 entrance losses	4.9707	0.9949	30	0	Differential Pressure (in h2o)
DP-128	DVI-1 entrance losses	4.9709	0.9959	25	-25	Differential Pressure (in h2o)
DP-129	DVI-2 entrance losses	4.9736	0.9958	25	-25	Differential Pressure (in h2o)
DP-130	Upper Head Differential Pressure	4.9622	0.9941	50	-50	Differential Pressure (in h2o)
DP-201	CL-1 Differential Pressure	4.9689	0.9939	25	-25	Differential Pressure (in h2o)
DP-202	RCP-2 Differential Pressure	4.9588	0.9916	200	0	Differential Pressure (in h2o)
DP-203	RCP-1 Differential Pressure	4.9692	0.9946	27	0	Differential Pressure (psid)
DP-204	CL-2 Differential Pressure	4.9814	0.9969	25	-25	Differential Pressure (in h2o)
DP-205	RCP-3 Differential Pressure	4.978	0.995	200	0	Differential Pressure (in h2o)
DP-206	RCP-4 Differential Pressure	4.984	0.9959	200	0	Differential Pressure (in h2o)
DP-207	CL-3 Differential Pressure	4.9817	0.9967	25	-25	Differential Pressure (in h2o)
DP-208	CL-4 Differential Pressure	4.9905	0.9984	25	-25	Differential Pressure (in h2o)
DP-209	HL-1 Differential Pressure	4.9858	0.998	25	-25	Differential Pressure (in h2o)
DP-210	HL-2 Differential Pressure	4.9649	0.9933	25	-25	Differential Pressure (in h2o)
DP-211	SG-1 Short Tube Entrance Losses	4.9849	0.9979	25	0	Differential Pressure (in h2o)
DP-212	SG-2 Long Tube Exit Losses	4.9838	0.9979	25	0	Differential Pressure (in h2o)
DP-213	SG-1 Long Tube Exit Losses	4.9788	0.9965	15	-15	Differential Pressure (in h2o)
DP-214	SG-2 Long Tube Entrance Losses	4.981	0.9973	15	0	Differential Pressure (in h2o)
DP-215	Break Differential Pressure	4.9807	0.9981	500	0	Differential Pressure (psid)
DP-216	Break Differential Pressure	4.9729	0.9964	500	0	Differential Pressure (psid)
DP-217	HL-1 to CL1 Differential Pressure at SG1	4.9835	0.9981	46.83	0	Differential Pressure (in h2o)
DP-218	HL-2 to CL2 Differential Pressure at SG2	4.9889	0.9992	150	0	Differential Pressure (in h2o)
DP-219	HL-1 to CL3 Differential Pressure at SG1	4.9686	0.9949	30.95	0	Differential Pressure (in h2o)
DP-220	HL-2 to CL4 Differential Pressure at SG2	4.9627	0.9936	150	0	Differential Pressure (in h2o)
DP-221	HL-1 to CL1 Differential Pressure at Rx	4.9677	0.9951	150	0	Differential Pressure (in h2o)
DP-222	HL-2 to CL2 Differential Pressure at Rx	4.983	0.9975	150	0	Differential Pressure (in h2o)
DP-223	HL-1 to CL3 Differential Pressure at Rx	4.9915	0.9987	150	0	Differential Pressure (in h2o)
DP-224	HL-2 to CL4 Differential Pressure at Rx	4.9665	0.9944	150	0	Differential Pressure (in h2o)
DP-401	ACC-1 Injection Differential Pressure	4.979	0.9975	400	0	Differential Pressure (in h2o)
DP-402	ACC-2 Injection Differential Pressure	4.9736	0.9958	400	0	Differential Pressure (in h2o)
DP-501	CMT-1 Injection Differential Pressure	4.9675	0.9948	150	-150	Differential Pressure (in h2o)

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DP-502	CMT-2 Injection Differential Pressure	4.9645	0.9947	150	-150	Differential Pressure (in h2o)
DP-503	CMT-1 Balance Line Differential Pressure	4.9858	0.998	150	-150	Differential Pressure (in h2o)
DP-504	CMT-2 Balance Line Differential Pressure	4.9955	1.0007	100	-100	Differential Pressure (in h2o)
DP-601	HL-1 to ADS4-1 Differential Pressure	4.9969	1.0008	10	0	Differential Pressure (psid)
DP-602	HL-2 to ADS4-2 Differential Pressure	4.967	0.9948	10	0	Differential Pressure (psid)
DP-603	ADS4-1 Venturi	4.9847	0.9985	100	0	Differential Pressure (in h2o)
DP-604	ADS4-2 Venturi	4.964	0.9941	100	0	Differential Pressure (in h2o)
DP-605	ADS4-1 Venturi outlet to Enlarger inlet	4.9881	0.9993	50	0	Differential Pressure (in h2o)
DP-606	ADS4-2 Venturi outlet to Enlarger inlet	4.9857	0.9991	50	0	Differential Pressure (in h2o)
DP-611	PZR Surge Line Differential Pressure	4.9773	0.9967	25	-25	Differential Pressure (in h2o)
DP-701	IRWST-1 Injection Differential Pressure	4.9872	0.9982	30	0	Differential Pressure (psid)
DP-702	IRWST-2 Injection Differential Pressure	4.9871	0.9981	30	0	Differential Pressure (psid)
DP-905	Break Separator Entrance Differential Pressure	4.9905	0.9994	100	0	Differential Pressure (psid)
FDP-604	ADS-2 Flow Differential Pressure	4.9738	0.9961	100	0	Differential Pressure (psid)
FDP-605	ADS-1 Flow Differential Pressure	4.9896	0.9993	250	0	Differential Pressure (psid)
FDP-606	ADS-3 Flow Differential Pressure	5.0051	1.0023	100	0	Differential Pressure (psid)
FMM-001	SG-1 Feed Flow	4.9838	0.9961	6	0	Volumetric Flow Rate (gpm)
FMM-002	SG-2 Feed Flow	4.9642	0.9925	6	0	Volumetric Flow Rate (gpm)
FMM-201	CL-1 Loop Flow	4.9607	0.9921	100	-100	Volumetric Flow Rate (gpm)
FMM-202	CL-2 Loop Flow	4.9754	0.9943	100	-100	Volumetric Flow Rate (gpm)
FMM-203	CL-3 Loop Flow	4.9853	0.9974	100	-100	Volumetric Flow Rate (gpm)
FMM-204	CL-4 Loop Flow	4.9729	0.9936	100	-100	Volumetric Flow Rate (gpm)
FMM-205	DVI-1 Flow	4.9706	0.996	75	0	Volumetric Flow Rate (gpm)
FMM-206	DVI-2 Flow	4.9767	0.9969	75	0	Volumetric Flow Rate (gpm)
FMM-401	ACC-1 Injection Flow	4.9516	0.9932	40	0	Volumetric Flow Rate (gpm)
FMM-402	ACC-2 Injection Flow	4.9772	0.9965	40	0	Volumetric Flow Rate (gpm)
FMM-501	CMT-1 Injection Flow	4.9959	1.0006	75	0	Volumetric Flow Rate (gpm)
FMM-502	CMT-2 CL Balance Line Flow	4.9742	0.9994	70	0	Volumetric Flow Rate (gpm)
FMM-503	CMT-1 CL Balance Line Flow	4.9717	0.9985	75	0	Volumetric Flow Rate (gpm)
FMM-504	CMT-2 Injection Flow	4.9523	0.9925	20	0	Volumetric Flow Rate (gpm)
FMM-601	ADS1-3 Loop Seal Flow	5.0168	1.004	200	0	Volumetric Flow Rate (gpm)
FMM-602	ADS4-2 Loop Seal Flow	5.0507	1.0117	60	0	Volumetric Flow Rate (gpm)
FMM-603	ADS4-1 Loop Seal Flow	5.0571	1.0129	60	0	Volumetric Flow Rate (gpm)
FMM-701	IRWST/DVI-1 Injection Flow	4.9738	0.9954	40	0	Volumetric Flow Rate (gpm)
FMM-702	IRWST/DVI-2 Injection Flow	4.9724	0.9955	40	0	Volumetric Flow Rate (gpm)
FMM-703	IRWST Overflow	4.9663	0.9966	10	0	Volumetric Flow Rate (gpm)
FMM-801	CVSP Discharge Flow	4.9876	0.9998	8	0	Volumetric Flow Rate (gpm)
FMM-802	PRHR Inlet Flow	4.9656	0.9966	40	0	Volumetric Flow Rate (gpm)
FMM-803	RNSP to DVI-2 Flow	4.9629	0.9942	30	0	Volumetric Flow Rate (gpm)
FMM-804	PRHR Outlet Flow	4.9612	0.9963	40	0	Volumetric Flow Rate (gpm)

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FMM-805	RNSP Discharge Flow	4.9711	0.9936	40	0	Volumetric Flow Rate (gpm)
FMM-901	Primary Sump-1 Recirculation Injection Flow	4.9673	0.9936	40	-40	Volumetric Flow Rate (gpm)
FMM-902	Primary Sump-2 Recirculation Injection Flow	4.9726	0.9948	40	-40	Volumetric Flow Rate (gpm)
FMM-905	Break Separator Loop Seal Flow	5.1224	1.0902	90	-90	Volumetric Flow Rate (gpm)
FVM-001	SG-1 Main Steam Flow	5.0223	1.005	100	0	Steam Flow Rate (cfm)
FVM-002	SG-2 Main Steam Flow	4.9878	0.9982	100	0	Steam Flow Rate (cfm)
FVM-003	Main Steam Total Flow	4.9815	0.9978	70	0	Steam Flow Rate (cfm)
FVM-009	SG-1 PORV Blowdown Steam Flow	4.9836	0.9967	381	0	Steam Flow Rate (cfm)
FVM-010	SG-2 PORV Blowdown Steam Flow	4.9817	0.9971	381	0	Steam Flow Rate (cfm)
FVM-601	ADS1-3 Separator Steam Flow	4.9995	1.0017	2000	0	Steam Flow Rate (cfm)
FVM-602	ADS4-2 Separator 6-inch Line Steam Flow	5.006	1.0018	2000	0	Steam Flow Rate (cfm)
FVM-603	ADS4-1 Separator 6-inch Line Steam Flow	5.0062	1.0024	1600	0	Steam Flow Rate (cfm)
FVM-604	ADS4-2 Separator 2-inch Line Steam Flow	5.0034	1.0026	348	0	Steam Flow Rate (cfm)
FVM-605	ADS4-1 Separator 2-inch Line Steam Flow	5.0037	1.0028	348	0	Steam Flow Rate (cfm)
FVM-901	BAMS HDR 6-inch Line Steam Flow	5.0021	1.0023	5000	0	Steam Flow Rate (cfm)
FVM-902	BAMS HDR 10-inch Line Steam Flow	5.01	1.0027	12500	0	Steam Flow Rate (cfm)
FVM-903	Primary Sump Steam Exhaust Flow	4.9879	0.9949	22	0	Steam Flow Rate (cfm)
FVM-904	Break Separator 3-inch Line Steam Flow	4.9986	0.9979	400	0	Steam Flow Rate (cfm)
FVM-905	Break Separator 6-inch Line Steam Flow	5.0036	1.004	6000	0	Steam Flow Rate (cfm)
FVM-906	Break Separator 8-inch Line Steam Flow	5.0048	1.0025	4000	0	Steam Flow Rate (cfm)
HPS-201-1	CL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-201-2	CL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-201-3	CL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-202-1	CL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-202-2	CL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-202-3	CL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-203-1	CL-3 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-203-2	CL-3 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-203-3	CL-3 Fluid temperature	10	0	10	0	Voltage (V)
HPS-204-1	CL-4 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-204-2	CL-4 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-204-3	CL-4 Fluid temperature	10	0	10	0	Voltage (V)
HPS-205-1	HL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-205-2	HL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-205-3	HL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-206-1	HL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-206-2	HL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-206-3	HL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-509-1	CMT-1 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-509-2	CMT-1 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)

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HPS-509-3	CMT-1 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-512-1	CMT-2 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-512-2	CMT-2 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-512-3	CMT-2 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-604-1	Lower PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-604-2	Lower PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-604-3	Lower PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-606-1	ADS1-3 Common Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-606-2	ADS1-3 Common Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-606-3	ADS1-3 Common Inlet Fluid temperature	10	0	10	0	Voltage (V)
HPS-607-1	Upper PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-607-2	Upper PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-607-3	Upper PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-801-1	PRHR HX Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-801-2	PRHR HX Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-801-3	PRHR HX Inlet Fluid temperature	10	0	10	0	Voltage (V)
KW-101	Rx Heater Group 1 Power	4.3222	1.1171	472	0	Power (kW)
KW-102	Rx Heater Group 2 Power	4.1621	1.0045	486	0	Power (kW)
KW-103	Rx Heater Group 1 Power	4.8931	0.9786	496	0	Power (kW)
KW-104	Rx Heater Group 2 Power	4.912	0.9946	492	0	Power (kW)
KW-601	PZR Heater Power	4.9435	0.982	24.3	0	Power (kW)
LCT-701	IRWST Weight	4.9831	0.9976	40000	0	Mass (lbm)
LCT-901	Primary Sump Weight	4.977	0.9969	28800	0	Mass (lbm)
LCT-902	Secondary Sump Weight	4.9845	0.9983	16700	0	Mass (lbm)
LDP-001	FST Uncompensated Water Level	5.0056	1.0017	91.88	0	Water Level (in)
LDP-101	CL to Bypass Holes Uncompensated Water Level (270)	4.9645	0.9945	5.561	0	Water Level (in)
LDP-102	CL to Bypass Holes Uncompensated Water Level (180)	4.9725	0.9963	5.938	0	Water Level (in)
LDP-103	DVI to CL Uncompensated Water Level (270)	4.9807	0.9982	11.692	0	Water Level (in)
LDP-104	DVI to CL Uncompensated Water Level (180)	4.9748	0.9992	12.376	0	Water Level (in)
LDP-105	Upper Core Plate to DVI Uncompensated Water Level (270)	5.0076	1.0058	11.929	0	Water Level (in)
LDP-106	Bottom of Core to Lower Core Plate Uncompensated Water Level (180)	4.9732	0.9985	8.198	0	Water Level (in)
LDP-107	Bottom of Core to Lower Core Plate Uncompensated Water Level (270)	4.9713	0.9958	8.223	0	Water Level (in)
LDP-108	Bottom of Core to Lower Core Plate Uncompensated Water Level (0)	4.9683	0.9953	8.562	0	Water Level (in)
LDP-109	Lower Core Plate to Mid-Core Spacer Grid Uncompensated Water Level (0)	4.984	0.9988	19.763	0	Water Level (in)
LDP-110	Mid-Core Spacer Grid to Upper-Core Spacer Grid Uncompensated Water Level (0)	4.9909	0.9991	20.02	0	Water Level (in)
LDP-112	Upper Core Plate to DVI Uncompensated Water Level (0)	4.9755	0.9963	4.696	0	Water Level (in)
LDP-113	DVI to Bottom of Upper Support Plate Uncompensated Water Level (0)	4.9849	0.9986	15.614	0	Water Level (in)
LDP-115	Upper Support Plate to Top of Rx Uncompensated Water Level (0)	4.9896	0.9996	24.28	0	Water Level (in)
LDP-116	Bottom of Rx to Bottom of Bypass Holes Uncompensated Water Level (270)	4.9638	0.9949	77.59	0	Water Level (in)
LDP-117	Upper Core Spacer Grid to DVI Uncompensated Water Level (180)	4.9838	0.9983	11.383	0	Water Level (in)

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LDP-118	Lower Core Plate to Upper Core Plate Uncompensated Water Level (270)	4.9848	0.9988	39.98	0	Water Level (in)
LDP-119	Lower Core Plate to Upper Core Support Grid Uncompensated Water Level (180)	4.988	0.9996	40.26	0	Water Level (in)
LDP-127	Rx Wide Range Uncompensated Water Level	4.999	1.0007	98.97	0	Water Level (in)
LDP-138	Upper Core Spacer Grid to Bottom of Upper Support Plate Uncompensated Water Le	4.9639	0.9946	39.3	0	Water Level (in)
LDP-139	Top of Lower Core Plate to Upper Core Spacer Grid Uncompensated Water Level	4.9837	0.9982	24.166	0	Water Level (in)
LDP-140	Bottom of Rx to Bottom of Flow Holes (180) Uncompensated Water Level	4.9981	1.0014	78.02	0	Water Level (in)
LDP-141	Upper Core Plate to Lower Support Plate Uncompensated Water Level	4.9843	0.9994	20.135	0	Water Level (in)
LDP-201	CL-1 Uncompensated Water Level	4.9961	1.0002	2.496	0	Water Level (in)
LDP-202	CL-2 Uncompensated Water Level	4.9924	0.9994	2.223	0	Water Level (in)
LDP-203	CL-3 Uncompensated Water Level	4.9923	0.9994	2.532	0	Water Level (in)
LDP-204	CL-4 Uncompensated Water Level	4.9594	0.9927	2.47	0	Water Level (in)
LDP-205	HL-1 Uncompensated Water Level	4.9663	0.9945	4.415	0	Water Level (in)
LDP-206	HL-2 Uncompensated Water Level	4.9653	0.9944	4.013	0	Water Level (in)
LDP-207	SG-1 to HL-1 Elbow Plenum Uncompensated Water Level	4.9779	0.9972	18.3	0	Water Level (in)
LDP-208	SG-2 to HL-2 Elbow Plenum Uncompensated Water Level	4.9825	0.9969	19.247	0	Water Level (in)
LDP-209	SG-1 to HL-1 Plenum Uncompensated Water Level	4.9954	1.0002	10.939	0	Water Level (in)
LDP-210	SG-2 to CL-4 Plenum Uncompensated Water Level	4.9677	0.9943	16.988	0	Water Level (in)
LDP-211	SG-1 to CL-3 Plenum Uncompensated Water Level	4.9613	0.993	16.793	0	Water Level (in)
LDP-212	SG-2 to CL-2 Plenum Uncompensated Water Level	4.9836	0.9982	16.772	0	Water Level (in)
LDP-213	SG-1 to CL-1 Plenum Uncompensated Water Level	4.9864	0.9978	16.747	0	Water Level (in)
LDP-214	SG-2 to HL-2 Plenum Uncompensated Water Level	4.9953	1.0002	11.571	0	Water Level (in)
LDP-215	SG-1 Long Tube to HL Uncompensated Water Level	4.99	0.9992	102.06	0	Water Level (in)
LDP-216	SG-2 Short Tube to HL Uncompensated Water Level	4.9717	0.9955	95.55	0	Water Level (in)
LDP-217	SG-1 Short Tube to HL Uncompensated Water Level	4.9618	0.9932	96.25	0	Water Level (in)
LDP-218	SG-2 Long Tube to HL Uncompensated Water Level	4.9658	0.9943	103.14	0	Water Level (in)
LDP-219	SG-1 Long Tube to CL Uncompensated Water Level	4.9867	0.9992	102.45	0	Water Level (in)
LDP-220	SG-2 Short Tube to CL Uncompensated Water Level	4.9786	0.9971	96	0	Water Level (in)
LDP-221	SG-1 Short Tube to CL Uncompensated Water Level	4.985	0.9986	95.98	0	Water Level (in)
LDP-222	SG-2 Long Tube to CL Uncompensated Water Level	4.9628	0.9947	102.71	0	Water Level (in)
LDP-301	SG-1 WR Uncompensated Water Level	5.0022	1.0006	119.25	0	Water Level (in)
LDP-302	SG-2 WR Uncompensated Water Level	4.9995	1.0003	119.02	0	Water Level (in)
LDP-303	SG-1 NR Uncompensated Water Level	4.9699	0.9934	31.81	0	Water Level (in)
LDP-304	SG-2 NR Uncompensated Water Level	4.9748	0.995	31.52	0	Water Level (in)
LDP-401	ACC-1 Uncompensated Water Level	4.987	0.9951	38.26	0	Water Level (in)
LDP-402	ACC-2 Uncompensated Water Level	5.166	1.0332	38.34	0	Water Level (in)
LDP-501	CMT-1 NR Uncompensated Water Level (Bottom)	4.9834	0.9986	5.31	0	Water Level (in)
LDP-502	CMT-2 WR Uncompensated Water Level	5.1958	1.0396	57.5	0	Water Level (in)
LDP-503	CMT-1 NR Uncompensated Water Level (Middle)	4.984	0.9979	46.77	0	Water Level (in)
LDP-504	CMT-2 NR Uncompensated Water Level (Bottom)	4.9793	0.9972	5.226	0	Water Level (in)
LDP-505	CMT-1 NR Uncompensated Water Level (Top)	4.994	1	5.486	0	Water Level (in)

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LDP-506	CMT-2 NR Uncompensated Water Level (Middle)	4.9823	0.9975	46.96	0	Water Level (in)
LDP-507	CMT-1 WR Uncompensated Water Level	5.1887	1.0383	57.5	0	Water Level (in)
LDP-508	CMT-2 NR Uncompensated Water Level (Top)	4.9913	0.9994	5.309	0	Water Level (in)
LDP-509	CL-3 to CMT-1 Balance Line Uncompensated Water Level	4.9772	0.9968	78.84	0	Water Level (in)
LDP-510	CL-1 to CMT-2 Balance Line Uncompensated Water Level	4.9653	0.9942	78.28	0	Water Level (in)
LDP-601	PZR WR Uncompensated Water Level	5.0006	0.9991	140.47	0	Water Level (in)
LDP-602	PZR Surge Line Uncompensated Water Level	4.9777	0.997	47.5	0	Water Level (in)
LDP-605	PZR Upper Surge Line Pipe Uncompensated Water Level	4.9735	0.9963	3.533	0	Water Level (in)
LDP-606	PZR Surge Line Pipe Level at PZR Inlet Uncompensated Water Level	4.9724	0.9958	18.696	0	Water Level (in)
LDP-607	PZR Middle Surge Line Pipe Uncompensated Water Level	4.9737	0.996	4.127	0	Water Level (in)
LDP-608	PZR Lower Surge Line Pipe Uncompensated Water Level	4.9731	0.9964	3.82	0	Water Level (in)
LDP-609	PZR Surge Line Pipe Uncompensated Water Level at HL-2	4.996	1.0011	14.717	0	Water Level (in)
LDP-610	ADS1-3 Separator Uncompensated Water Level	5.193	1.0399	45.24	0	Water Level (in)
LDP-611	ADS4-1 Separator Uncompensated Water Level	5.1628	1.0342	55.97	0	Water Level (in)
LDP-612	ADS4-2 Separator Uncompensated Water Level	5.1859	1.0386	56.6	0	Water Level (in)
LDP-701	IRWST Uncompensated Water Level	5.0202	1.0048	115.8	0	Water Level (in)
LDP-801	PRHR HX Inlet Head Uncompensated Water Level	4.9945	1.0013	6.971	0	Water Level (in)
LDP-802	PRHR HX WR Uncompensated Water Level	4.9871	0.9998	57.08	0	Water Level (in)
LDP-901	Primary Sump Uncompensated Water Level	5.0016	1.0015	104.36	0	Water Level (in)
LDP-902	Secondary Sump Uncompensated Water Level	5.0018	1.0007	102.56	0	Water Level (in)
LDP-903	CRT Uncompensated Water Level	5.1669	1.0346	32.358	0	Water Level (in)
LDP-905	Break Separator Uncompensated Water Level	5.1788	1.0378	130.68	0	Water Level (in)
LT-120	Rx Vessel Capacitance Probe Water Level	5.0053	1.0042	99	50	Water Level (in)
PT-001	MFP Discharge Pressure	5.0658	1.0121	600	0	Pressure (psig)
PT-002	MS Header Pressure	4.9759	0.9962	500	0	Pressure (psig)
PT-003	Lab Barometer	4.9656	0.9944	20	10	Pressure (psia)
PT-009	SG-1 PORV Blowdown Pressure	4.9816	0.9983	300	0	Pressure (psig)
PT-010	SG-2 PORV Blowdown Pressure	4.9924	1.0004	300	0	Pressure (psig)
PT-101	CL-1 Pressure at Rx Flange	4.9877	0.9986	500	0	Pressure (psig)
PT-102	CL-2 Pressure at Rx Flange	4.9706	0.9958	10	0	Pressure (psig)
PT-103	CL-3 Pressure at Rx Flange	4.9646	0.9946	10	0	Pressure (psig)
PT-104	CL-4 Pressure at Rx Flange	4.9882	0.9988	500	0	Pressure (psig)
PT-107	Rx Upper Head Pressure	5.0478	1.0096	500	0	Pressure (psig)
PT-108	Bottom of Rx Pressure	4.9637	0.9938	500	0	Pressure (psig)
PT-109	DVI-1 Pressure at Rx Flange	4.9874	0.998	500	0	Pressure (psig)
PT-110	DVI-2 Pressure at Rx Flange	4.9825	0.9984	10	0	Pressure (psig)
PT-111	Rx Annular Pressure at Flow Bypass Holes	4.9886	0.9982	500	0	Pressure (psig)
PT-112	Rx Annular Pressure at Bottom of Rx	4.977	0.9958	10	0	Pressure (psig)
PT-113	Rx Pressure Below Mid-Core Spacer Grid	4.9616	0.9921	500	0	Pressure (psig)
PT-201	SG-1 Long Tube Pressure (Top)	4.9935	1.0008	500	0	Pressure (psig)

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PT-202	HL-2 Pressure at SG-2 Flange	4.9841	0.9978	500	0	Pressure (psig)
PT-203	CL Break Pressure at Break Valve	4.988	0.9982	500	0	Pressure (psig)
PT-204	SG-2 Long Tube Pressure (Top)	4.9974	1.0005	500	0	Pressure (psig)
PT-205	HL-1 Pressure at SG-1 Flange	4.9838	0.9988	400	0	Pressure (psig)
PT-206	HL Break Pressure at Break Valve	4.9869	0.9982	500	0	Pressure (psig)
PT-301	SG-1 Pressure	5.0617	1.0123	500	0	Pressure (psig)
PT-302	SG-2 Pressure	5.1023	1.0219	500	0	Pressure (psig)
PT-401	ACC-1 Pressure	4.9908	0.9993	300	0	Pressure (psig)
PT-402	ACC-2 Pressure	4.9802	0.9975	300	0	Pressure (psig)
PT-501	CMT-1 Pressure	4.982	0.9979	300	0	Pressure (psig)
PT-502	CMT-2 Pressure	4.9869	0.998	500	0	Pressure (psig)
PT-602	PZR NR Pressure	4.9747	0.9988	400	300	Pressure (psig)
PT-603	PZR NR Pressure	4.9616	0.9944	10	0	Pressure (psig)
PT-604	PZR WR Pressure	4.9794	0.9942	500	0	Pressure (psig)
PT-605	ADS1-3 Separator Pressure	4.9725	0.9966	100	0	Pressure (psig)
PT-606	IRWST Sparger Line Pressure	4.9653	0.995	100	0	Pressure (psig)
PT-610	ADS4-2 Separator Pressure	4.9845	0.9983	10	0	Pressure (psig)
PT-611	ADS4-1 Separator Pressure	4.9806	0.9977	10	0	Pressure (psig)
PT-701	IRWST Pressure	5.0436	1.0087	15	0	Pressure (psig)
PT-801	CVSP Discharge Pressure	4.9909	0.9993	500	0	Pressure (psig)
PT-802	RNSP Discharge Pressure	4.9768	0.9962	250	0	Pressure (psig)
PT-901	Primary Sump Pressure	4.9659	0.9947	10	0	Pressure (psig)
PT-902	BAMS Header Pressure	4.9988	1.0013	16	0	Pressure (psig)
PT-905	Break Separator Pressure	5.0265	1.0067	20	0	Pressure (psig)
TF-005	Lab Ambient Temperature at Ground Level	1000	0	1000	0	Fluid Temperature (F)
TF-006	Lab Ambient Temperature at Second Level	1000	0	1000	0	Fluid Temperature (F)
TF-007	Lab Ambient Temperature at Third Level	1000	0	1000	0	Fluid Temperature (F)
TF-009	SG-1 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-010	SG-2 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-101	CL-3 Temperature (SC-101)	450	40	450	40	Fluid Temperature (F)
TF-101-1.3D-2	CL-1 Downcomer Temperature at 1.3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-1	CL-1 Downcomer Temperature at 2D, 120 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-2	CL-1 Downcomer Temperature at 2D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-3	CL-1 Downcomer Temperature at 2D, 150 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-1	CL-1 Downcomer Temperature at 3D, 104 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-2	CL-1 Downcomer Temperature at 3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-3	CL-1 Downcomer Temperature at 3D, 166 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-1	CL-1 Downcomer Temperature at 4D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-2	CL-1 Downcomer Temperature at 4D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-1	CL-1 Downcomer Temperature at 8D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)

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TF-101-8D-2	CL-1 Downcomer Temperature at 8D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102	CL-4 Temperature (SC-102)	450	40	450	40	Fluid Temperature (F)
TF-102-1.3D-2	CL-2 Downcomer Temperature at 1.3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-1	CL-2 Downcomer Temperature at 2D, 210 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-2	CL-2 Downcomer Temperature at 2D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-3	CL-2 Downcomer Temperature at 2D, 240 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-1	CL-2 Downcomer Temperature at 3D, 194 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-2	CL-2 Downcomer Temperature at 3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-3	CL-2 Downcomer Temperature at 3D, 256 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-4D-2	CL-2 Downcomer Temperature at 4D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-1	CL-2 Downcomer Temperature at 8D, 180 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-2	CL-2 Downcomer Temperature at 8D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-1.3D-2	CL-3 Downcomer Temperature at 1.3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-1	CL-3 Downcomer Temperature at 2D, 30 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-2	CL-3 Downcomer Temperature at 2D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-3	CL-3 Downcomer Temperature at 2D, 60 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-1	CL-3 Downcomer Temperature at 3D, 14 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-2	CL-3 Downcomer Temperature at 3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-3	CL-3 Downcomer Temperature at 3D, 76 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-4D-2	CL-3 Downcomer Temperature at 4D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-1	CL-3 Downcomer Temperature at 8D, 0 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-2	CL-3 Downcomer Temperature at 8D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-1.3D-2	CL-4 Downcomer Temperature at 1.3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-1	CL-4 Downcomer Temperature at 2D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-2	CL-4 Downcomer Temperature at 2D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-3	CL-4 Downcomer Temperature at 2D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1	CL-4 Downcomer Temperature at 3D, 284 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1.5	CL-4 Downcomer Temperature at 3D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2	CL-4 Downcomer Temperature at 3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2.5	CL-4 Downcomer Temperature at 3D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-3	CL-4 Downcomer Temperature at 3D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1	CL-4 Downcomer Temperature at 4D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.3	CL-4 Downcomer Temperature at 4D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.6	CL-4 Downcomer Temperature at 4D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2	CL-4 Downcomer Temperature at 4D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.3	CL-4 Downcomer Temperature at 4D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.6	CL-4 Downcomer Temperature at 4D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1	CL-4 Downcomer Temperature at 8D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.3	CL-4 Downcomer Temperature at 8D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.6	CL-4 Downcomer Temperature at 8D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)

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TF-104-8D-2	CL-4 Downcomer Temperature at 8D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.3	CL-4 Downcomer Temperature at 8D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.6	CL-4 Downcomer Temperature at 8D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-105	CL-1 Temperature (SC-105)	450	40	450	40	Fluid Temperature (F)
TF-106	CL-2 Temperature (SC-106)	450	40	450	40	Fluid Temperature (F)
TF-107	CL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-108	CL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-113	DVI-1/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-114	DVI-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-115	DVI-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-116	DVI-2/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-118	Lower Rx Vessel Layer Y-Y at 30 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-120	Top of Rx at 8.5 inches & 350 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-126	Lower Rx Vessel Layer A-A at 225 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-127	Lower Rx Vessel Layer A-A at 315 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-128	Lower Rx Vessel Layer C-C at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-129	Lower Rx Vessel Layer C-C at 32 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-130	Lower Rx Vessel Layer G-G at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-131	Lower Rx Vessel Layer G-G at 11.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-132	Upper Rx Vessel Layer F-F at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-133	Upper Rx Vessel Layer F-F at 8 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-134	Upper Rx Vessel Layer E-E at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-135	Upper Rx Vessel Layer E-E at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-140	HL-2 Temperature at Rx Flange (SC-140)	450	40	450	40	Fluid Temperature (F)
TF-141	HL-1 Temperature at Rx Flange (SC-141)	450	40	450	40	Fluid Temperature (F)
TF-142	HL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-143	HL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-147	Upper Rx Vessel Layer I-I at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-148	Upper Rx Vessel Layer I-I at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-149	Upper Rx Vessel Layer H-H at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-150	Upper Rx Vessel Layer H-H at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-151	Upper Rx Vessel Layer E-E at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-152	Upper Rx Vessel Layer E-E at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-153	Upper Rx Vessel Layer F-F at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-154	Upper Rx Vessel Layer F-F at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-155	Lower Rx Vessel Layer G-G at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-156	Lower Rx Vessel Layer G-G at 191.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-157	Lower Rx Vessel Layer C-C at 212 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-158	Lower Rx Vessel Layer C-C at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-162	Lower Rx Vessel Layer A-A at 45 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-163	Lower Rx Vessel Layer A-A at 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-164	Upper Rx Vessel Layer H-H at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-165	Upper Rx Vessel Layer H-H at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-166	Upper Rx Vessel Layer I-I at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-167	Rx Heater Rod B2-319 at 40.13 inches	1000	0	1000	0	Fluid Temperature (F)
TF-168	Upper Rx Vessel Layer K-K at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-169	Upper Rx Vessel Layer M-M at 90 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-170	Upper Rx Vessel Layer M-M at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-171	Top of Rx Down to within 0.50 inches of Upper Support Plate Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-172	Lower Rx Vessel Layer AA-AA at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-173	Lower Rx Vessel Layer AA-AA at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-201	CL-1 at RCP-1 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-202	CL-2 at RCP-2 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-203	CL-3 at RCP-3 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-204	CL-4 at RCP-4 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-205	HL-1 Temperature at SG-1 Head (SC-205)	450	40	450	40	Fluid Temperature (F)
TF-206	HL-2 Temperature at SG-2 Head (SC-206)	450	40	450	40	Fluid Temperature (F)
TF-207	SG-1 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-208	SG-2 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-209	SG-1 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-210	SG-2 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-211	SG-1 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-212	SG-2 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-213	SG-1 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-214	SG-2 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-215	SG-1 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-216	SG-2 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-217	SG-1 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-218	SG-2 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-221	CL-3 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-222	CL-4 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-223	CL-3 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-224	CL-4 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-225	CL-3 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-226	CL-4 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-227	CL-3 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-228	CL-4 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-229	CL-3 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-230	CL-4 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-231	CL-3 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-232	CL-4 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-1	CL-1 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-2	CL-1 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-3	CL-1 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-1	CL-2 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-2	CL-2 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-3	CL-2 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-1	CL-3 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-2	CL-3 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-3	CL-3 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-1	CL-4 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-2	CL-4 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-3	CL-4 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-255	CL-1 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-256	CL-2 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-257	CL-3 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-258	CL-4 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-301	SG-1 Steam Temperature (SC-301)	450	40	450	40	Fluid Temperature (F)
TF-305	SG-1 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-306	SG-2 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-307	SG-1 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-308	SG-2 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-310	SG-2 Steam Temperature (SC-310)	450	40	450	40	Fluid Temperature (F)
TF-311	SG-1 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-312	SG-2 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-401	ACC-1 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-402	ACC-2 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-403	ACC-1 N2Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-404	ACC-2 N2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-405	ACC-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-406	ACC-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-501	CMT-1 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-502	CMT-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-503	CMT-1 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-504	CMT-2 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-505	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-506	CMT-2 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-507	CMT-1 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-508	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-509	CMT-1 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-510	CMT-2 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-511	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-512	CMT-2 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-513	CMT-1 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-514	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-515	CMT-1 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-516	CMT-2 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-517	CMT-1 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-518	CMT-2 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-519	CMT-1 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-520	CMT-2 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-521	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-522	CMT-2 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-523	CMT-1 Long T/C Rod at 49.05 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-524	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-525	CMT-1 at 1/2 Upper-Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-526	CMT-2 SPARGER 2\3 TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-527	CMT-1 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-528	CMT 2\3 HEAD TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-529	CMT-1 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-530	CMT-2 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-531	CMT-1 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-532	CMT-2 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-533	CMT-1 CL Balance Line at CL-3 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-535	CMT-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-536	CMT-2 CL Balance Line at CL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-537	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-538	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-539	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-540	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-541	CMT-1 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-542	CMT-2 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-543	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-544	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-546	CMT-2 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-547	CMT-1 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-548	CMT-2 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-549	CMT-1 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-550	CMT-2 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-551	CMT-1 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-552	CMT-2 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-553	CMT-1 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-554	CMT-2 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-555	CMT-1 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-556	CMT-2 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-557	CMT-1 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-558	CMT-2 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-559	CMT-1 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-560	CMT-2 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-561	CMT-1 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-562	CMT-2 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-563	CMT-1 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-564	CMT-2 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-601	PZR Surge Line at PZR Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-602	ADS1-3 Common Line at PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-603	PZR Surge Line at HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-605	PZR Water Space Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-608	PZR Temperature (SC-608)	450	40	450	40	Fluid Temperature (F)
TF-609	ADS4-1 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-610	ADS4-2 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-614	PZR Steam Vent Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-615	ADS1-3 Common Line From PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-616	ADS1-3 Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-617	ADS1-3 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-618	ADS4-2 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-619	ADS4-1 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-620	ADS4-2 Inlet From HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-621	ADS4-1 Inlet From HL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-622	ADS4-2 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-623	ADS4-1 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-701	IRWST/PRHR T/C Rod at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-702	IRWST/PRHR T/C Rod at 7.98 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-703	IRWST/PRHR T/C Rod at 15.97 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-704	IRWST/PRHR T/C Rod at 25.85 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-705	IRWST/PRHR T/C Rod at 35.73 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-706	IRWST/PRHR T/C Rod at 45.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-707	IRWST/PRHR T/C Rod at 55.49 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-708	IRWST/PRHR T/C Rod at 65.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-709	IRWST/PRHR T/C Rod at 75.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-710	IRWST/PRHR T/C Rod at 86.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-711	IRWST/PRHR T/C Rod at 97.47 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-712	IRWST/PRHR T/C Rod at 108.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-713	IRWST Discharge to DVI-01 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-714	IRWST Discharge to DVI-02 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-715	IRWST Sparger T/C Rod at 8.97 inches Temperature (SC-715)	1000	0	1000	0	Fluid Temperature (F)
TF-716	IRWST Sparger T/C Rod at 36.63 inches Temperature	240	40	240	40	Fluid Temperature (F)
TF-717	IRWST Sparger T/C Rod at 66.34 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-718	IRWST Sparger T/C Rod at 98.45 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-719	IRWST Sparger Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-720	IRWST/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-721	IRWST/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-722	IRWST Steam Exhaust Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-723	IRWST/Primary Sump Overflow Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-801	CVSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-802	RNSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-803	PRHR HX Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-804	PRHR HX Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-805	PRHR HX Long Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-806	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-808	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-809	PRHR HX Long Tube at Center Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-810	PRHR HX Short Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-811	PRHR HX Long Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-812	PRHR HX Outlet Head Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-813	RNSP Discharge to DVI-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-814	RNSP Discharge to DVI-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-901	Primary Sump Inlet from Fill Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-902	Secondary Sump Temperature (SC-902)	240	40	240	40	Fluid Temperature (F)
TF-903	Primary Sump Temperature (SC-903)	240	40	240	40	Fluid Temperature (F)
TF-904	Primary Sump/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-905	Primary Sump at Secondary Sump Crossover Level Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-906	Primary Sump Exhaust Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-907	Primary Sump at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-908	Break Separator Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-909	Primary Sump/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-910	CRP Discharge to Primary Sump Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-911	CRP Discharge to IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-912	Break Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-913	Break Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-914	Condensate Return Tank Temperature (SC-914)	200	40	200	40	Fluid Temperature (F)

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DAS Configuration

TF-915	Break Separator 6-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-916	BAMS Header 10-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-917	BAMS Header Temperature (SC-917)	240	40	240	40	Fluid Temperature (F)
TF-918	Break Separator 8-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TH-103	Rx Heater Rod Temperature (SCTH-101-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-211	Rx Heater Rod Temperature (SCTH-103-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-305	Rx Heater Rod Temperature (SCTH-304-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-309	Rx Heater Rod Temperature (SCTH-102-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-401	Rx Heater Rod Temperature (SCTH-104-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-507	Rx Heater Rod Temperature (SCTH-314-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-601	PZR Heater Rod #1	1000	0	1000	0	Internal Rod Temperature (F)
TH-602	PZR Heater Rod #2	1000	0	1000	0	Internal Rod Temperature (F)
TH-603	PZR Heater Rod #3	1000	0	1000	0	Internal Rod Temperature (F)
TH-604	PZR Heater Rod #4	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-1	Core Thermocouple Rod D-001 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-2	Core Thermocouple Rod D-001 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-3	Core Thermocouple Rod D-001 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-4	Core Thermocouple Rod D-001 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-5	Core Thermocouple Rod D-001 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-6	Core Thermocouple Rod D-001 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-1	Core Thermocouple Rod D-303 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-2	Core Thermocouple Rod D-303 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-3	Core Thermocouple Rod D-303 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-4	Core Thermocouple Rod D-303 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-5	Core Thermocouple Rod D-303 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-6	Core Thermocouple Rod D-303 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-1	Core Thermocouple Rod E-308 at 22.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-2	Core Thermocouple Rod E-308 at 34.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-3	Core Thermocouple Rod E-308 at 46.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-4	Core Thermocouple Rod D-001 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-5	Core Thermocouple Rod D-001 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-6	Core Thermocouple Rod D-303 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-1	Core Thermocouple Rod D-313 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-2	Core Thermocouple Rod D-313 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-3	Core Thermocouple Rod D-313 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-4	Core Thermocouple Rod D-313 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-5	Core Thermocouple Rod D-313 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-6	Core Thermocouple Rod D-313 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-1	Core Thermocouple Rod F-318 at 28.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-2	Core Thermocouple Rod F-318 at 40.13 inches	1000	0	1000	0	Internal Rod Temperature (F)

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TR-318-3	Core Thermocouple Rod F-318 at 51.86 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-4	Core Thermocouple Rod D-303 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-5	Core Thermocouple Rod D-313 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-6	Core Thermocouple Rod D-313 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TW-104-1.5D-2	CL-4 Downcomer Wall Temperature at 1.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-2	CL-4 Downcomer Wall Temperature at 3.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-3	CL-4 Downcomer Wall Temperature at 3.5D, 345 degrees	1000	0	1000	0	Wall Temperature (F)
TW-201	SG-1 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-202	SG-2 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-203	SG-1 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-204	SG-2 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-205	SG-1 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-206	SG-2 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-208	SG-2 Long Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-209	SG-1 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-210	SG-2 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-601	ADS1-3 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-602	ADS4-2 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-603	ADS4-1 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-801	PRHR HX Long Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-802	PRHR HX Short Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-803	PRHR HX Long Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-804	PRHR HX Short Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-805	PRHR HX Short Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-806	PRHR HX Long Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-807	PRHR HX Short Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-808	PRHR HX Long Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-905	Break Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
DASRunning	DSC Engine is running, but not necessarily logging data	N/A	N/A	N/A	N/A	N/A
DASLogging	DSC Engine is logging data to the Citadel database	N/A	N/A	N/A	N/A	N/A
FVM-004	Catch Tank Steam Flow Rate	4.9885	1.001	70	0	Steam Flow Rate (cfm)
PT-004	Temp Steam Pressure for FVM-002	5.0026	1.0016	400	0	Pressure (psig)




DEPARTMENT OF NUCLEAR ENGINEERING &
RADIATION HEALTH PHYSICS


**ADVANCED THERMAL HYDRAULIC
RESEARCH LABORATORY**

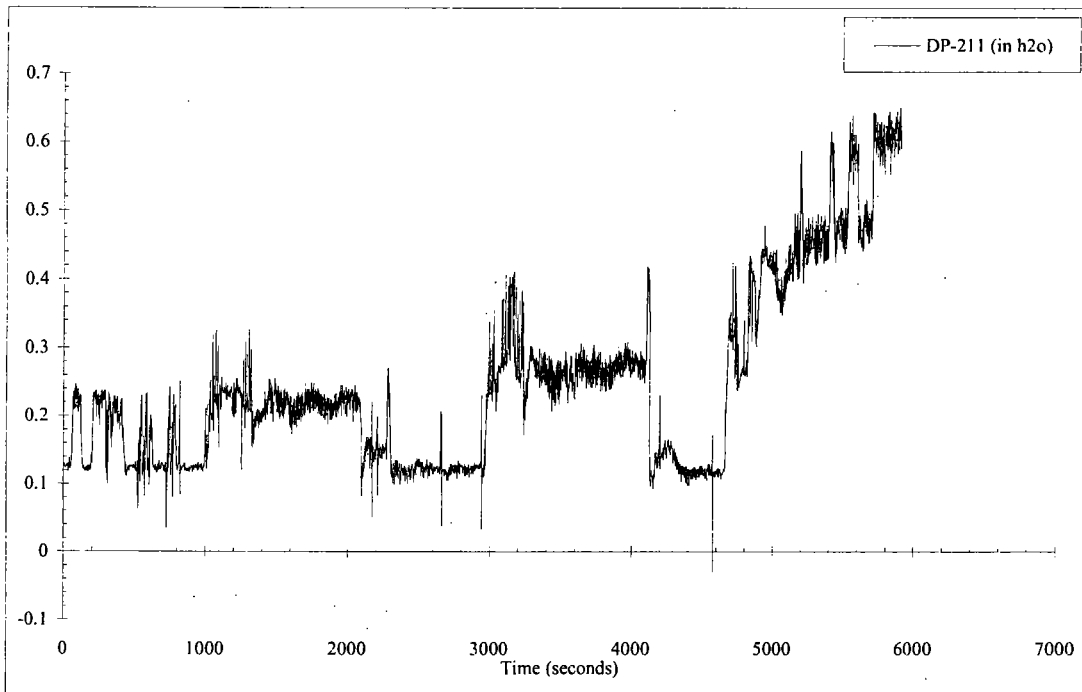
**STEAM GENERATOR U-TUBE CONDENSATION
TEST @ 330 PSIG**

NRC-COND-05

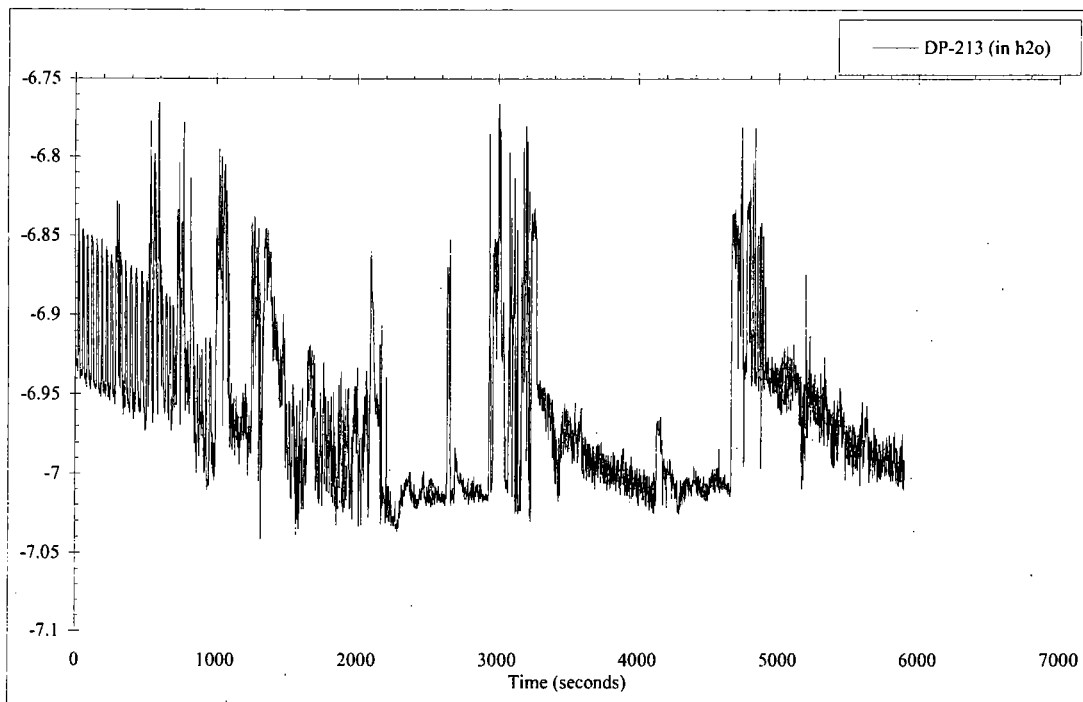
Revision 0

 2/19/07
John Groome, Originator Date
Facility Operations Manager
Research Assistant

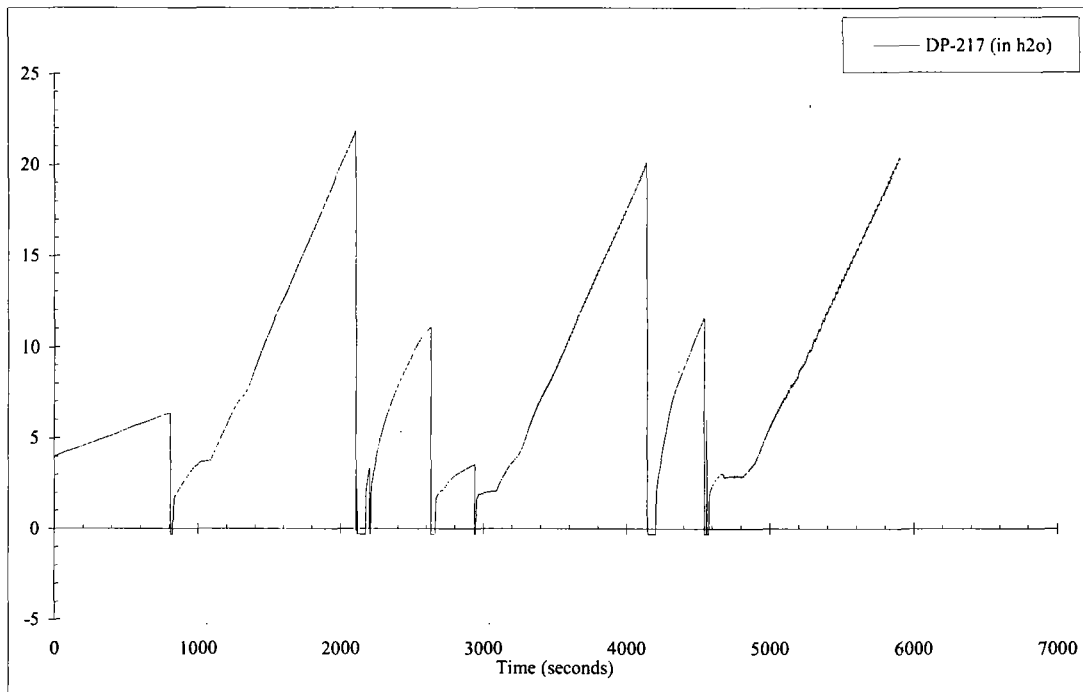
 2/19/07
Brian Woods, Approval Date
Program Manager
Assistant Professor



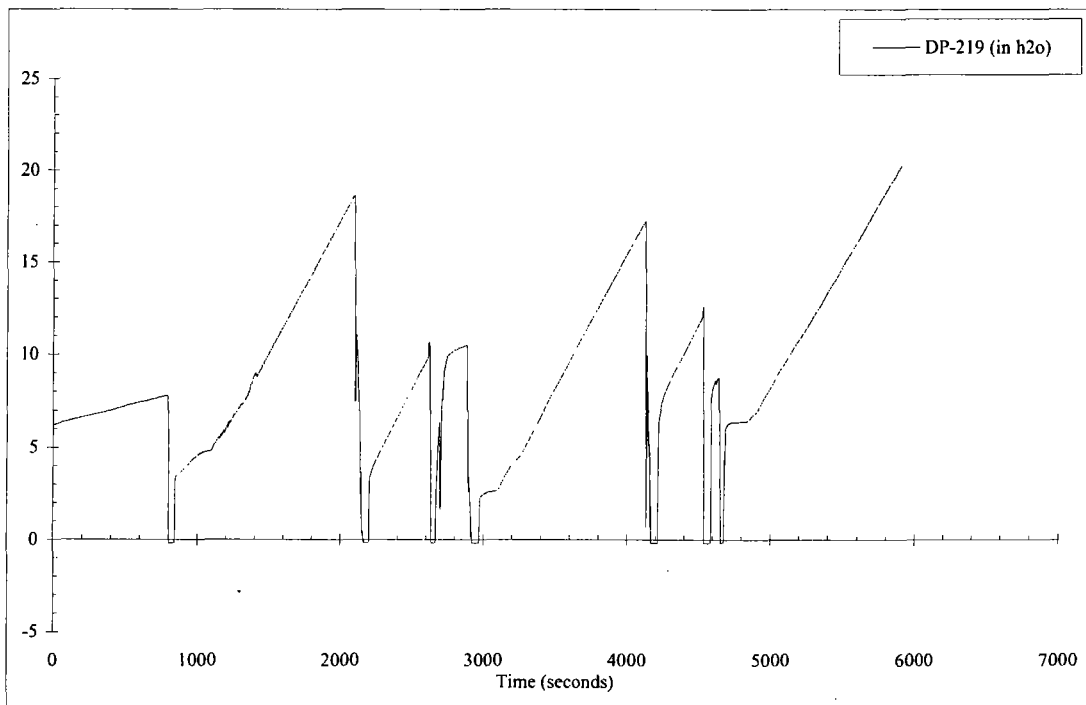
SG-1 Short Tube Entrance Losses



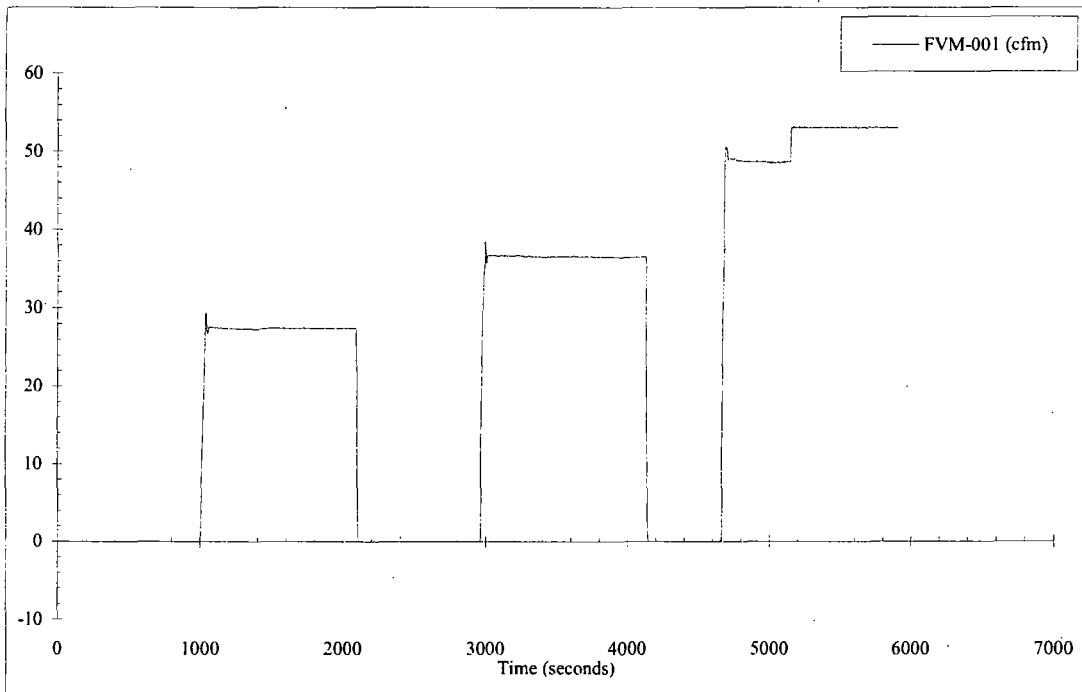
SG-1 Long Tube Exit Losses



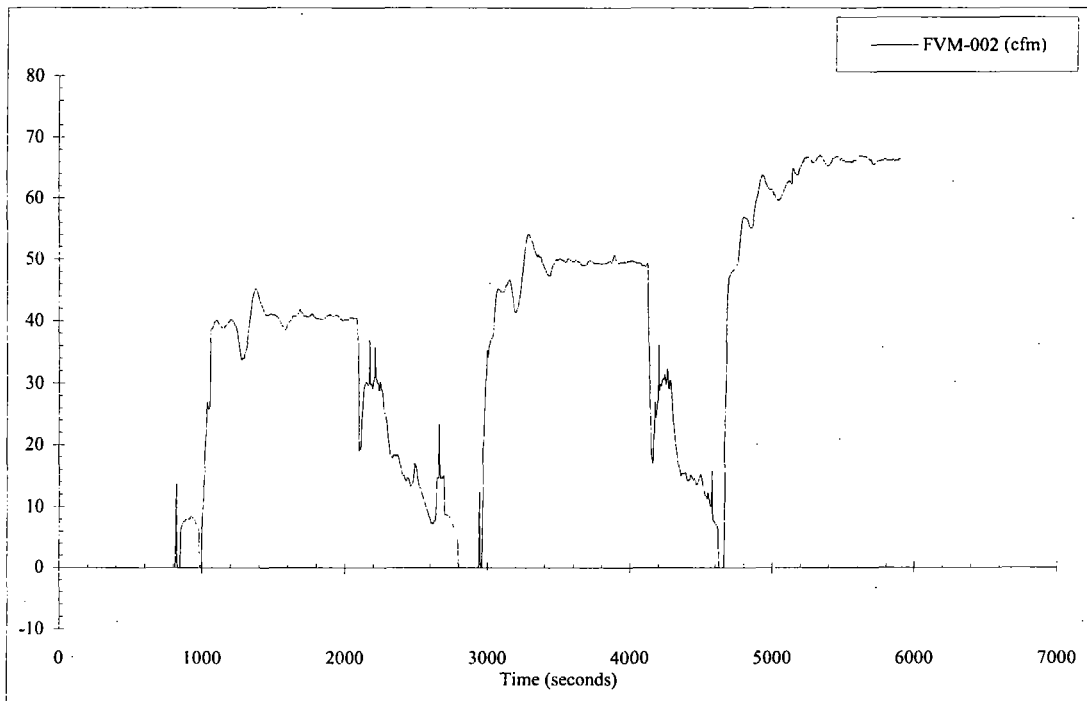
Separator Uncompensated Water Level



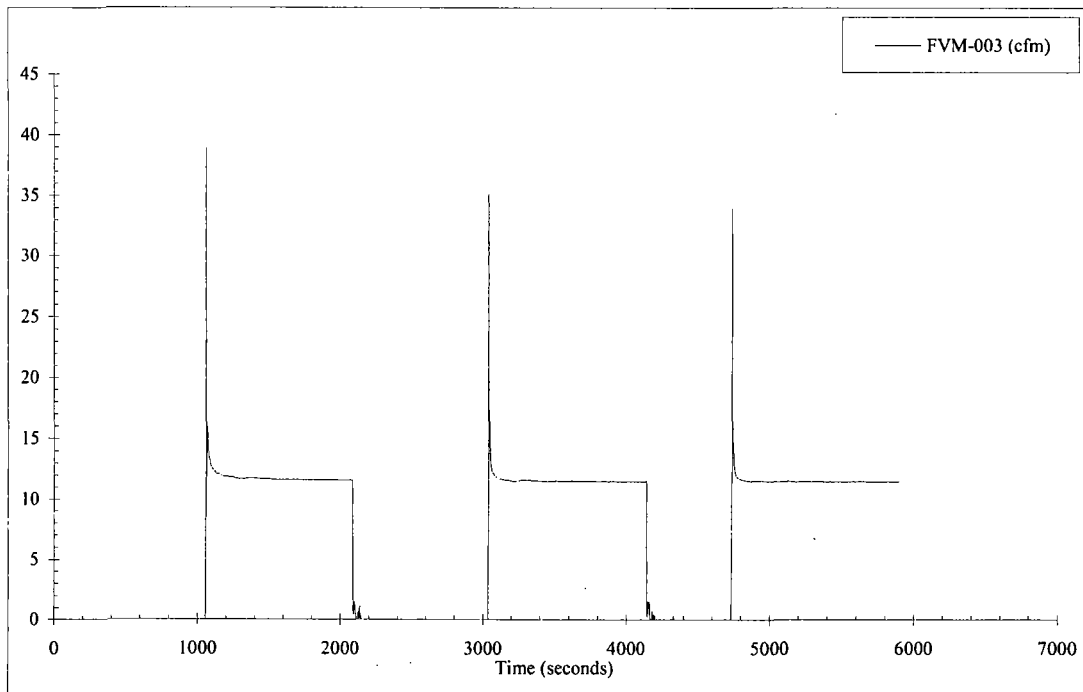
Catch Tank Uncompensated Water Level



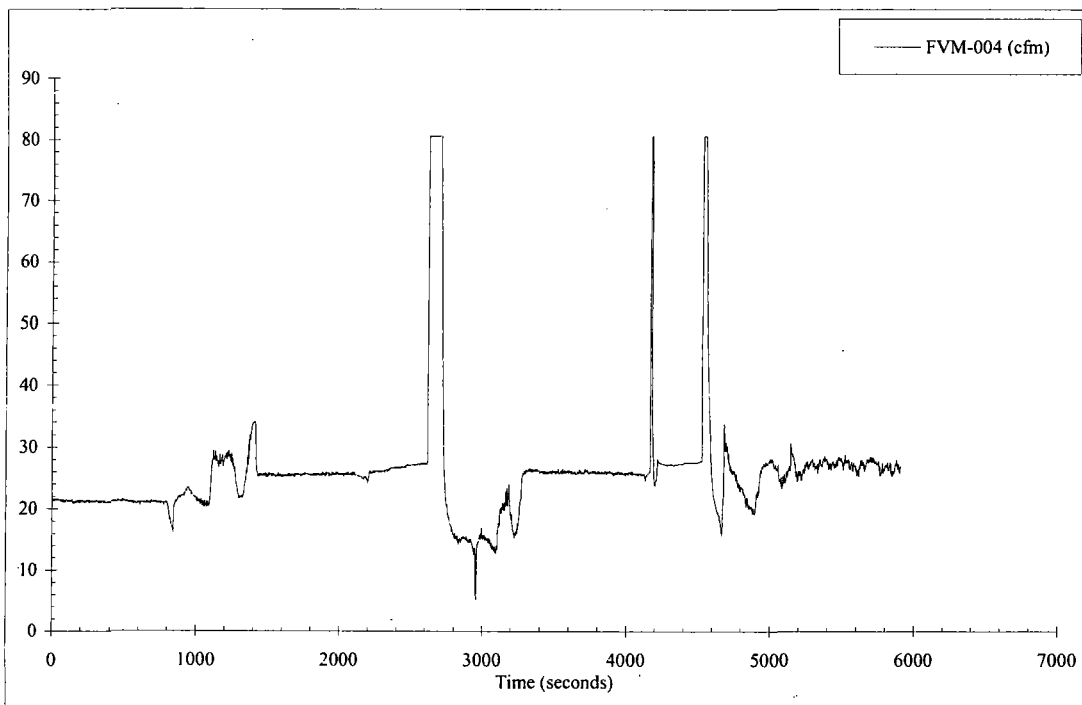
Separator Outlet Steam Flowrate



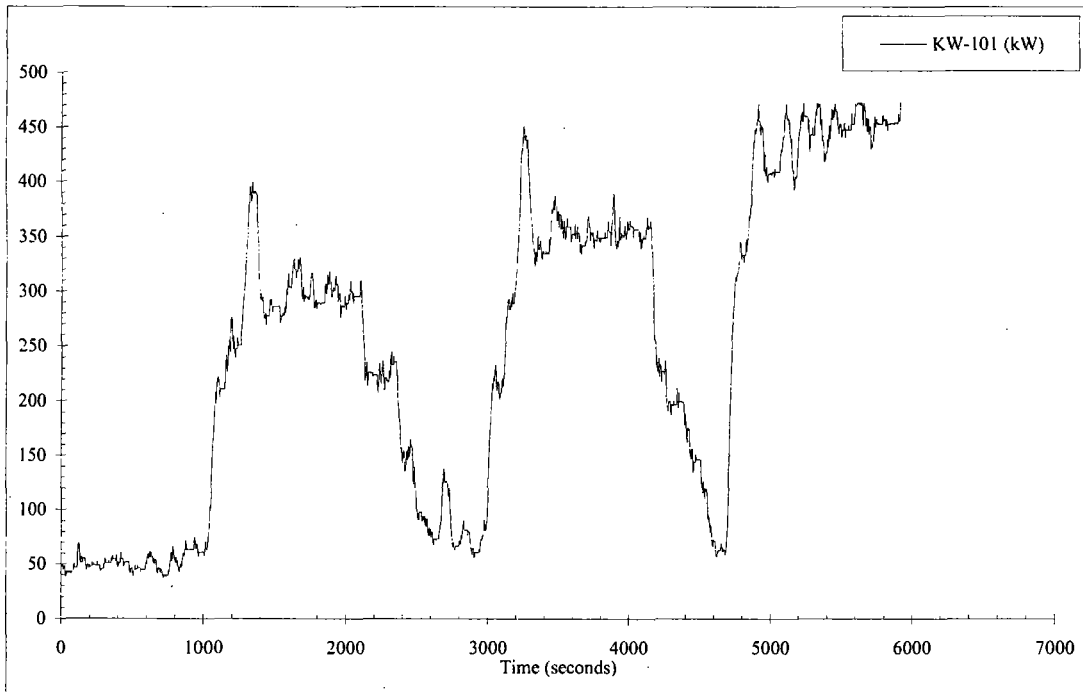
SG-2 Main Steam Flow



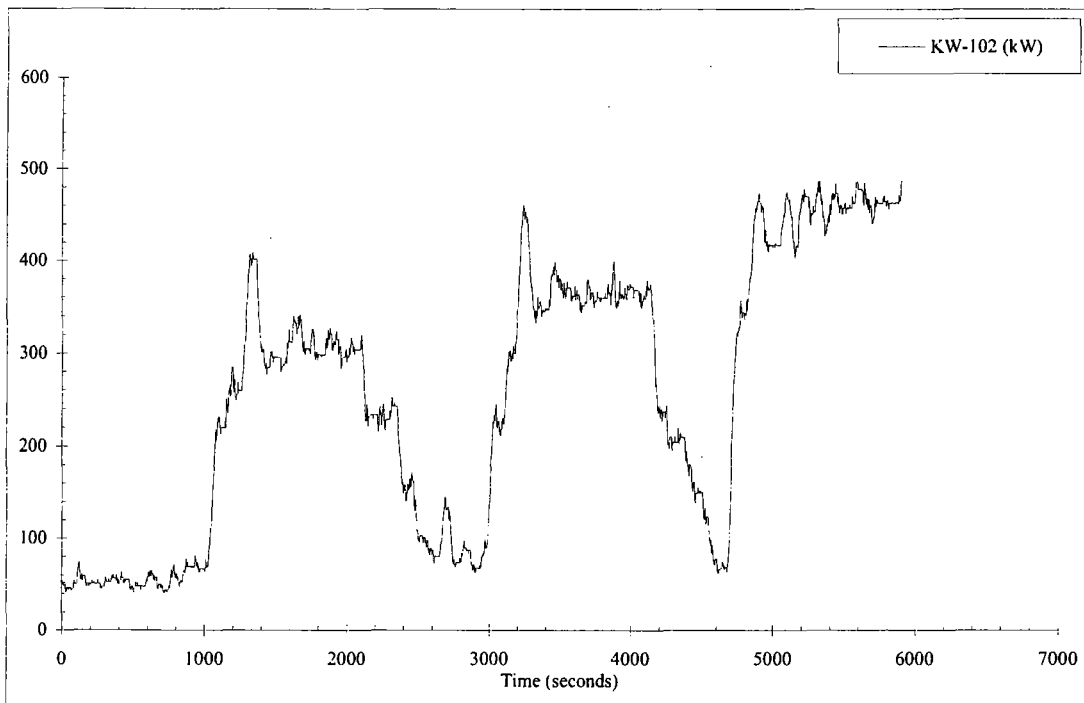
Main Steam Total Flow



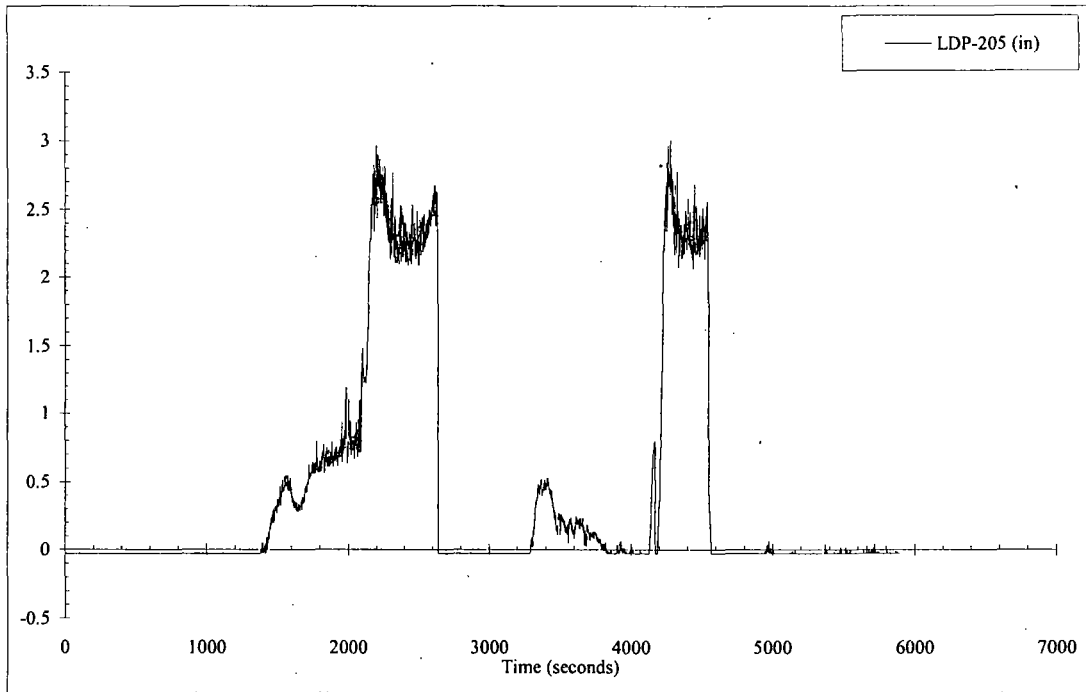
Catch Tank Steam Flow Rate



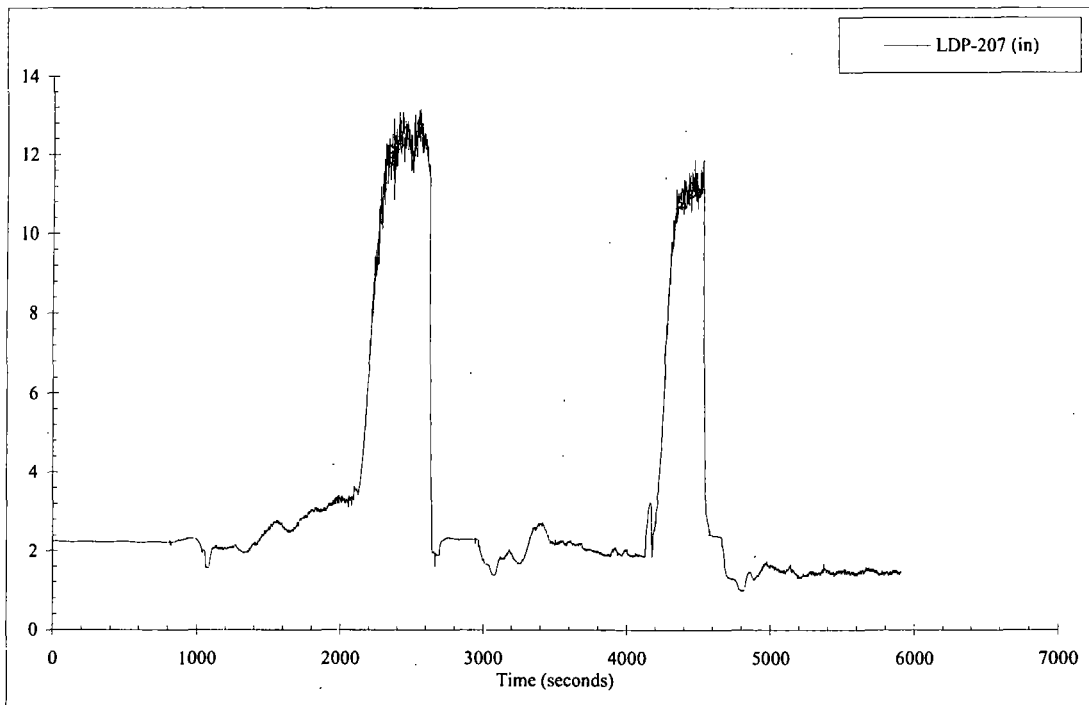
Rx Heater Group 1 Power



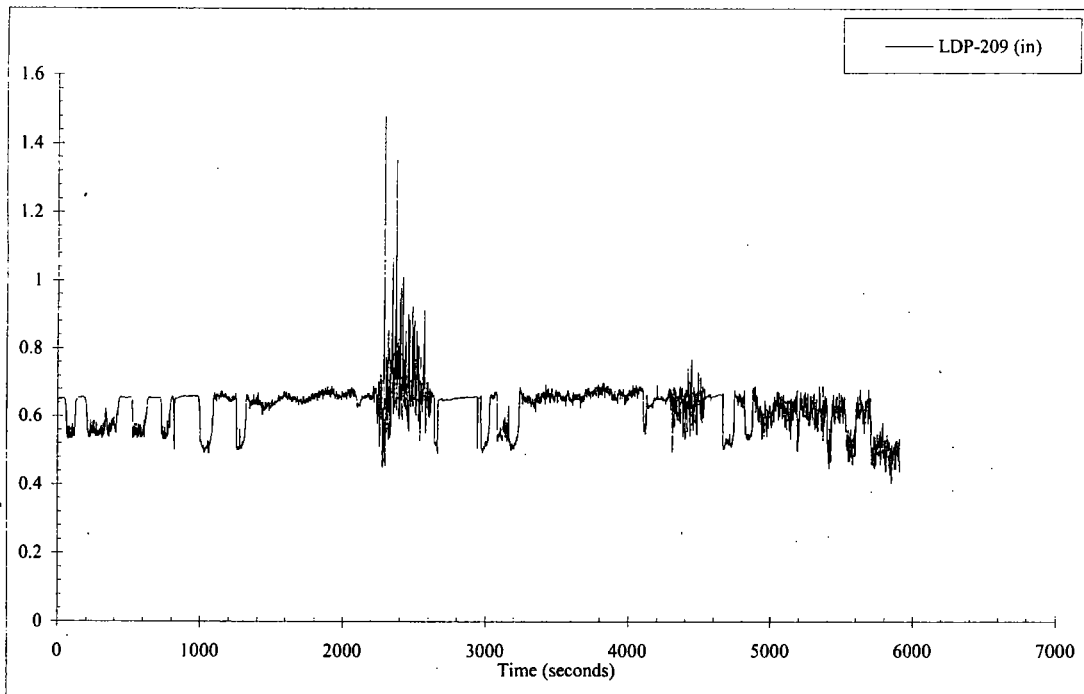
Rx Heater Group 2 Power



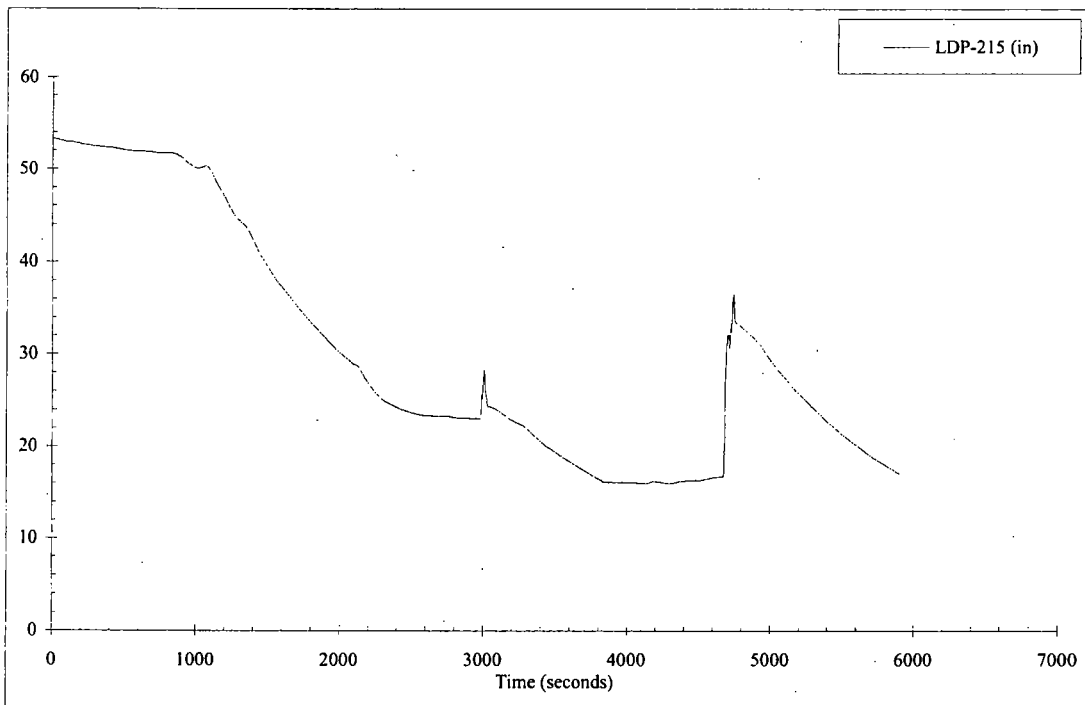
HL-1 Uncompensated Water Level



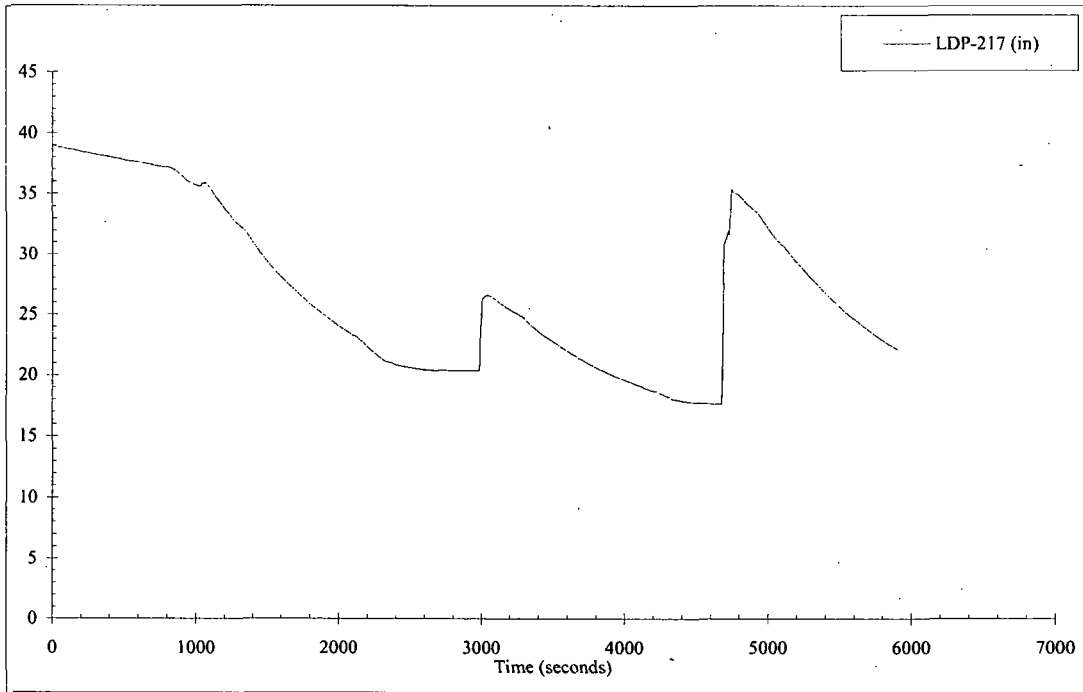
SG-1 to HL-1 Elbow Plenum Uncompensated Water Level



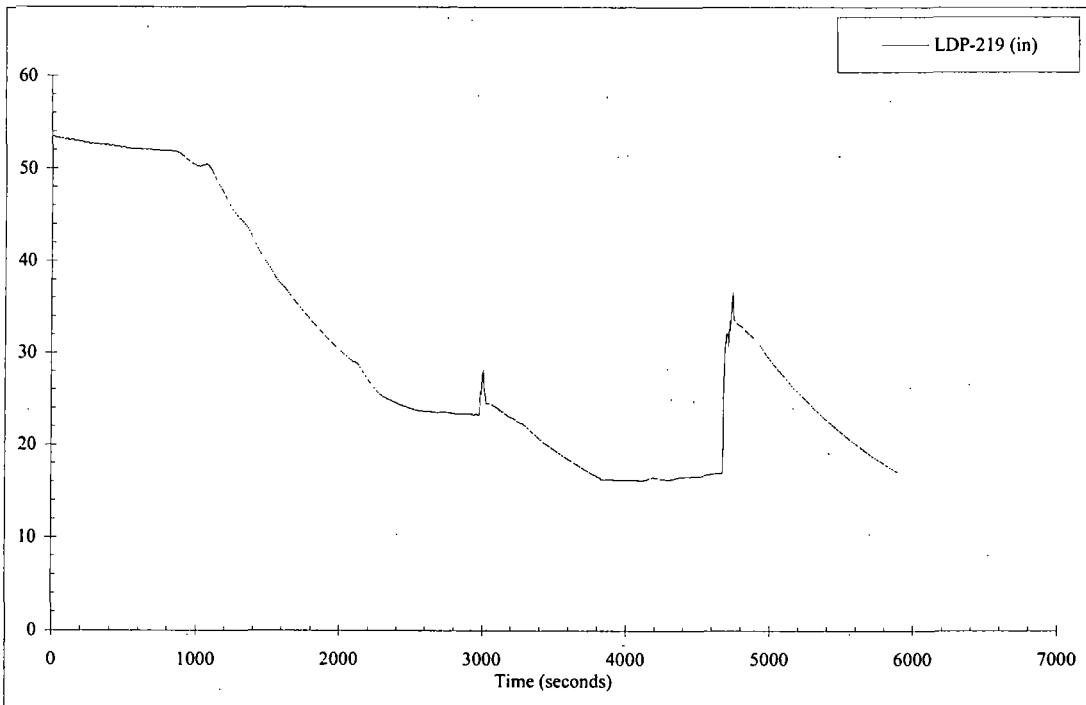
SG-1 to HL-1 Plenum Uncompensated Water Level



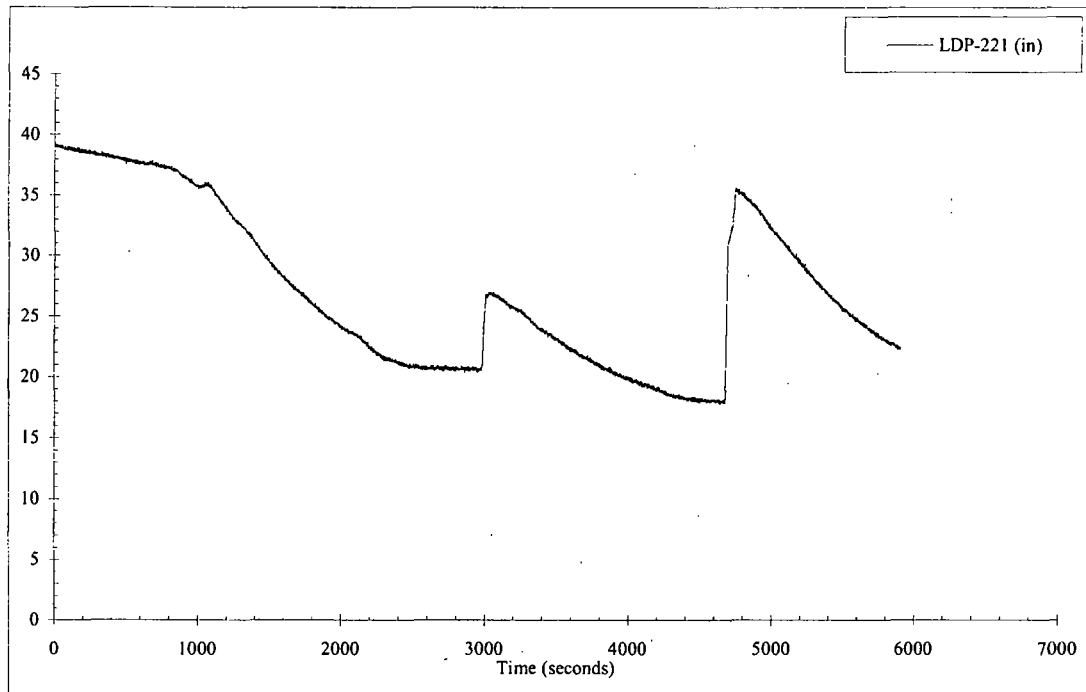
SG-1 Long Tube to HL Uncompensated Water Level



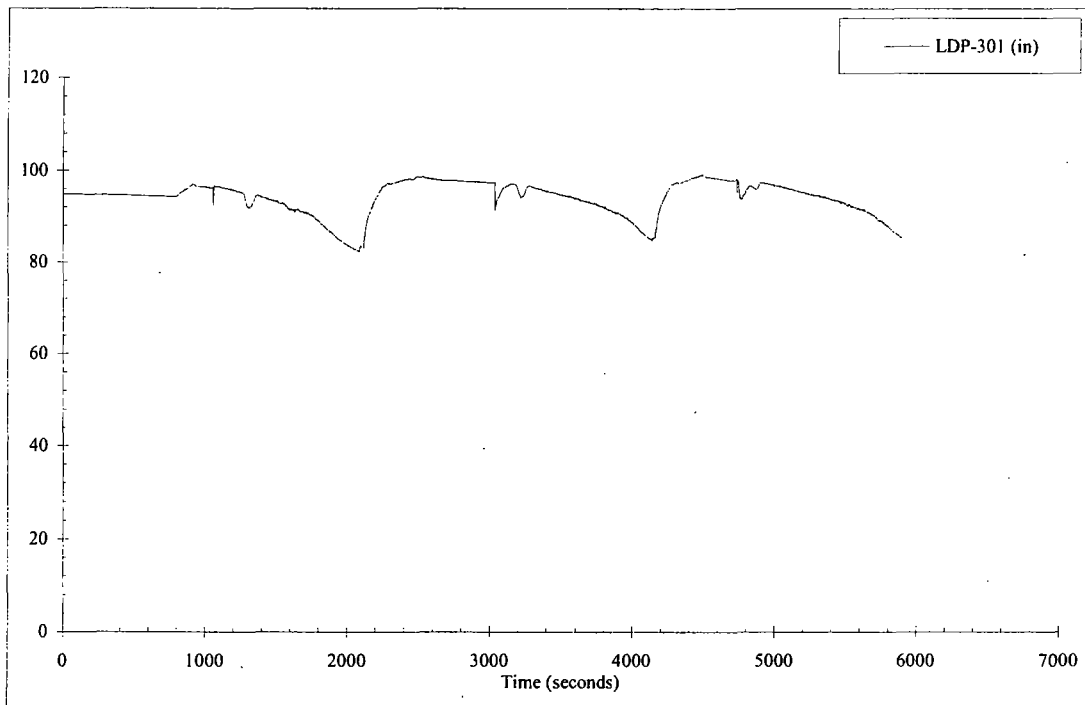
SG-1 Short Tube to HL Uncompensated Water Level



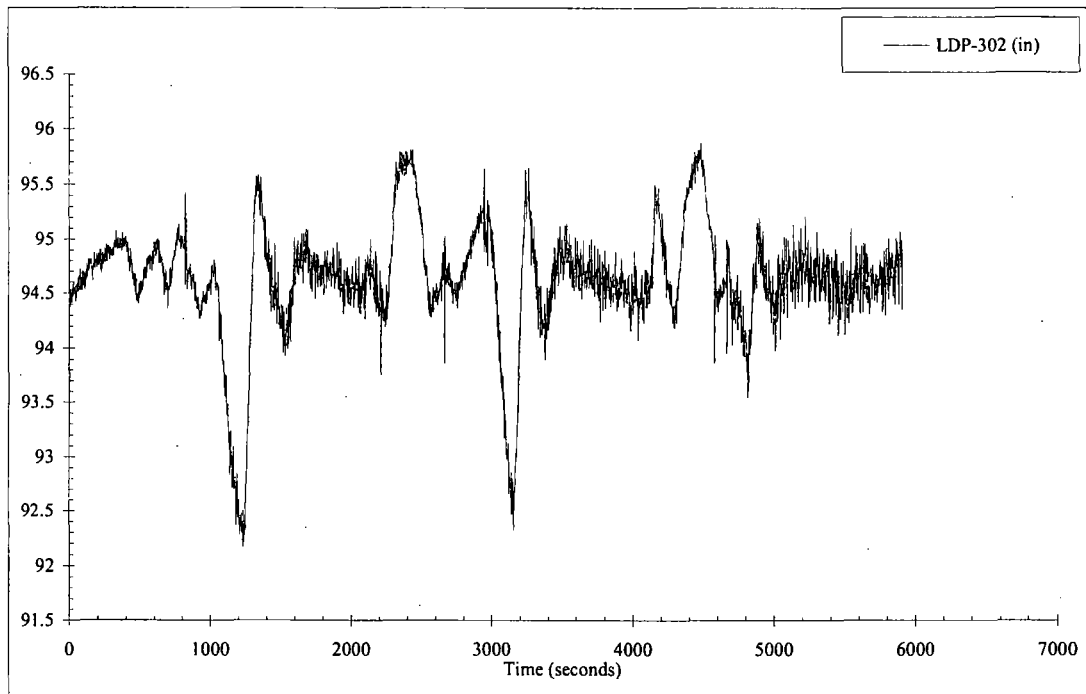
SG-1 Long Tube to CL Uncompensated Water Level



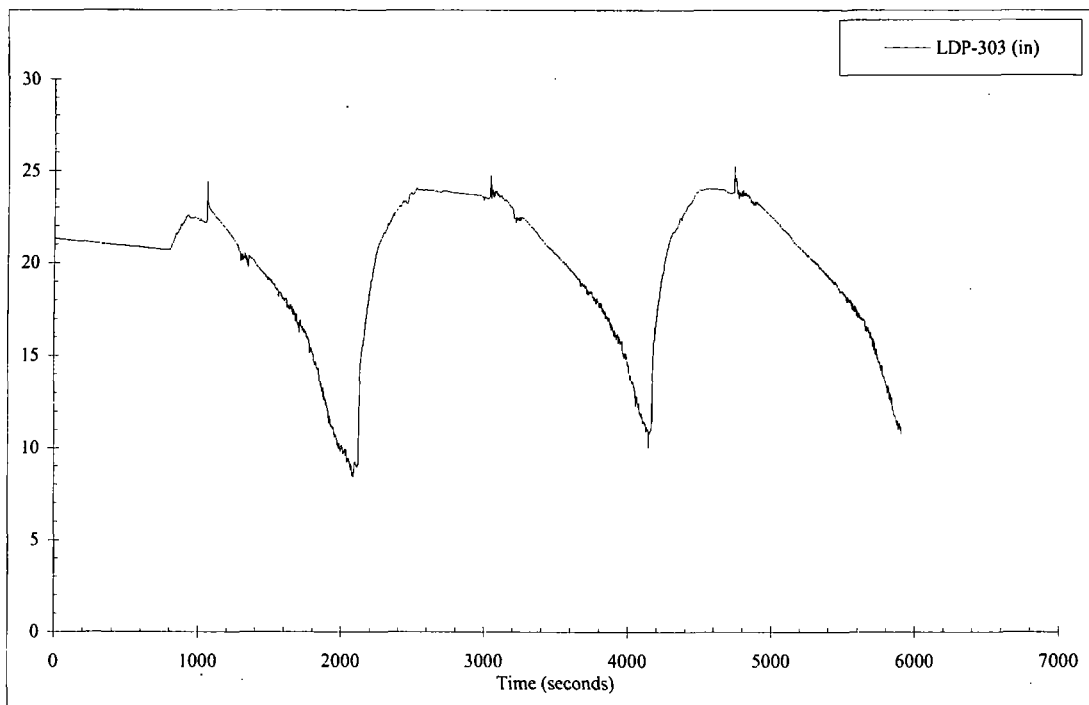
SG-1 Short Tube to CL Uncompensated Water Level



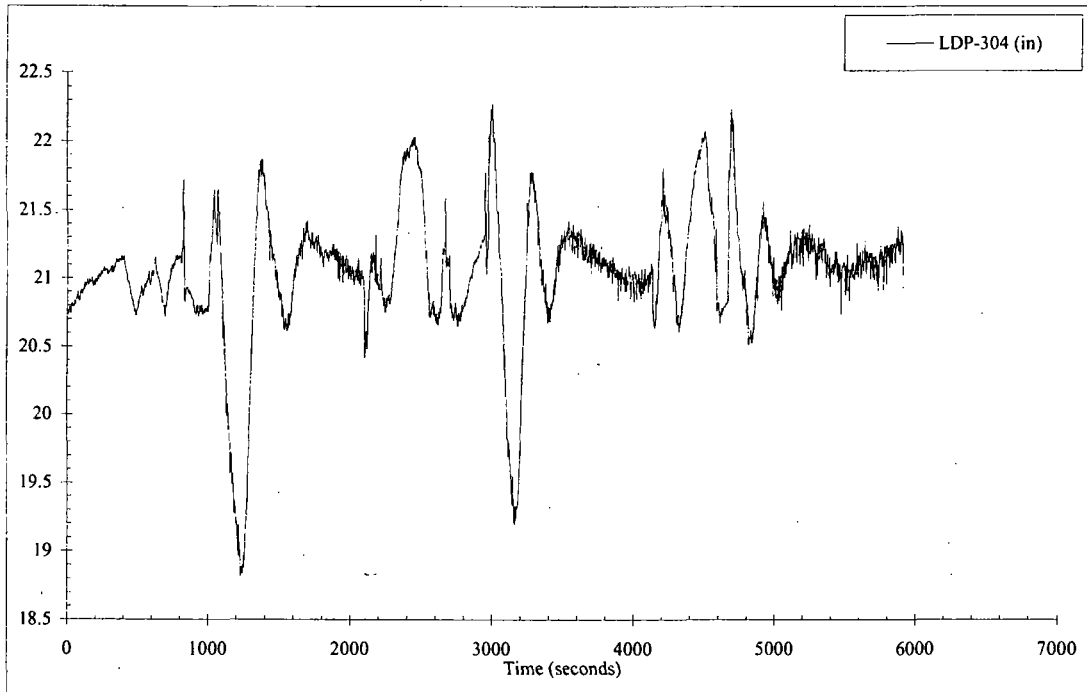
SG-1 WR Uncompensated Water Level



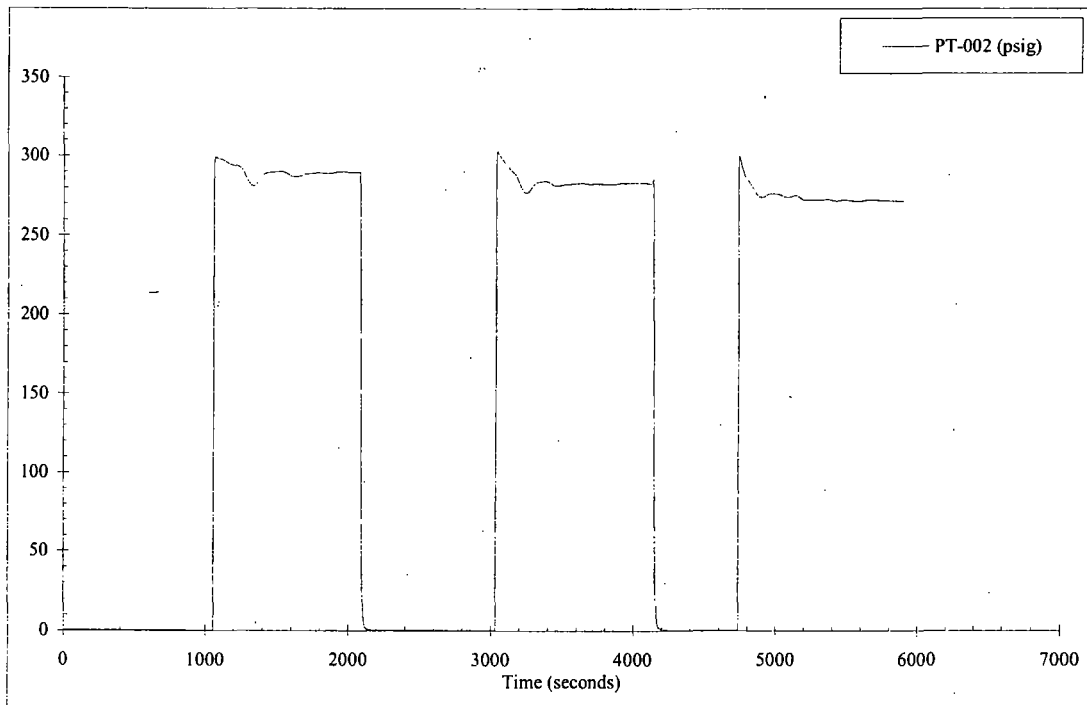
SG-2 WR Uncompensated Water Level



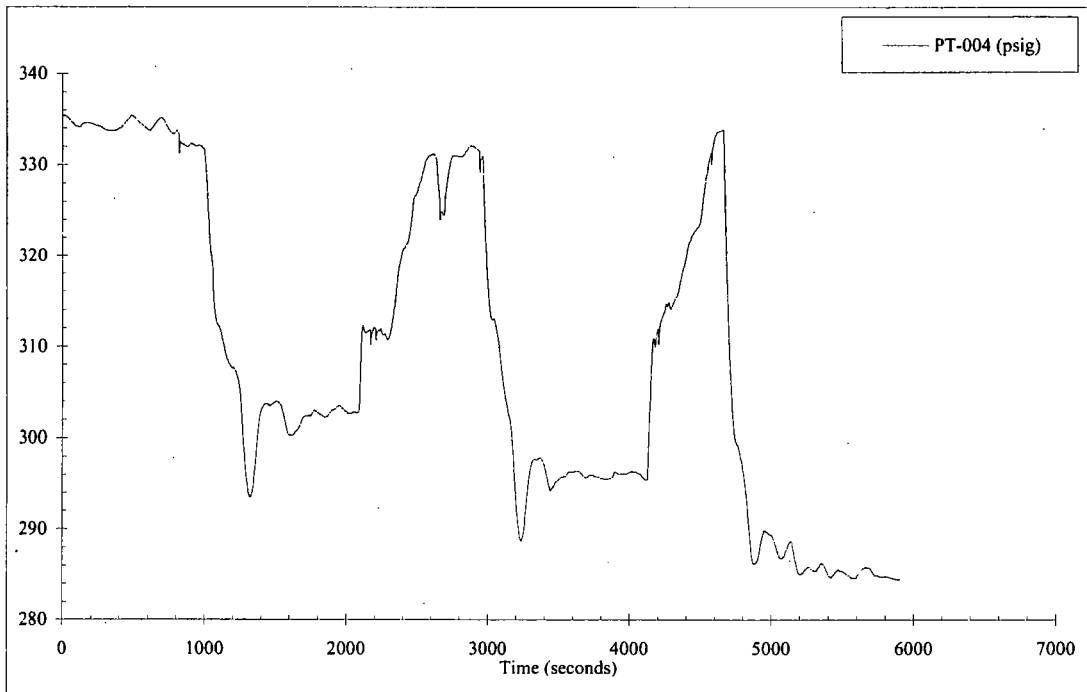
SG-1 NR Uncompensated Water Level



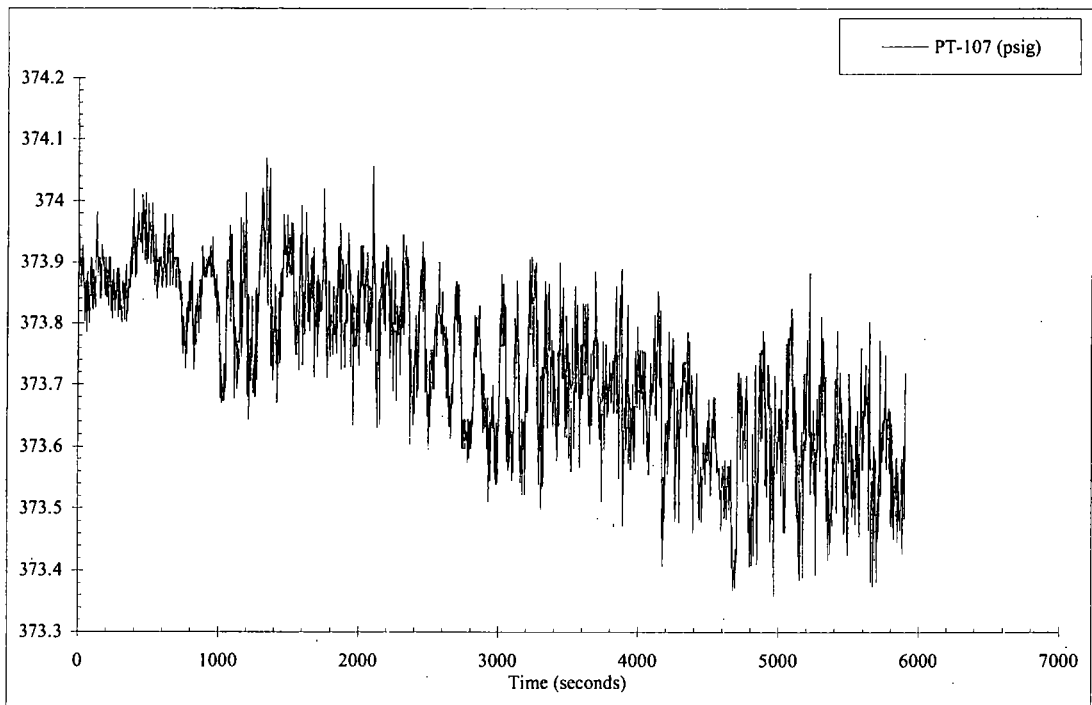
SG-2 NR Uncompensated Water Level



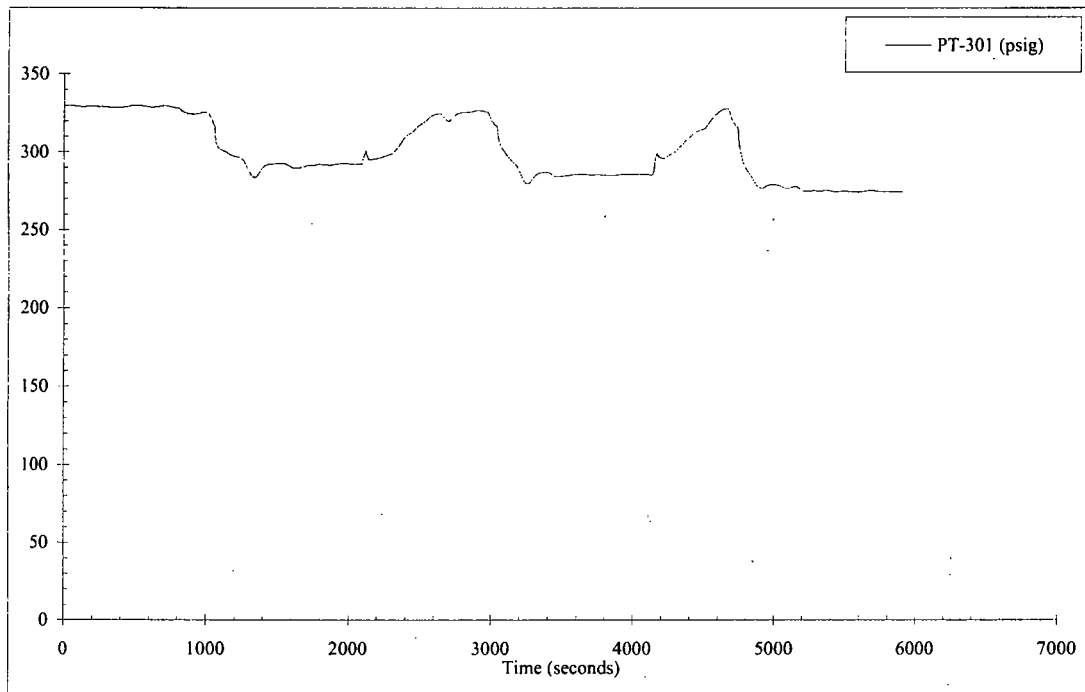
MS Header Pressure



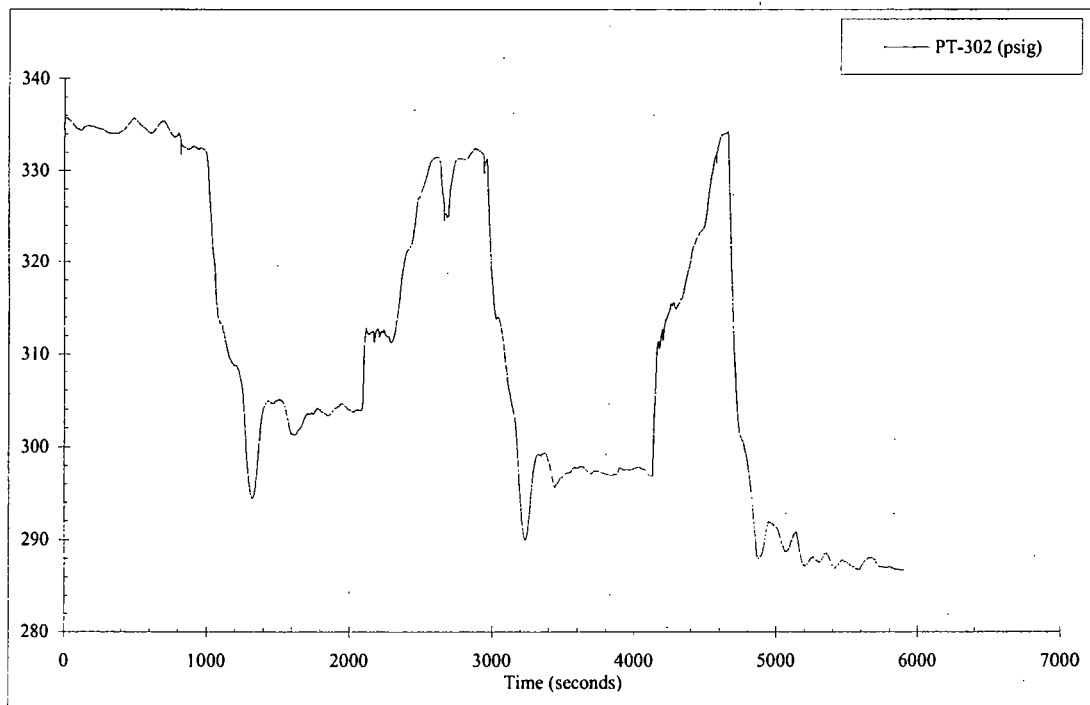
Temp Steam Pressure for FVM-002



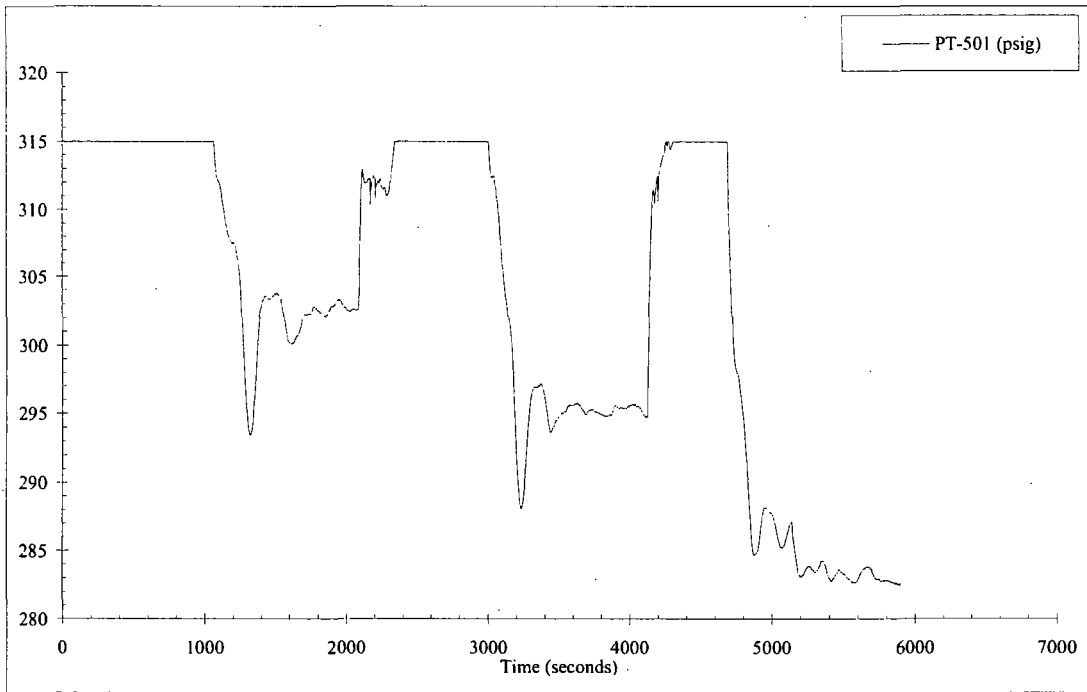
Rx Upper Head Pressure



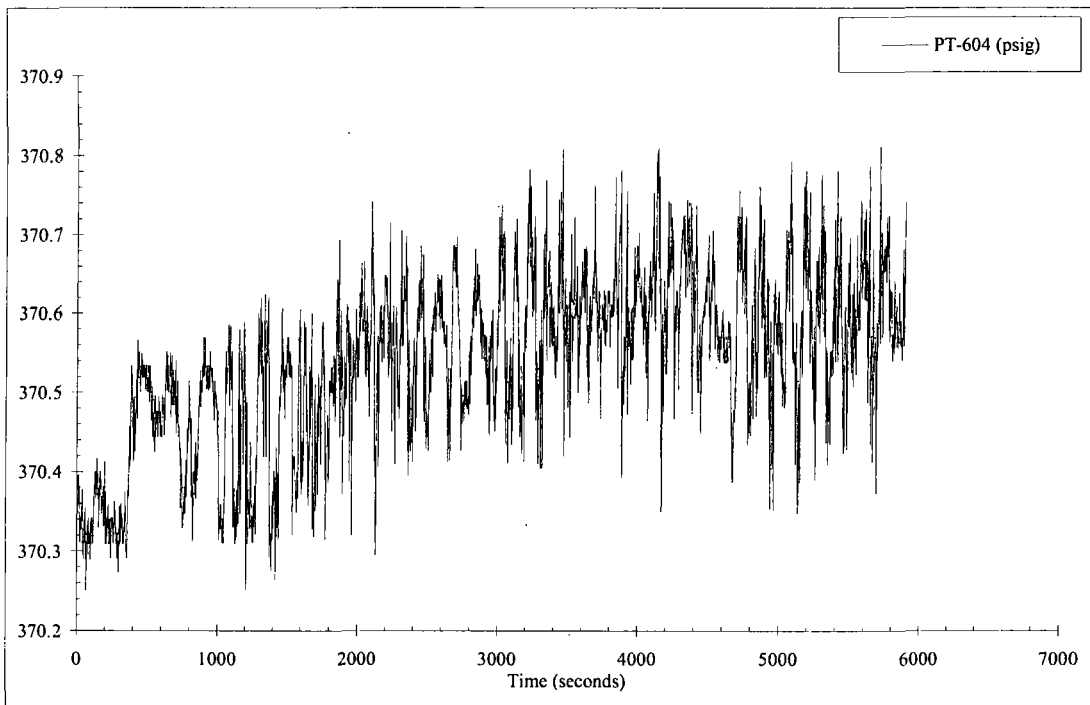
SG-1 Pressure



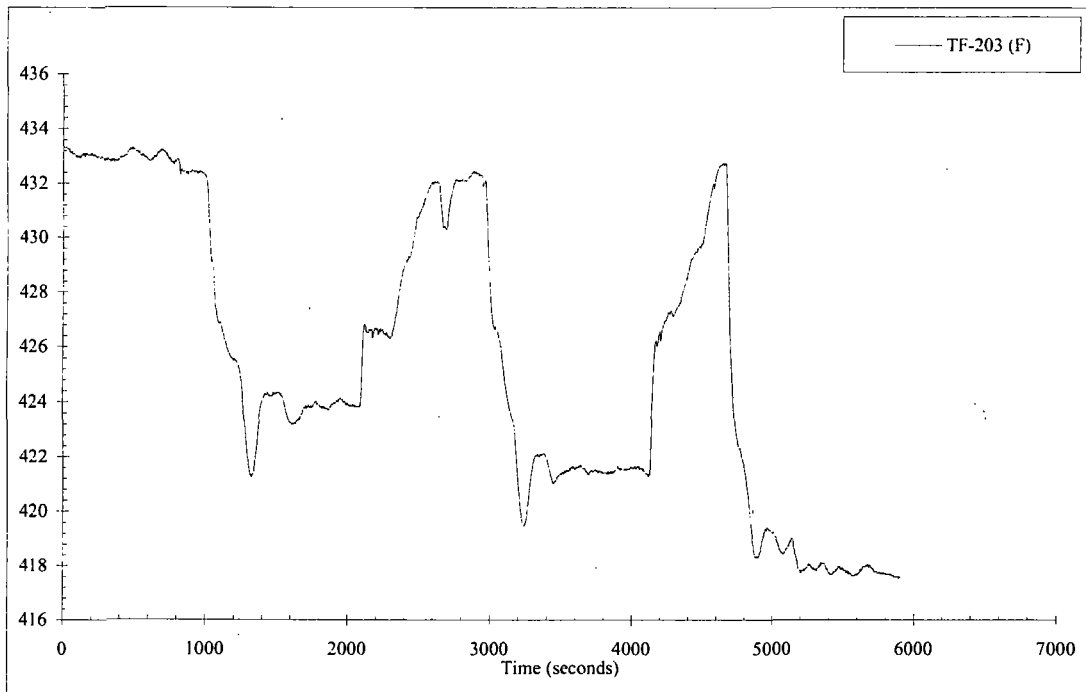
SG-2 Pressure



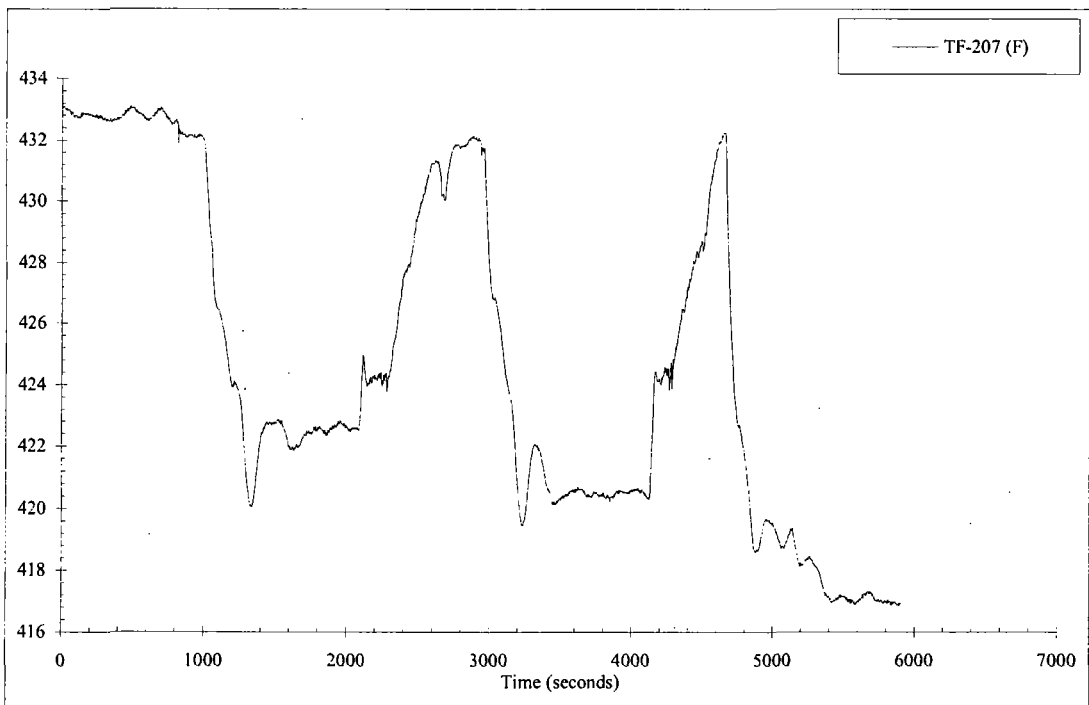
Separator Outlet Steam Pressure



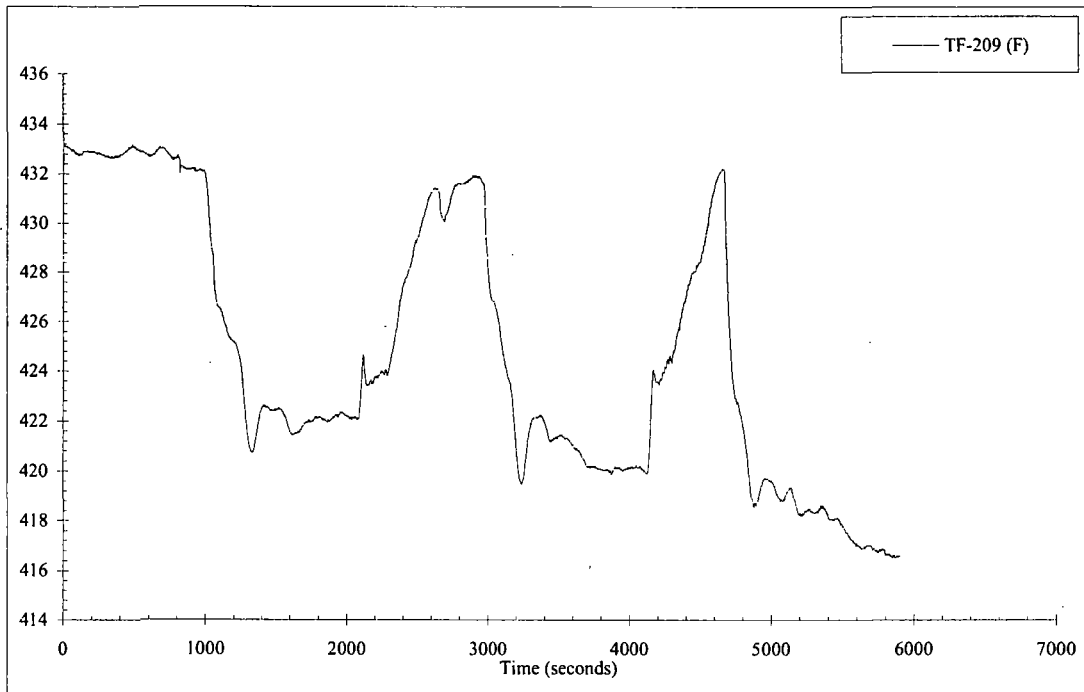
PZR WR Pressure



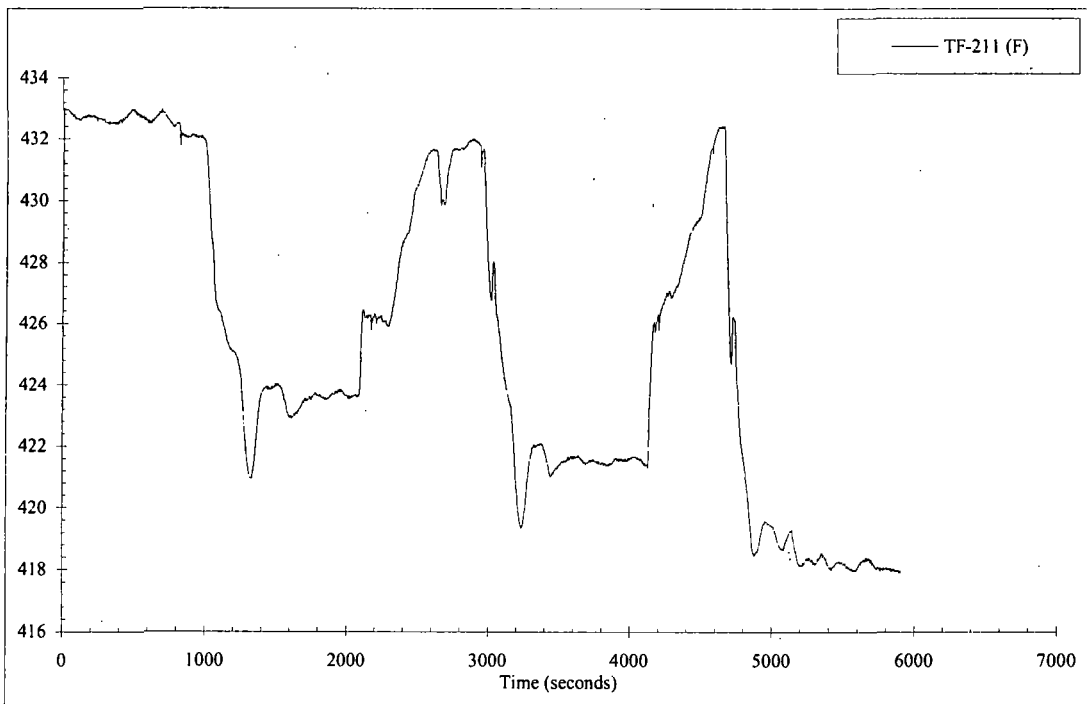
Separator Outlet Steam Temperature



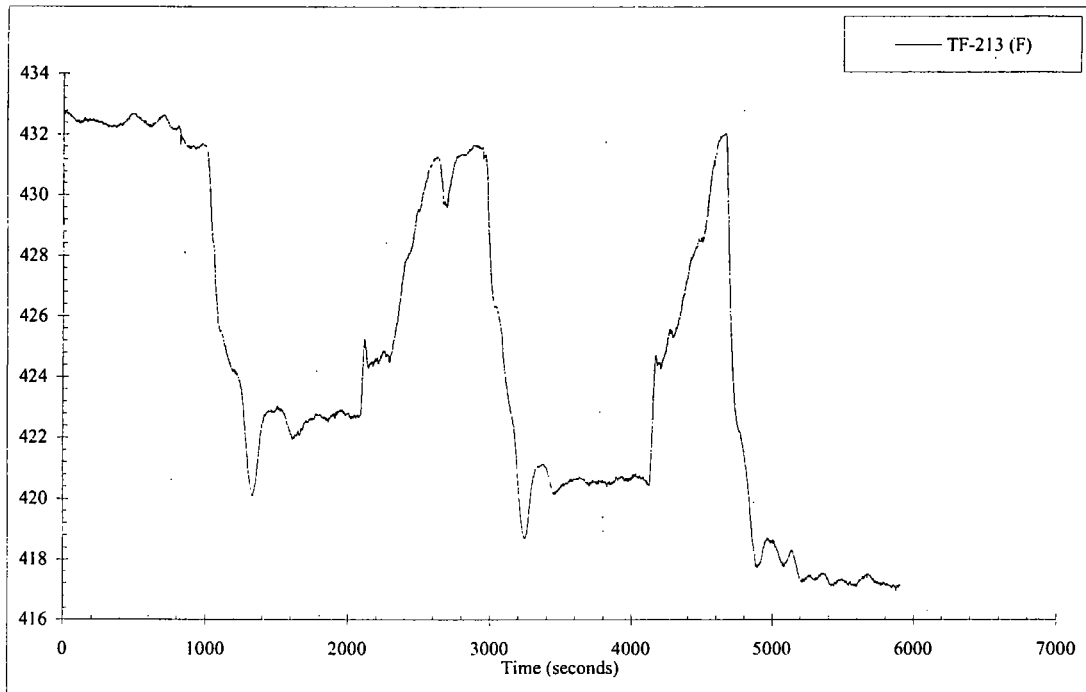
SG-1 Short Tube at Middle Outlet Side Temperature



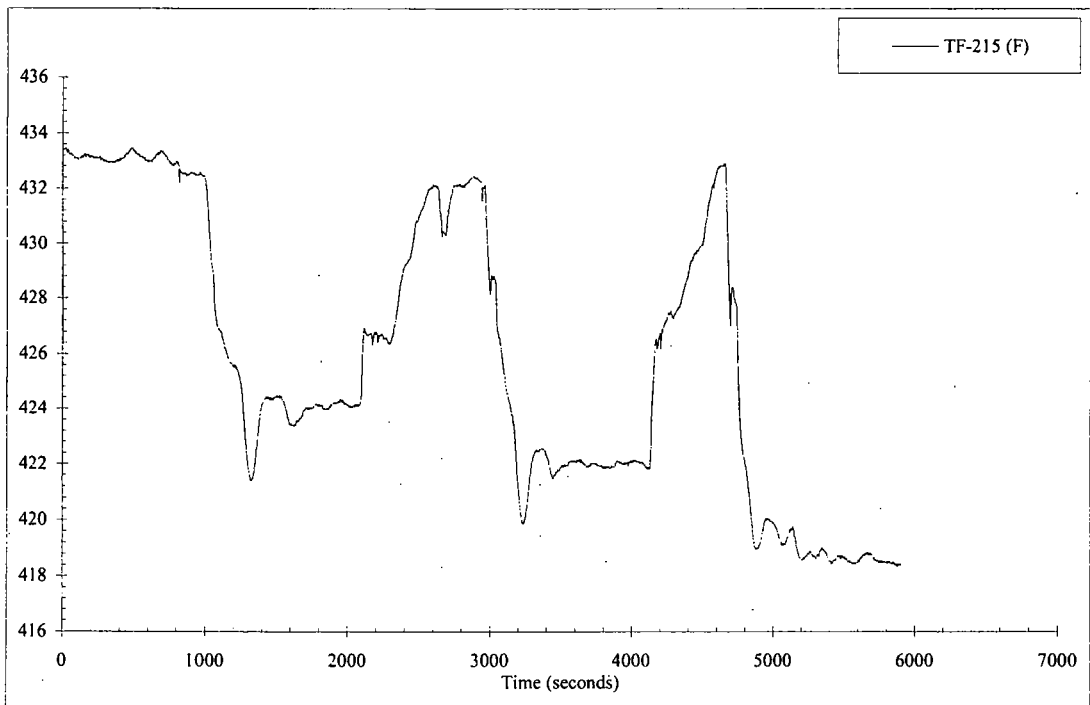
SG-1 Short Tube at Middle Inlet Side Temperature



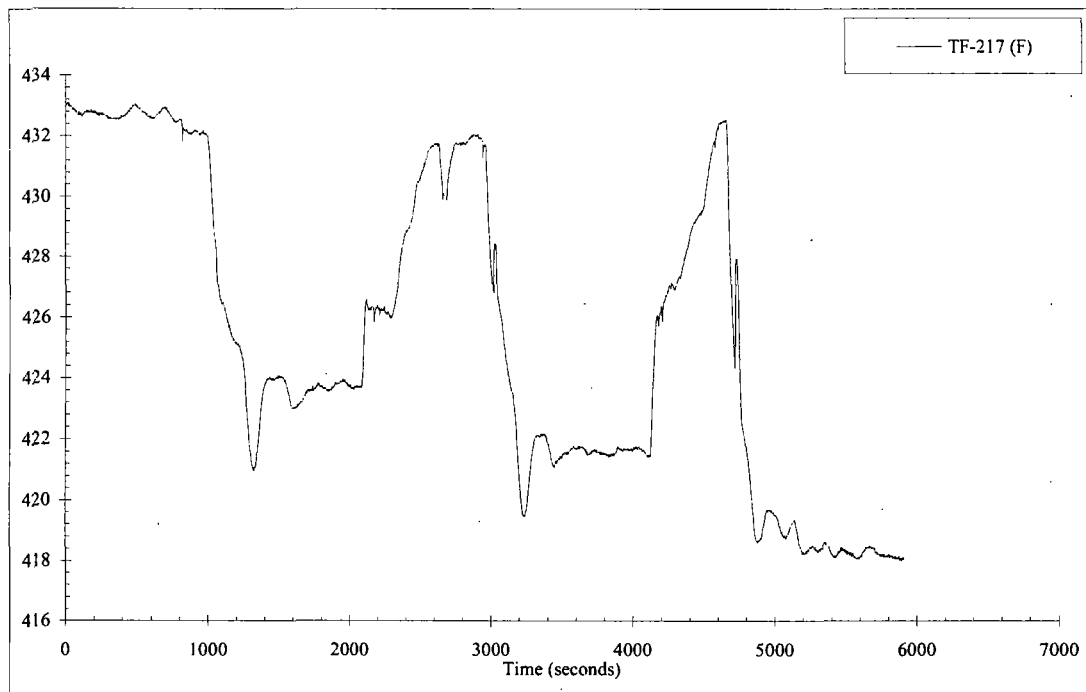
SG-1 Long Tube at Middle Outlet Temperature



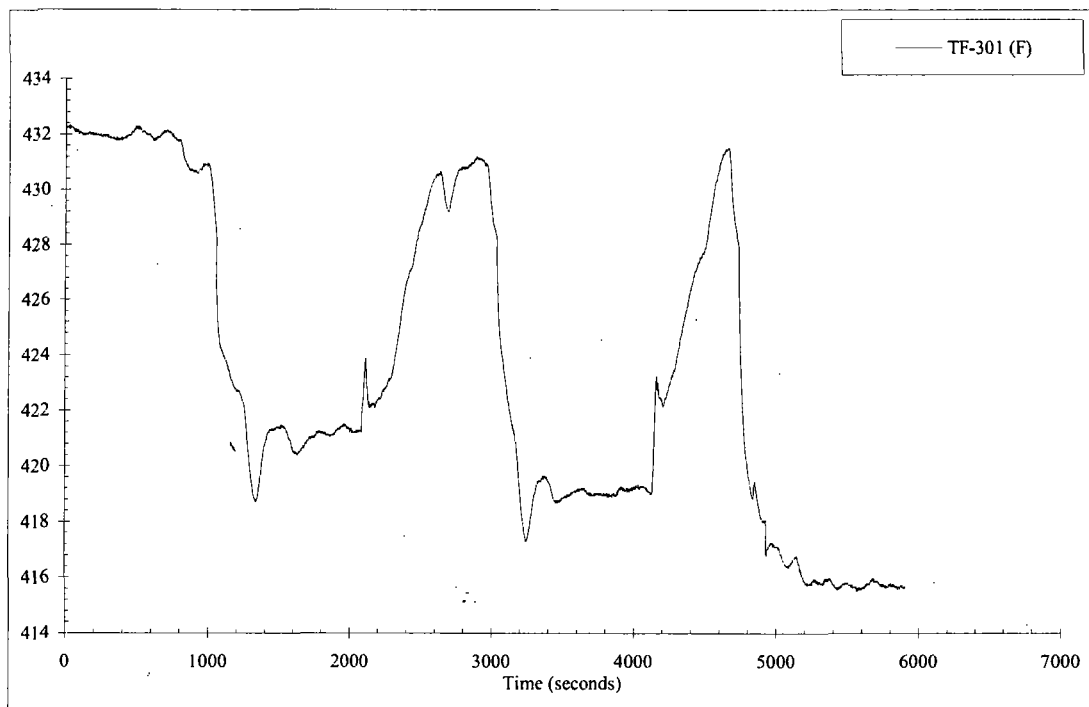
SG-1 Long Tube at Middle Inlet Temperature



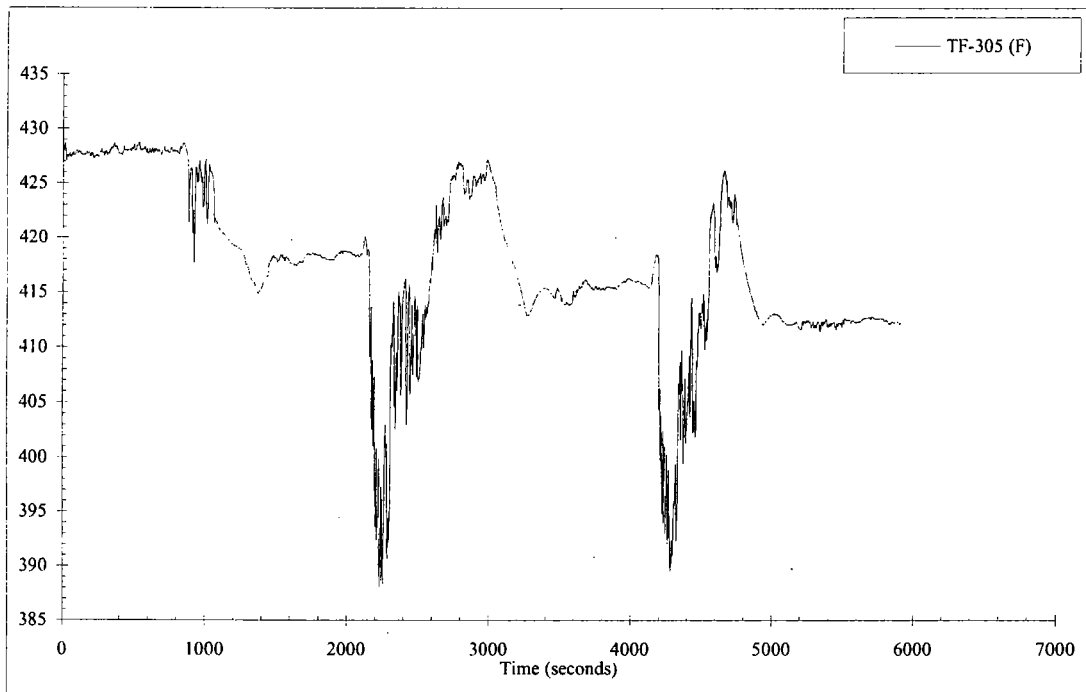
SG-1 Short Tube at Top Temperature



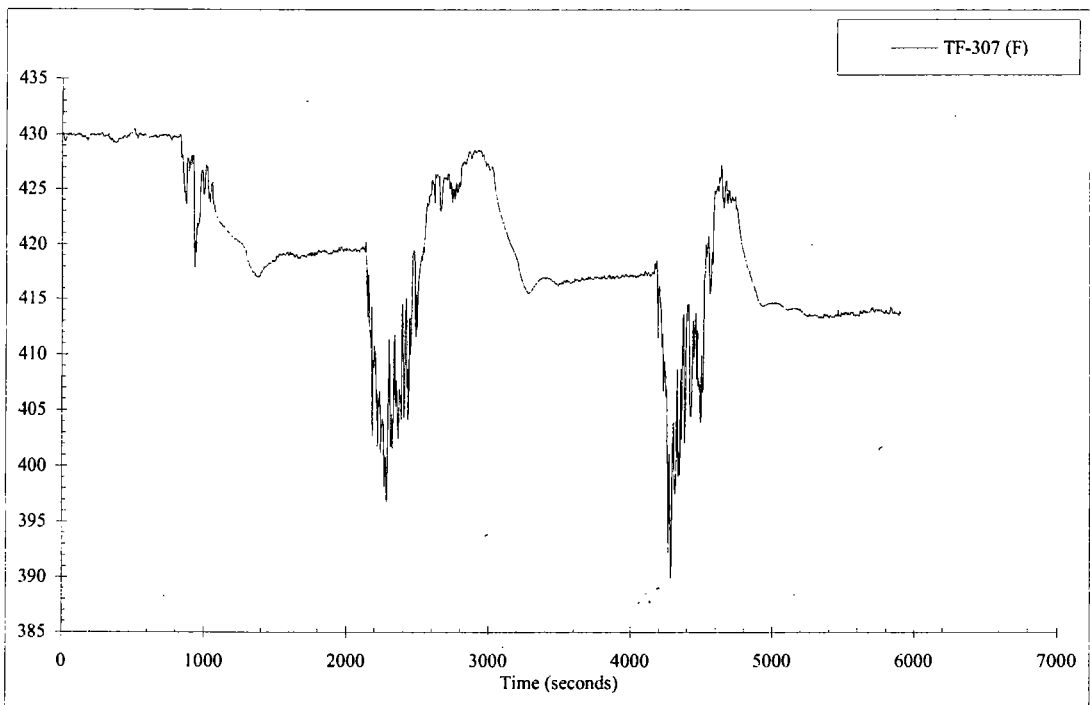
SG-1 Long Tube at Top Temperature



SG-1 Steam Temperature (SC-301)



SG-1 Downcomer HL Side Temperature



SG-1 Downcomer CL Side Temperature

Timestamp	Interval	Tagname	Description	Area	Value
12:57:27 PM	-119	TEST_SW	Facility Test Switch	Switches	In Test
12:57:27 PM	-119	dMuteSCR_Alarm	SCR Signal loss audible alarm	Status	ON
1:17:01 PM	1054	M001_HS_O	SG-1 Strm Stop HS	Switches	Open
1:17:01 PM	1054	M001_STAT	SG-1 Steam Stop	Valves	Open
1:21:42 PM	1335	MF_001	FST Fill Valve	Valves	Open
1:25:26 PM	1559	MF_001	FST Fill Valve	Valves	Closed
1:34:11 PM	2084	M001_HS_O	SG-1 Strm Stop HS	Switches	Close
1:34:11 PM	2084	M001_STAT	SG-1 Steam Stop	Valves	Closed
1:35:22 PM	2155	MF_001	FST Fill Valve	Valves	Open
1:40:35 PM	2468	MF_001	FST Fill Valve	Valves	Closed
1:40:42 PM	2475	MFP_X	Main Feed Pump	Pumps	Off
1:40:45 PM	2478	MFP_HS_R	Main Feed Pump HS	Switches	Run
1:40:45 PM	2478	MFP_HS_A	Main Feed Pump HS	Switches	Off
1:40:45 PM	2478	MFP_X	Main Feed Pump	Pumps	Running
1:50:01 PM	3034	M001_HS_O	SG-1 Strm Stop HS	Switches	Open
1:50:02 PM	3035	M001_STAT	SG-1 Steam Stop	Valves	Open
1:57:51 PM	3504	MF_001	FST Fill Valve	Valves	Open
2:01:58 PM	3751	MF_001	FST Fill Valve	Valves	Closed
2:08:28 PM	4141	M001_HS_O	SG-1 Strm Stop HS	Switches	Close
2:08:28 PM	4141	M001_STAT	SG-1 Steam Stop	Valves	Closed
2:09:59 PM	4232	MF_001	FST Fill Valve	Valves	Open
2:14:45 PM	4518	MF_001	FST Fill Valve	Valves	Closed
2:18:21 PM	4734	M001_HS_O	SG-1 Strm Stop HS	Switches	Open
2:18:22 PM	4735	M001_STAT	SG-1 Steam Stop	Valves	Open
2:26:04 PM	5197	MF_001	FST Fill Valve	Valves	Open
2:31:09 PM	5502	MF_001	FST Fill Valve	Valves	Closed

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DAS Configuration

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
DP-111	DP across Upper Core Plate	4.9931	0.9963	30	-30	Differential Pressure (in h2o)
DP-114	DP across Upper Support Plate	4.9796	0.9934	375	-375	Differential Pressure (in h2o)
DP-121	DVI-1/CL-1 Differential Pressure	4.9563	0.989	25	-25	Differential Pressure (in h2o)
DP-122	DVI-2/CL-2 Differential Pressure	4.9591	0.9931	25	-25	Differential Pressure (in h2o)
DP-123	DVI-1/CL-3 Differential Pressure	4.9743	0.9957	25	-25	Differential Pressure (in h2o)
DP-124	DVI-2/CL-4 Differential Pressure	4.9561	0.9924	25	-25	Differential Pressure (in h2o)
DP-125	HL-1 entrance losses	4.97	0.9951	30	0	Differential Pressure (in h2o)
DP-126	HL-2 entrance losses	4.9707	0.9949	30	0	Differential Pressure (in h2o)
DP-128	DVI-1 entrance losses	4.9709	0.9959	25	-25	Differential Pressure (in h2o)
DP-129	DVI-2 entrance losses	4.9736	0.9958	25	-25	Differential Pressure (in h2o)
DP-130	Upper Head Differential Pressure	4.9622	0.9941	50	-50	Differential Pressure (in h2o)
DP-201	CL-1 Differential Pressure	4.9689	0.9939	25	-25	Differential Pressure (in h2o)
DP-202	RCP-2 Differential Pressure	4.9588	0.9916	200	0	Differential Pressure (in h2o)
DP-203	RCP-1 Differential Pressure	4.9692	0.9946	27	0	Differential Pressure (psid)
DP-204	CL-2 Differential Pressure	4.9814	0.9969	25	-25	Differential Pressure (in h2o)
DP-205	RCP-3 Differential Pressure	4.978	0.995	200	0	Differential Pressure (in h2o)
DP-206	RCP-4 Differential Pressure	4.984	0.9959	200	0	Differential Pressure (in h2o)
DP-207	CL-3 Differential Pressure	4.9817	0.9967	25	-25	Differential Pressure (in h2o)
DP-208	CL-4 Differential Pressure	4.9905	0.9984	25	-25	Differential Pressure (in h2o)
DP-209	HL-1 Differential Pressure	4.9858	0.998	25	-25	Differential Pressure (in h2o)
DP-210	HL-2 Differential Pressure	4.9649	0.9933	25	-25	Differential Pressure (in h2o)
DP-211	SG-1 Short Tube Entrance Losses	4.9849	0.9979	25	0	Differential Pressure (in h2o)
DP-212	SG-2 Long Tube Exit Losses	4.9838	0.9979	25	0	Differential Pressure (in h2o)
DP-213	SG-1 Long Tube Exit Losses	4.9788	0.9965	15	-15	Differential Pressure (in h2o)
DP-214	SG-2 Long Tube Entrance Losses	4.981	0.9973	15	0	Differential Pressure (in h2o)
DP-215	Break Differential Pressure	4.9807	0.9981	500	0	Differential Pressure (psid)
DP-216	Break Differential Pressure	4.9729	0.9964	500	0	Differential Pressure (psid)
DP-217	HL-1 to CL1 Differential Pressure at SG1	4.9835	0.9981	46.83	0	Differential Pressure (in h2o)
DP-218	HL-2 to CL2 Differential Pressure at SG2	4.9889	0.9992	150	0	Differential Pressure (in h2o)
DP-219	HL-1 to CL3 Differential Pressure at SG1	4.9686	0.9949	30.95	0	Differential Pressure (in h2o)
DP-220	HL-2 to CL4 Differential Pressure at SG2	4.9627	0.9936	150	0	Differential Pressure (in h2o)
DP-221	HL-1 to CL1 Differential Pressure at Rx	4.9677	0.9951	150	0	Differential Pressure (in h2o)
DP-222	HL-2 to CL2 Differential Pressure at Rx	4.983	0.9975	150	0	Differential Pressure (in h2o)
DP-223	HL-1 to CL3 Differential Pressure at Rx	4.9915	0.9987	150	0	Differential Pressure (in h2o)
DP-224	HL-2 to CL4 Differential Pressure at Rx	4.9665	0.9944	150	0	Differential Pressure (in h2o)
DP-401	ACC-1 Injection Differential Pressure	4.979	0.9975	400	0	Differential Pressure (in h2o)
DP-402	ACC-2 Injection Differential Pressure	4.9736	0.9958	400	0	Differential Pressure (in h2o)
DP-501	CMT-1 Injection Differential Pressure	4.9675	0.9948	150	-150	Differential Pressure (in h2o)
DP-502	CMT-2 Injection Differential Pressure	4.9645	0.9947	150	-150	Differential Pressure (in h2o)
DP-503	CMT-1 Balance Line Differential Pressure	4.9858	0.998	150	-150	Differential Pressure (in h2o)
DP-504	CMT-2 Balance Line Differential Pressure	4.9955	1.0007	100	-100	Differential Pressure (in h2o)
DP-601	HL-1 to ADS4-1 Differential Pressure	4.9969	1.0008	10	0	Differential Pressure (psid)
DP-602	HL-2 to ADS4-2 Differential Pressure	4.967	0.9948	10	0	Differential Pressure (psid)
DP-603	ADS4-1 Venturi	4.9847	0.9985	100	0	Differential Pressure (in h2o)
DP-604	ADS4-2 Venturi	4.964	0.9941	100	0	Differential Pressure (in h2o)
DP-605	ADS4-1 Venturi outlet to Enlarger inlet	4.9881	0.9993	50	0	Differential Pressure (in h2o)

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DAS Configuration

DP-606	ADS4-2 Venturi outlet to Enlarger inlet	4.9857	0.9991	50	0	Differential Pressure (in h2o)
DP-611	PZR Surge Line Differential Pressure	4.9773	0.9967	25	-25	Differential Pressure (in h2o)
DP-701	IRWST-1 Injection Differential Pressure	4.9872	0.9982	30	0	Differential Pressure (psid)
DP-702	IRWST-2 Injection Differential Pressure	4.9871	0.9981	30	0	Differential Pressure (psid)
DP-905	Break Separator Entrance Differential Pressure	4.9905	0.9994	100	0	Differential Pressure (psid)
FDP-604	ADS-2 Flow Differential Pressure	4.9738	0.9961	100	0	Differential Pressure (psid)
FDP-605	ADS-1 Flow Differential Pressure	4.9896	0.9993	250	0	Differential Pressure (psid)
FDP-606	ADS-3 Flow Differential Pressure	5.0051	1.0023	100	0	Differential Pressure (psid)
FMM-001	SG-1 Feed Flow	4.9838	0.9961	6	0	Volumetric Flow Rate (gpm)
FMM-002	SG-2 Feed Flow	4.9642	0.9925	6	0	Volumetric Flow Rate (gpm)
FMM-201	CL-1 Loop Flow	4.9607	0.9921	100	-100	Volumetric Flow Rate (gpm)
FMM-202	CL-2 Loop Flow	4.9754	0.9943	100	-100	Volumetric Flow Rate (gpm)
FMM-203	CL-3 Loop Flow	4.9853	0.9974	100	-100	Volumetric Flow Rate (gpm)
FMM-204	CL-4 Loop Flow	4.9729	0.9936	100	-100	Volumetric Flow Rate (gpm)
FMM-205	DVI-1 Flow	4.9706	0.996	75	0	Volumetric Flow Rate (gpm)
FMM-206	DVI-2 Flow	4.9767	0.9969	75	0	Volumetric Flow Rate (gpm)
FMM-401	ACC-1 Injection Flow	4.9516	0.9932	40	0	Volumetric Flow Rate (gpm)
FMM-402	ACC-2 Injection Flow	4.9772	0.9965	40	0	Volumetric Flow Rate (gpm)
FMM-501	CMT-1 Injection Flow	4.9959	1.0006	75	0	Volumetric Flow Rate (gpm)
FMM-502	CMT-2 CL Balance Line Flow	4.9742	0.9994	70	0	Volumetric Flow Rate (gpm)
FMM-503	CMT-1 CL Balance Line Flow	4.9717	0.9985	75	0	Volumetric Flow Rate (gpm)
FMM-504	CMT-2 Injection Flow	4.9523	0.9925	20	0	Volumetric Flow Rate (gpm)
FMM-601	ADS1-3 Loop Seal Flow	5.0168	1.004	200	0	Volumetric Flow Rate (gpm)
FMM-602	ADS4-2 Loop Seal Flow	5.0507	1.0117	60	0	Volumetric Flow Rate (gpm)
FMM-603	ADS4-1 Loop Seal Flow	5.0571	1.0129	60	0	Volumetric Flow Rate (gpm)
FMM-701	IRWST/DVI-1 Injection Flow	4.9738	0.9954	40	0	Volumetric Flow Rate (gpm)
FMM-702	IRWST/DVI-2 Injection Flow	4.9724	0.9955	40	0	Volumetric Flow Rate (gpm)
FMM-703	IRWST Overflow	4.9663	0.9966	10	0	Volumetric Flow Rate (gpm)
FMM-801	CVSP Discharge Flow	4.9876	0.9998	8	0	Volumetric Flow Rate (gpm)
FMM-802	PRHR Inlet Flow	4.9656	0.9966	40	0	Volumetric Flow Rate (gpm)
FMM-803	RNSP to DVI-2 Flow	4.9629	0.9942	30	0	Volumetric Flow Rate (gpm)
FMM-804	PRHR Outlet Flow	4.9612	0.9963	40	0	Volumetric Flow Rate (gpm)
FMM-805	RNSP Discharge Flow	4.9711	0.9936	40	0	Volumetric Flow Rate (gpm)
FMM-901	Primary Sump-1 Recirculation Injection Flow	4.9673	0.9936	40	-40	Volumetric Flow Rate (gpm)
FMM-902	Primary Sump-2 Recirculation Injection Flow	4.9726	0.9948	40	-40	Volumetric Flow Rate (gpm)
FMM-905	Break Separator Loop Seal Flow	5.1224	1.0902	90	-90	Volumetric Flow Rate (gpm)
FVM-001	SG-1 Main Steam Flow	5.0223	1.005	100	0	Steam Flow Rate (cfm)
FVM-002	SG-2 Main Steam Flow	4.9878	0.9982	100	0	Steam Flow Rate (cfm)
FVM-003	Main Steam Total Flow	4.9815	0.9978	70	0	Steam Flow Rate (cfm)
FVM-009	SG-1 PORV Blowdown Steam Flow	4.9836	0.9967	381	0	Steam Flow Rate (cfm)
FVM-010	SG-2 PORV Blowdown Steam Flow	4.9817	0.9971	381	0	Steam Flow Rate (cfm)
FVM-601	ADS1-3 Separator Steam Flow	4.9995	1.0017	2000	0	Steam Flow Rate (cfm)
FVM-602	ADS4-2 Separator 6-inch Line Steam Flow	5.006	1.0018	2000	0	Steam Flow Rate (cfm)
FVM-603	ADS4-1 Separator 6-inch Line Steam Flow	5.0062	1.0024	1600	0	Steam Flow Rate (cfm)
FVM-604	ADS4-2 Separator 2-inch Line Steam Flow	5.0034	1.0026	348	0	Steam Flow Rate (cfm)
FVM-605	ADS4-1 Separator 2-inch Line Steam Flow	5.0037	1.0028	348	0	Steam Flow Rate (cfm)
FVM-901	BAMS HDR 6-inch Line Steam Flow	5.0021	1.0023	5000	0	Steam Flow Rate (cfm)
FVM-902	BAMS HDR 10-inch Line Steam Flow	5.01	1.0027	12500	0	Steam Flow Rate (cfm)

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FVM-903	Primary Sump Steam Exhaust Flow	4.9879	0.9949	22	0	Steam Flow Rate (cfm)
FVM-904	Break Separator 3-inch Line Steam Flow	4.9986	0.9979	400	0	Steam Flow Rate (cfm)
FVM-905	Break Separator 6-inch Line Steam Flow	5.0036	1.004	6000	0	Steam Flow Rate (cfm)
FVM-906	Break Separator 8-inch Line Steam Flow	5.0048	1.0025	4000	0	Steam Flow Rate (cfm)
HPS-201-1	CL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-201-2	CL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-201-3	CL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-202-1	CL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-202-2	CL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-202-3	CL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-203-1	CL-3 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-203-2	CL-3 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-203-3	CL-3 Fluid temperature	10	0	10	0	Voltage (V)
HPS-204-1	CL-4 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-204-2	CL-4 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-204-3	CL-4 Fluid temperature	10	0	10	0	Voltage (V)
HPS-205-1	HL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-205-2	HL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-205-3	HL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-206-1	HL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-206-2	HL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-206-3	HL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-509-1	CMT-1 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-509-2	CMT-1 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-509-3	CMT-1 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-512-1	CMT-2 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-512-2	CMT-2 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-512-3	CMT-2 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-604-1	Lower PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-604-2	Lower PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-604-3	Lower PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-606-1	ADS1-3 Common Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-606-2	ADS1-3 Common Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-606-3	ADS1-3 Common Inlet Fluid temperature	10	0	10	0	Voltage (V)
HPS-607-1	Upper PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-607-2	Upper PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-607-3	Upper PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-801-1	PRHR HX Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-801-2	PRHR HX Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-801-3	PRHR HX Inlet Fluid temperature	10	0	10	0	Voltage (V)
KW-101	Rx Heater Group 1 Power	4.3222	1.1171	472	0	Power (kW)
KW-102	Rx Heater Group 2 Power	4.1621	1.0045	486	0	Power (kW)
KW-103	Rx Heater Group 1 Power	4.8931	0.9786	496	0	Power (kW)
KW-104	Rx Heater Group 2 Power	4.912	0.9946	492	0	Power (kW)
KW-601	PZR Heater Power	4.9435	0.982	24.3	0	Power (kW)
LCT-701	IRWST Weight	4.9831	0.9976	40000	0	Mass (lbm)
LCT-901	Primary Sump Weight	4.977	0.9969	28800	0	Mass (lbm)
LCT-902	Secondary Sump Weight	4.9845	0.9983	16700	0	Mass (lbm)

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LDP-001	FST Uncompensated Water Level	5.0056	1.0017	91.88	0	Water Level (in)
LDP-101	CL to Bypass Holes Uncompensated Water Level (270)	4.9645	0.9945	5.561	0	Water Level (in)
LDP-102	CL to Bypass Holes Uncompensated Water Level (180)	4.9725	0.9963	5.938	0	Water Level (in)
LDP-103	DVI to CL Uncompensated Water Level (270)	4.9807	0.9982	11.692	0	Water Level (in)
LDP-104	DVI to CL Uncompensated Water Level (180)	4.9748	0.9992	12.376	0	Water Level (in)
LDP-105	Upper Core Plate to DVI Uncompensated Water Level (270)	5.0076	1.0058	11.929	0	Water Level (in)
LDP-106	Bottom of Core to Lower Core Plate Uncompensated Water Level (180)	4.9732	0.9985	8.198	0	Water Level (in)
LDP-107	Bottom of Core to Lower Core Plate Uncompensated Water Level (270)	4.9713	0.9958	8.223	0	Water Level (in)
LDP-108	Bottom of Core to Lower Core Plate Uncompensated Water Level (0)	4.9683	0.9953	8.562	0	Water Level (in)
LDP-109	Lower Core Plate to Mid-Core Spacer Grid Uncompensated Water Level (0)	4.984	0.9988	19.763	0	Water Level (in)
LDP-110	Mid-Core Spacer Grid to Upper-Core Spacer Grid Uncompensated Water Level (0)	4.9909	0.9991	20.02	0	Water Level (in)
LDP-112	Upper Core Plate to DVI Uncompensated Water Level (0)	4.9755	0.9963	4.696	0	Water Level (in)
LDP-113	DVI to Bottom of Upper Support Plate Uncompensated Water Level (0)	4.9849	0.9986	15.614	0	Water Level (in)
LDP-115	Upper Support Plate to Top of Rx Uncompensated Water Level (0)	4.9896	0.9996	24.28	0	Water Level (in)
LDP-116	Bottom of Rx to Bottom of Bypass Holes Uncompensated Water Level (270)	4.9638	0.9949	77.59	0	Water Level (in)
LDP-117	Upper Core Spacer Grid to DVI Uncompensated Water Level (180)	4.9838	0.9983	11.383	0	Water Level (in)
LDP-118	Lower Core Plate to Upper Core Plate Uncompensated Water Level (270)	4.9848	0.9988	39.98	0	Water Level (in)
LDP-119	Lower Core Plate to Upper Core Support Grid Uncompensated Water Level (180)	4.988	0.9996	40.26	0	Water Level (in)
LDP-127	Rx Wide Range Uncompensated Water Level	4.999	1.0007	98.97	0	Water Level (in)
LDP-138	Upper Core Spacer Grid to Bottom of Upper Support Plate Uncompensated Water Level (180)	4.9639	0.9946	39.3	0	Water Level (in)
LDP-139	Top of Lower Core Plate to Upper Core Spacer Grid Uncompensated Water Level	4.9837	0.9982	24.166	0	Water Level (in)
LDP-140	Bottom of Rx to Bottom of Flow Holes (180) Uncompensated Water Level	4.9981	1.0014	78.02	0	Water Level (in)
LDP-141	Upper Core Plate to Lower Support Plate Uncompensated Water Level	4.9843	0.9994	20.135	0	Water Level (in)
LDP-201	CL-1 Uncompensated Water Level	4.9961	1.0002	2.496	0	Water Level (in)
LDP-202	CL-2 Uncompensated Water Level	4.9924	0.9994	2.223	0	Water Level (in)
LDP-203	CL-3 Uncompensated Water Level	4.9923	0.9994	2.532	0	Water Level (in)
LDP-204	CL-4 Uncompensated Water Level	4.9594	0.9927	2.47	0	Water Level (in)
LDP-205	HL-1 Uncompensated Water Level	4.9663	0.9945	4.415	0	Water Level (in)
LDP-206	HL-2 Uncompensated Water Level	4.9653	0.9944	4.013	0	Water Level (in)
LDP-207	SG-1 to HL-1 Elbow Plenum Uncompensated Water Level	4.9779	0.9972	18.3	0	Water Level (in)
LDP-208	SG-2 to HL-2 Elbow Plenum Uncompensated Water Level	4.9825	0.9969	19.247	0	Water Level (in)
LDP-209	SG-1 to HL-1 Plenum Uncompensated Water Level	4.9954	1.0002	10.939	0	Water Level (in)
LDP-210	SG-2 to CL-4 Plenum Uncompensated Water Level	4.9677	0.9943	16.988	0	Water Level (in)
LDP-211	SG-1 to CL-3 Plenum Uncompensated Water Level	4.9613	0.993	16.793	0	Water Level (in)
LDP-212	SG-2 to CL-2 Plenum Uncompensated Water Level	4.9836	0.9982	16.772	0	Water Level (in)
LDP-213	SG-1 to CL-1 Plenum Uncompensated Water Level	4.9864	0.9978	16.747	0	Water Level (in)
LDP-214	SG-2 to HL-2 Plenum Uncompensated Water Level	4.9953	1.0002	11.571	0	Water Level (in)
LDP-215	SG-1 Long Tube to HL Uncompensated Water Level	4.99	0.9992	102.06	0	Water Level (in)
LDP-216	SG-2 Short Tube to HL Uncompensated Water Level	4.9717	0.9955	95.55	0	Water Level (in)
LDP-217	SG-1 Short Tube to HL Uncompensated Water Level	4.9618	0.9932	96.25	0	Water Level (in)
LDP-218	SG-2 Long Tube to HL Uncompensated Water Level	4.9658	0.9943	103.14	0	Water Level (in)
LDP-219	SG-1 Long Tube to CL Uncompensated Water Level	4.9867	0.9992	102.45	0	Water Level (in)
LDP-220	SG-2 Short Tube to CL Uncompensated Water Level	4.9786	0.9971	96	0	Water Level (in)
LDP-221	SG-1 Short Tube to CL Uncompensated Water Level	4.985	0.9986	95.98	0	Water Level (in)
LDP-222	SG-2 Long Tube to CL Uncompensated Water Level	4.9628	0.9947	102.71	0	Water Level (in)
LDP-301	SG-1 WR Uncompensated Water Level	5.0022	1.0006	119.25	0	Water Level (in)
LDP-302	SG-2 WR Uncompensated Water Level	4.9995	1.0003	119.02	0	Water Level (in)
LDP-303	SG-1 NR Uncompensated Water Level	4.9699	0.9934	31.81	0	Water Level (in)

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LDP-304	SG-2 NR Uncompensated Water Level	4.9748	0.995	31.52	0	Water Level (in)		
LDP-401	ACC-1 Uncompensated Water Level	4.987	0.9951	38.26	0	Water Level (in)		
LDP-402	ACC-2 Uncompensated Water Level	5.166	1.0332	38.34	0	Water Level (in)		
LDP-501	CMT-1 NR Uncompensated Water Level (Bottom)	4.9834	0.9986	5.31	0	Water Level (in)		
LDP-502	CMT-2 WR Uncompensated Water Level	5.1958	1.0396	57.5	0	Water Level (in)		
LDP-503	CMT-1 NR Uncompensated Water Level (Middle)	4.984	0.9979	46.77	0	Water Level (in)		
LDP-504	CMT-2 NR Uncompensated Water Level (Bottom)	4.9793	0.9972	5.226	0	Water Level (in)		
LDP-505	CMT-1 NR Uncompensated Water Level (Top)	4.994	1	5.486	0	Water Level (in)		
LDP-506	CMT-2 NR Uncompensated Water Level (Middle)	4.9823	0.9975	46.96	0	Water Level (in)		
LDP-507	CMT-1 WR Uncompensated Water Level	5.1887	1.0383	57.5	0	Water Level (in)		
LDP-508	CMT-2 NR Uncompensated Water Level (Top)	4.9913	0.9994	5.309	0	Water Level (in)		
LDP-609	CL-3 to CMT-1 Balance Line Uncompensated Water Level	4.9772	0.9968	78.84	0	Water Level (in)		
LDP-610	CL-1 to CMT-2 Balance Line Uncompensated Water Level	4.9653	0.9942	78.28	0	Water Level (in)		
LDP-601	PZR WR Uncompensated Water Level	5.0006	0.9991	140.47	0	Water Level (in)		
LDP-602	PZR Surge Line Uncompensated Water Level	4.9777	0.997	47.5	0	Water Level (in)		
LDP-605	PZR Upper Surge Line Pipe Uncompensated Water Level	4.9735	0.9963	3.533	0	Water Level (in)		
LDP-606	PZR Surge Line Pipe Level at PZR Inlet Uncompensated Water Level	4.9724	0.9958	18.696	0	Water Level (in)		
LDP-607	PZR Middle Surge Line Pipe Uncompensated Water Level	4.9737	0.996	4.127	0	Water Level (in)		
LDP-608	PZR Lower Surge Line Pipe Uncompensated Water Level	4.9731	0.9964	3.82	0	Water Level (in)		
LDP-609	PZR Surge Line Pipe Uncompensated Water Level at HL-2	4.996	1.0011	14.717	0	Water Level (in)		
LDP-610	ADS1-3 Separator Uncompensated Water Level	5.193	1.0399	45.24	0	Water Level (in)		
LDP-611	ADS4-1 Separator Uncompensated Water Level	5.1628	1.0342	55.97	0	Water Level (in)		
LDP-612	ADS4-2 Separator Uncompensated Water Level	5.1859	1.0386	56.6	0	Water Level (in)		
LDP-701	IRWST Uncompensated Water Level	5.0202	1.0048	115.8	0	Water Level (in)		
LDP-801	PRHR HX Inlet Head Uncompensated Water Level	4.9945	1.0013	6.971	0	Water Level (in)		
LDP-802	PRHR HX WR Uncompensated Water Level	4.9871	0.9998	57.08	0	Water Level (in)		
LDP-901	Primary Sump Uncompensated Water Level	5.0016	1.0015	104.36	0	Water Level (in)		
LDP-902	Secondary Sump Uncompensated Water Level	5.0018	1.0007	102.56	0	Water Level (in)		
LDP-903	CRT Uncompensated Water Level	5.1669	1.0346	32.358	0	Water Level (in)		
LDP-905	Break Separator Uncompensated Water Level	5.1788	1.0378	130.68	0	Water Level (in)		
LT-120	Rx Vessel Capacitance Probe Water Level	5.0053	1.0042	99	50	Water Level (in)		
PT-001	MFP Discharge Pressure	5.0658	1.0121	600	0	Pressure (psig)		
PT-002	MS Header Pressure	4.9759	0.9962	500	0	Pressure (psig)		
PT-003	Lab Barometer	4.9656	0.9944	20	10	Pressure (psia)		
PT-009	SG-1 PORV Blowdown Pressure	4.9816	0.9983	300	0	Pressure (psig)		
PT-010	SG-2 PORV Blowdown Pressure	4.9924	1.0004	300	0	Pressure (psig)		
PT-101	CL-1 Pressure at Rx Flange	4.9877	0.9986	500	0	Pressure (psig)		
PT-102	CL-2 Pressure at Rx Flange	4.9706	0.9958	10	0	Pressure (psig)		
PT-103	CL-3 Pressure at Rx Flange	4.9646	0.9946	10	0	Pressure (psig)		
PT-104	CL-4 Pressure at Rx Flange	4.9882	0.9988	500	0	Pressure (psig)		
PT-107	Rx Upper Head Pressure	5.0478	1.0096	500	0	Pressure (psig)		
PT-108	Bottom of Rx Pressure	4.9637	0.9938	500	0	Pressure (psig)		
PT-109	DVI-1 Pressure at Rx Flange	4.9874	0.998	500	0	Pressure (psig)		
PT-110	DVI-2 Pressure at Rx Flange	4.9825	0.9984	10	0	Pressure (psig)		
PT-111	Rx Annular Pressure at Flow Bypass Holes	4.9886	0.9982	500	0	Pressure (psig)		
PT-112	Rx Annular Pressure at Bottom of Rx	4.977	0.9958	10	0	Pressure (psig)		
PT-113	Rx Pressure Below Mid-Core Spacer Grid	4.9616	0.9921	500	0	Pressure (psig)		
PT-201	SG-1 Long Tube Pressure (Top)	4.9935	1.0008	500	0	Pressure (psig)		

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PT-202	HL-2 Pressure at SG-2 Flange	4.9841	0.9978	500	0	Pressure (psig)
PT-203	CL Break Pressure at Break Valve	4.988	0.9982	500	0	Pressure (psig)
PT-204	SG-2 Long Tube Pressure (Top)	4.9974	1.0005	500	0	Pressure (psig)
PT-205	HL-1 Pressure at SG-1 Flange	4.9838	0.9988	400	0	Pressure (psig)
PT-206	HL Break Pressure at Break Valve	4.9869	0.9982	500	0	Pressure (psig)
PT-301	SG-1 Pressure	5.0617	1.0123	500	0	Pressure (psig)
PT-302	SG-2 Pressure	5.1023	1.0219	500	0	Pressure (psig)
PT-401	ACC-1 Pressure	4.9908	0.9993	300	0	Pressure (psig)
PT-402	ACC-2 Pressure	4.9802	0.9975	300	0	Pressure (psig)
PT-501	CMT-1 Pressure	4.982	0.9979	300	0	Pressure (psig)
PT-502	CMT-2 Pressure	4.9869	0.998	500	0	Pressure (psig)
PT-602	PZR NR Pressure	4.9747	0.9988	400	300	Pressure (psig)
PT-603	PZR NR Pressure	4.9616	0.9944	10	0	Pressure (psig)
PT-604	PZR WR Pressure	4.9794	0.9942	500	0	Pressure (psig)
PT-605	ADS1-3 Separator Pressure	4.9725	0.9966	100	0	Pressure (psig)
PT-606	IRWST Sparger Line Pressure	4.9653	0.995	100	0	Pressure (psig)
PT-610	ADS4-2 Separator Pressure	4.9845	0.9983	10	0	Pressure (psig)
PT-611	ADS4-1 Separator Pressure	4.9806	0.9977	10	0	Pressure (psig)
PT-701	IRWST Pressure	5.0436	1.0087	15	0	Pressure (psig)
PT-801	CVSP Discharge Pressure	4.9909	0.9993	500	0	Pressure (psig)
PT-802	RNSP Discharge Pressure	4.9768	0.9962	250	0	Pressure (psig)
PT-901	Primary Sump Pressure	4.9659	0.9947	10	0	Pressure (psig)
PT-902	BAMS Header Pressure	4.9988	1.0013	16	0	Pressure (psig)
PT-905	Break Separator Pressure	5.0265	1.0067	20	0	Pressure (psig)
TF-005	Lab Ambient Temperature at Ground Level	1000	0	1000	0	Fluid Temperature (F)
TF-006	Lab Ambient Temperature at Second Level	1000	0	1000	0	Fluid Temperature (F)
TF-007	Lab Ambient Temperature at Third Level	1000	0	1000	0	Fluid Temperature (F)
TF-009	SG-1 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-010	SG-2 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-101	CL-3 Temperature (SC-101)	450	40	450	40	Fluid Temperature (F)
TF-101-1.3D-2	CL-1 Downcomer Temperature at 1.3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-1	CL-1 Downcomer Temperature at 2D, 120 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-2	CL-1 Downcomer Temperature at 2D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-3	CL-1 Downcomer Temperature at 2D, 150 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-1	CL-1 Downcomer Temperature at 3D, 104 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-2	CL-1 Downcomer Temperature at 3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-3	CL-1 Downcomer Temperature at 3D, 166 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-1	CL-1 Downcomer Temperature at 4D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-2	CL-1 Downcomer Temperature at 4D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-1	CL-1 Downcomer Temperature at 8D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-2	CL-1 Downcomer Temperature at 8D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102	CL-4 Temperature (SC-102)	450	40	450	40	Fluid Temperature (F)
TF-102-1.3D-2	CL-2 Downcomer Temperature at 1.3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-1	CL-2 Downcomer Temperature at 2D, 210 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-2	CL-2 Downcomer Temperature at 2D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-3	CL-2 Downcomer Temperature at 2D, 240 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-1	CL-2 Downcomer Temperature at 3D, 194 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-2	CL-2 Downcomer Temperature at 3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)

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TF-102-3D-3	CL-2 Downcomer Temperature at 3D, 256 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-4D-2	CL-2 Downcomer Temperature at 4D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-1	CL-2 Downcomer Temperature at 8D, 180 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-2	CL-2 Downcomer Temperature at 8D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-1.3D-2	CL-3 Downcomer Temperature at 1.3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-1	CL-3 Downcomer Temperature at 2D, 30 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-2	CL-3 Downcomer Temperature at 2D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-3	CL-3 Downcomer Temperature at 2D, 60 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-1	CL-3 Downcomer Temperature at 3D, 14 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-2	CL-3 Downcomer Temperature at 3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-3	CL-3 Downcomer Temperature at 3D, 76 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-4D-2	CL-3 Downcomer Temperature at 4D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-1	CL-3 Downcomer Temperature at 8D, 0 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-2	CL-3 Downcomer Temperature at 8D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-1.3D-2	CL-4 Downcomer Temperature at 1.3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-1	CL-4 Downcomer Temperature at 2D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-2	CL-4 Downcomer Temperature at 2D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-3	CL-4 Downcomer Temperature at 2D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1	CL-4 Downcomer Temperature at 3D, 284 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1.5	CL-4 Downcomer Temperature at 3D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2	CL-4 Downcomer Temperature at 3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2.5	CL-4 Downcomer Temperature at 3D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-3	CL-4 Downcomer Temperature at 3D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1	CL-4 Downcomer Temperature at 4D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.3	CL-4 Downcomer Temperature at 4D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.6	CL-4 Downcomer Temperature at 4D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2	CL-4 Downcomer Temperature at 4D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.3	CL-4 Downcomer Temperature at 4D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.6	CL-4 Downcomer Temperature at 4D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1	CL-4 Downcomer Temperature at 8D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.3	CL-4 Downcomer Temperature at 8D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.6	CL-4 Downcomer Temperature at 8D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2	CL-4 Downcomer Temperature at 8D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.3	CL-4 Downcomer Temperature at 8D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.6	CL-4 Downcomer Temperature at 8D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-105	CL-1 Temperature (SC-105)	450	40	450	40	Fluid Temperature (F)
TF-106	CL-2 Temperature (SC-106)	450	40	450	40	Fluid Temperature (F)
TF-107	CL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-108	CL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-113	DVI-1/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-114	DVI-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-115	DVI-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-116	DVI-2/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-118	Lower Rx Vessel Layer Y-Y at 30 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-120	Top of Rx at 8.5 inches & 350 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-126	Lower Rx Vessel Layer A-A at 225 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-127	Lower Rx Vessel Layer A-A at 315 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-128	Lower Rx Vessel Layer C-C at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-129	Lower Rx Vessel Layer C-C at 32 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-130	Lower Rx Vessel Layer G-G at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-131	Lower Rx Vessel Layer G-G at 11.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-132	Upper Rx Vessel Layer F-F at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-133	Upper Rx Vessel Layer F-F at 8 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-134	Upper Rx Vessel Layer E-E at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-135	Upper Rx Vessel Layer E-E at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-140	HL-2 Temperature at Rx Flange (SC-140)	450	40	450	40	Fluid Temperature (F)
TF-141	HL-1 Temperature at Rx Flange (SC-141)	450	40	450	40	Fluid Temperature (F)
TF-142	HL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-143	HL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-147	Upper Rx Vessel Layer I-I at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-148	Upper Rx Vessel Layer I-I at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-149	Upper Rx Vessel Layer H-H at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-150	Upper Rx Vessel Layer H-H at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-151	Upper Rx Vessel Layer E-E at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-152	Upper Rx Vessel Layer E-E at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-153	Upper Rx Vessel Layer F-F at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-154	Upper Rx Vessel Layer F-F at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-155	Lower Rx Vessel Layer G-G at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-156	Lower Rx Vessel Layer G-G at 191.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-157	Lower Rx Vessel Layer C-C at 212 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-158	Lower Rx Vessel Layer C-C at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-162	Lower Rx Vessel Layer A-A at 45 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-163	Lower Rx Vessel Layer A-A at 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-164	Upper Rx Vessel Layer H-H at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-165	Upper Rx Vessel Layer H-H at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-166	Upper Rx Vessel Layer I-I at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-167	Rx Heater Rod B2-319 at 40.13 inches	1000	0	1000	0	Fluid Temperature (F)
TF-168	Upper Rx Vessel Layer K-K at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-169	Upper Rx Vessel Layer M-M at 90 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-170	Upper Rx Vessel Layer M-M at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-171	Top of Rx Down to within 0.50 inches of Upper Support Plate Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-172	Lower Rx Vessel Layer AA-AA at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-173	Lower Rx Vessel Layer AA-AA at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-201	CL-1 at RCP-1 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-202	CL-2 at RCP-2 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-203	CL-3 at RCP-3 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-204	CL-4 at RCP-4 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-205	HL-1 Temperature at SG-1 Head (SC-205)	450	40	450	40	Fluid Temperature (F)
TF-206	HL-2 Temperature at SG-2 Head (SC-206)	450	40	450	40	Fluid Temperature (F)
TF-207	SG-1 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-208	SG-2 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-209	SG-1 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-210	SG-2 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-211	SG-1 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-212	SG-2 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-213	SG-1 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-214	SG-2 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-215	SG-1 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-216	SG-2 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-217	SG-1 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-218	SG-2 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-221	CL-3 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-222	CL-4 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-223	CL-3 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-224	CL-4 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-225	CL-3 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-226	CL-4 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-227	CL-3 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-228	CL-4 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-229	CL-3 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-230	CL-4 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-231	CL-3 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-232	CL-4 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-1	CL-1 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-2	CL-1 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-3	CL-1 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-1	CL-2 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-2	CL-2 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-3	CL-2 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-1	CL-3 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-2	CL-3 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-3	CL-3 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-1	CL-4 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-2	CL-4 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-3	CL-4 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-255	CL-1 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-256	CL-2 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-257	CL-3 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-258	CL-4 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-301	SG-1 Steam Temperature (SC-301)	450	40	450	40	Fluid Temperature (F)
TF-305	SG-1 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-306	SG-2 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-307	SG-1 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-308	SG-2 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-310	SG-2 Steam Temperature (SC-310)	450	40	450	40	Fluid Temperature (F)
TF-311	SG-1 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-312	SG-2 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-401	ACC-1 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-402	ACC-2 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-403	ACC-1 N2Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-404	ACC-2 N2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-405	ACC-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-406	ACC-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-501	CMT-1 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-502	CMT-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-503	CMT-1 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-504	CMT-2 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-505	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-506	CMT-2 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-507	CMT-1 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-508	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-509	CMT-1 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-510	CMT-2 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-511	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-512	CMT-2 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-513	CMT-1 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-514	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-515	CMT-1 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-516	CMT-2 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-517	CMT-1 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-518	CMT-2 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-519	CMT-1 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-520	CMT-2 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-521	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-522	CMT-2 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-523	CMT-1 Long T/C Rod at 49.05 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-524	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-525	CMT-1 at 1/2 Upper-Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-526	CMT-2 SPARGER 2\3 TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-527	CMT-1 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-528	CMT 2\3 HEAD TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-529	CMT-1 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-530	CMT-2 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-531	CMT-1 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-532	CMT-2 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-533	CMT-1 CL Balance Line at CL-3 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-535	CMT-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-536	CMT-2 CL Balance Line at CL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-537	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-538	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-539	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-540	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-541	CMT-1 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-542	CMT-2 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-543	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-544	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-546	CMT-2 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-547	CMT-1 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-548	CMT-2 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-549	CMT-1 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-550	CMT-2 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-551	CMT-1 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-552	CMT-2 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-553	CMT-1 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-554	CMT-2 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-555	CMT-1 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-556	CMT-2 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-557	CMT-1 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-558	CMT-2 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-559	CMT-1 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-560	CMT-2 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-561	CMT-1 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-562	CMT-2 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-563	CMT-1 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-564	CMT-2 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-601	PZR Surge Line at PZR Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-602	ADS1-3 Common Line at PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-603	PZR Surge Line at HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-605	PZR Water Space Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-608	PZR Temperature (SC-608)	450	40	450	40	Fluid Temperature (F)
TF-609	ADS4-1 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-610	ADS4-2 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-614	PZR Steam Vent Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-615	ADS1-3 Common Line From PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-616	ADS1-3 Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-617	ADS1-3 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-618	ADS4-2 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-619	ADS4-1 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-620	ADS4-2 Inlet From HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-621	ADS4-1 Inlet From HL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-622	ADS4-2 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-623	ADS4-1 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-701	IRWST/PRHR T/C Rod at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-702	IRWST/PRHR T/C Rod at 7.98 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-703	IRWST/PRHR T/C Rod at 15.97 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-704	IRWST/PRHR T/C Rod at 25.85 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-705	IRWST/PRHR T/C Rod at 35.73 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-706	IRWST/PRHR T/C Rod at 45.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-707	IRWST/PRHR T/C Rod at 55.49 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-708	IRWST/PRHR T/C Rod at 65.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-709	IRWST/PRHR T/C Rod at 75.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-710	IRWST/PRHR T/C Rod at 86.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-711	IRWST/PRHR T/C Rod at 97.47 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-712	IRWST/PRHR T/C Rod at 108.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-713	IRWST Discharge to DVI-01 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-714	IRWST Discharge to DVI-02 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-715	IRWST Sparger T/C Rod at 8.97 inches Temperature (SC-715)	1000	0	1000	0	Fluid Temperature (F)
TF-716	IRWST Sparger T/C Rod at 36.63 inches Temperature	240	40	240	40	Fluid Temperature (F)
TF-717	IRWST Sparger T/C Rod at 66.34 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-718	IRWST Sparger T/C Rod at 98.45 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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TF-719	IRWST Sparger Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-720	IRWST/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-721	IRWST/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-722	IRWST Steam Exhaust Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-723	IRWST/Primary Sump Overflow Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-801	CVSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-802	RNSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-803	PRHR HX Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-804	PRHR HX Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-805	PRHR HX Long Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-806	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-808	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-809	PRHR HX Long Tube at Center Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-810	PRHR HX Short Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-811	PRHR HX Long Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-812	PRHR HX Outlet Head Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-813	RNSP Discharge to DVI-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-814	RNSP Discharge to DVI-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-901	Primary Sump Inlet from Fill Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-902	Secondary Sump Temperature (SC-902)	240	40	240	40	Fluid Temperature (F)
TF-903	Primary Sump Temperature (SC-903)	240	40	240	40	Fluid Temperature (F)
TF-904	Primary Sump/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-905	Primary Sump at Secondary Sump Crossover Level Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-906	Primary Sump Exhaust Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-907	Primary Sump at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-908	Break Separator Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-909	Primary Sump/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-910	CRP Discharge to Primary Sump Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-911	CRP Discharge to IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-912	Break Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-913	Break Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-914	Condensate Return Tank Temperature (SC-914)	200	40	200	40	Fluid Temperature (F)
TF-915	Break Separator 6-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-916	BAMS Header 10-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-917	BAMS Header Temperature (SC-917)	240	40	240	40	Fluid Temperature (F)
TF-918	Break Separator 8-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TH-103	Rx Heater Rod Temperature (SCTH-101-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-211	Rx Heater Rod Temperature (SCTH-103-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-305	Rx Heater Rod Temperature (SCTH-304-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-309	Rx Heater Rod Temperature (SCTH-102-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-401	Rx Heater Rod Temperature (SCTH-104-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-507	Rx Heater Rod Temperature (SCTH-314-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-601	PZR Heater Rod #1	1000	0	1000	0	Internal Rod Temperature (F)
TH-602	PZR Heater Rod #2	1000	0	1000	0	Internal Rod Temperature (F)
TH-603	PZR Heater Rod #3	1000	0	1000	0	Internal Rod Temperature (F)
TH-604	PZR Heater Rod #4	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-1	Core Thermocouple Rod D-001 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-2	Core Thermocouple Rod D-001 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)

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TR-001-3	Core Thermocouple Rod D-001 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-4	Core Thermocouple Rod D-001 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-5	Core Thermocouple Rod D-001 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-6	Core Thermocouple Rod D-001 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-1	Core Thermocouple Rod D-303 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-2	Core Thermocouple Rod D-303 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-3	Core Thermocouple Rod D-303 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-4	Core Thermocouple Rod D-303 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-5	Core Thermocouple Rod D-303 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-6	Core Thermocouple Rod D-303 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-1	Core Thermocouple Rod E-308 at 22.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-2	Core Thermocouple Rod E-308 at 34.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-3	Core Thermocouple Rod E-308 at 46.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-4	Core Thermocouple Rod D-001 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-5	Core Thermocouple Rod D-001 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-6	Core Thermocouple Rod D-303 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-1	Core Thermocouple Rod D-313 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-2	Core Thermocouple Rod D-313 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-3	Core Thermocouple Rod D-313 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-4	Core Thermocouple Rod D-313 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-5	Core Thermocouple Rod D-313 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-6	Core Thermocouple Rod D-313 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-1	Core Thermocouple Rod F-318 at 28.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-2	Core Thermocouple Rod F-318 at 40.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-3	Core Thermocouple Rod F-318 at 51.86 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-4	Core Thermocouple Rod D-303 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-5	Core Thermocouple Rod D-313 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-6	Core Thermocouple Rod D-313 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TW-104-1.5D-2	CL-4 Downcomer Wall Temperature at 1.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-2	CL-4 Downcomer Wall Temperature at 3.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-3	CL-4 Downcomer Wall Temperature at 3.5D, 345 degrees	1000	0	1000	0	Wall Temperature (F)
TW-201	SG-1 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-202	SG-2 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-203	SG-1 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-204	SG-2 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-205	SG-1 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-206	SG-2 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-208	SG-2 Long Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-209	SG-1 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-210	SG-2 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-601	ADS1-3 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-602	ADS4-2 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-603	ADS4-1 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-801	PRHR HX Long Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-802	PRHR HX Short Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-803	PRHR HX Long Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-804	PRHR HX Short Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-805	PRHR HX Short Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)

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TW-806	PRHR HX Long Tube Upper Mid-piece
TW-807	PRHR HX Short Tube Inlet
TW-808	PRHR HX Long Tube Inlet
TW-905	Break Separator Wall Temperature
DASRunning	DSC Engine is running, but not necessarily logging data
DASLogging	DSC Engine is logging data to the Citadel database
FVM-004	Catch Tank Steam Flow Rate
PT-004	Temp Steam Pressure for FVM-002

DAS Configuration

1000	0	1000	0	Wall Temperature (F)
1000	0	1000	0	Wall Temperature (F)
1000	0	1000	0	Wall Temperature (F)
1000	0	1000	0	Wall Temperature (F)
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
4.9885	1.001	70	0	Steam Flow Rate (cfm)
5.0026	1.0016	400	0	Pressure (psig)

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DEPARTMENT OF NUCLEAR ENGINEERING &
RADIATION HEALTH PHYSICS

**ADVANCED THERMAL HYDRAULIC
RESEARCH LABORATORY**

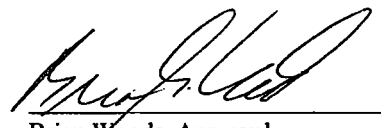
**STEAM GENERATOR U-TUBE CONDENSATION
TEST @ 50 PSIG**

NRC-COND-06

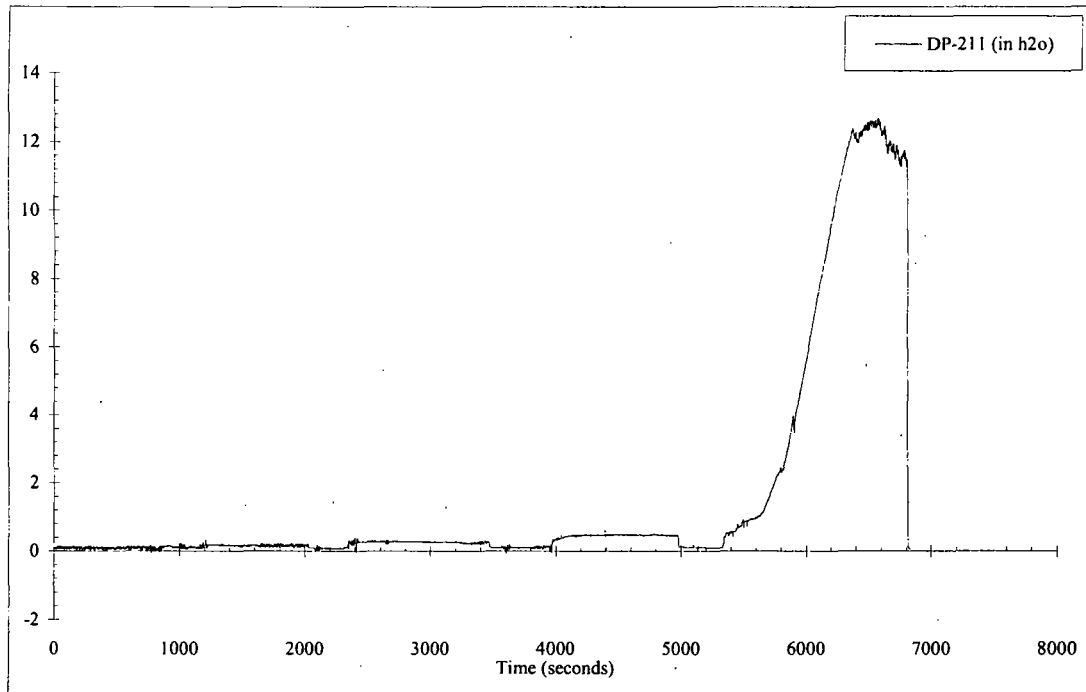
Revision 0

 3/07/07

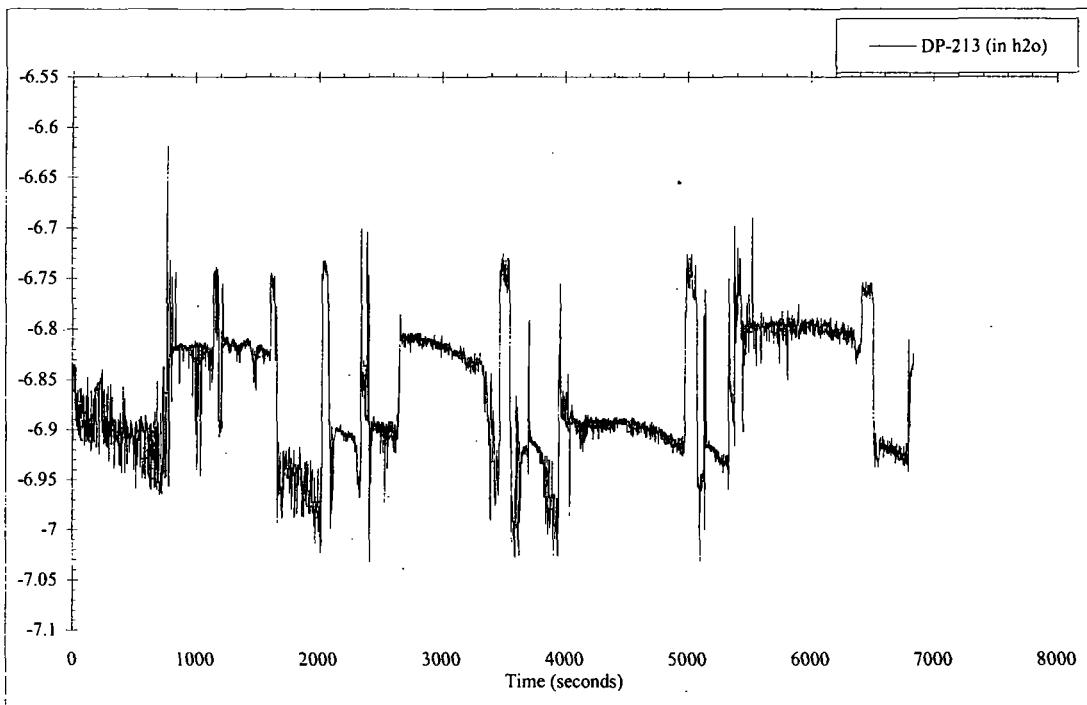
John Groome, Originator Date
Facility Operations Manager
Research Assistant

 3/7/07

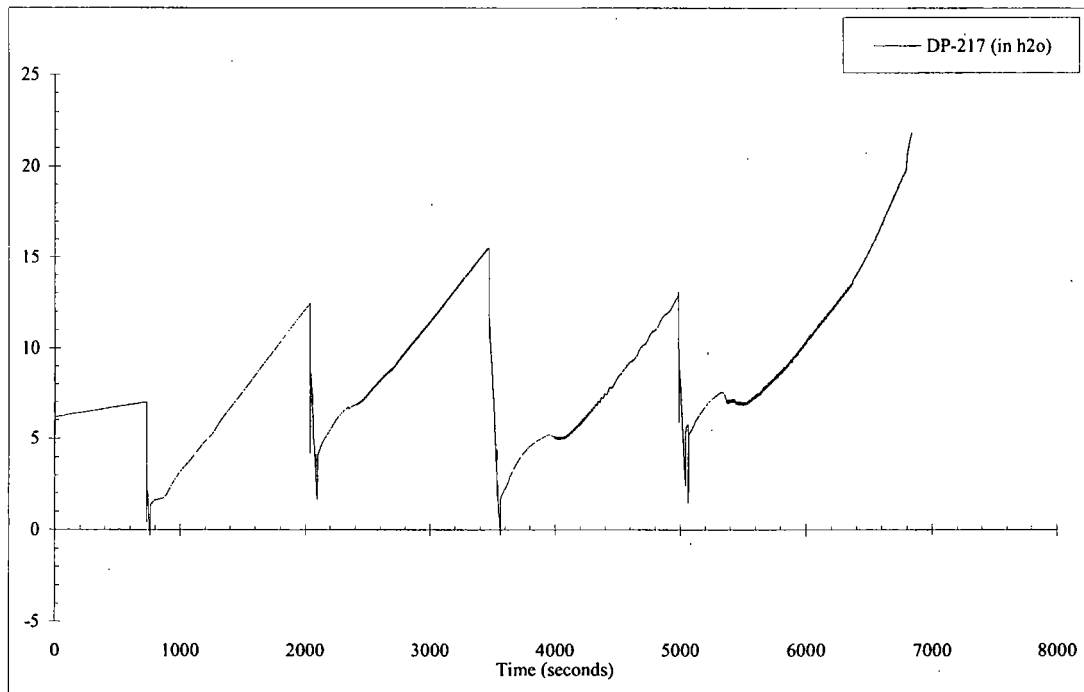
Brian Woods, Approval Date
Program Manager
Assistant Professor



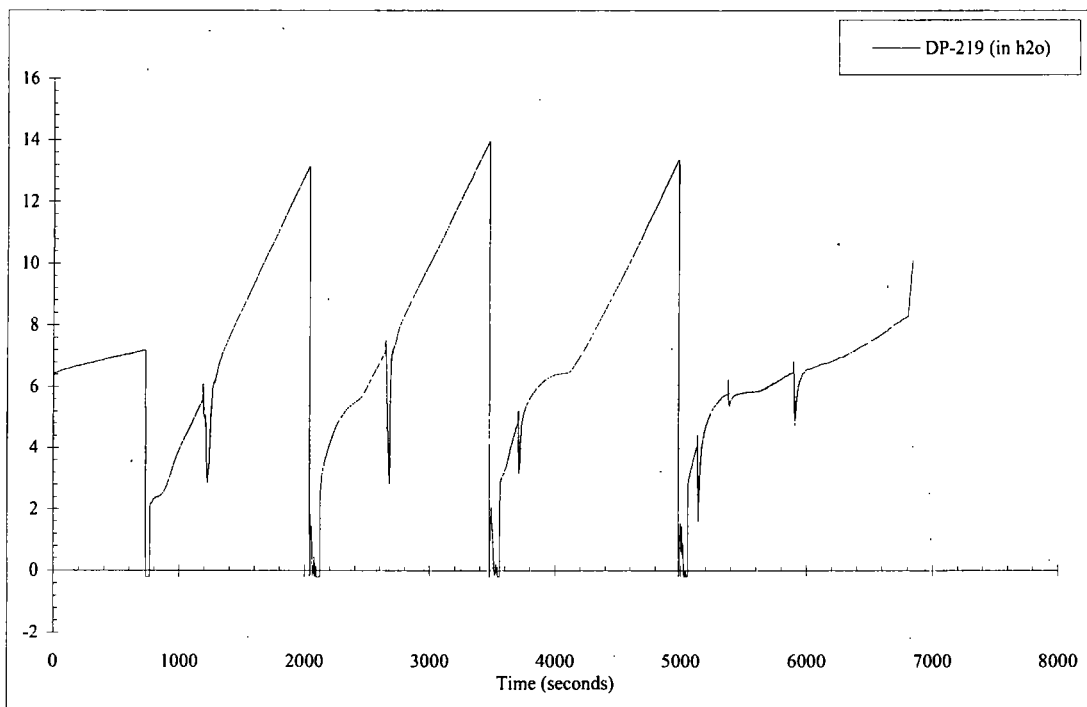
SG-1 Short Tube Entrance Losses



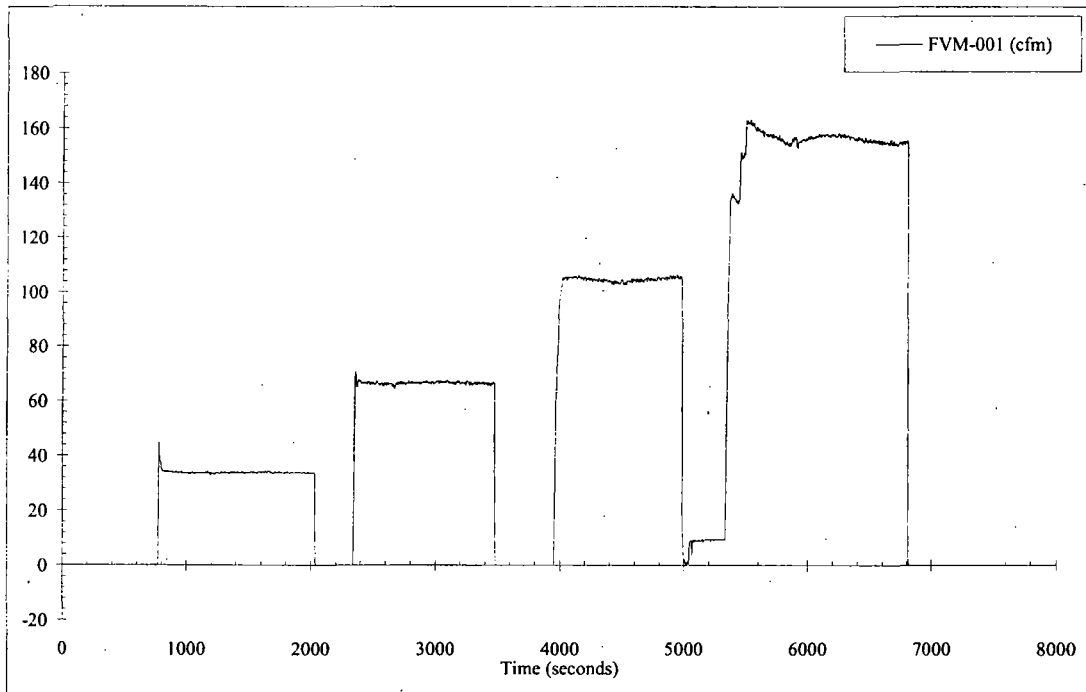
SG-1 Long Tube Exit Losses



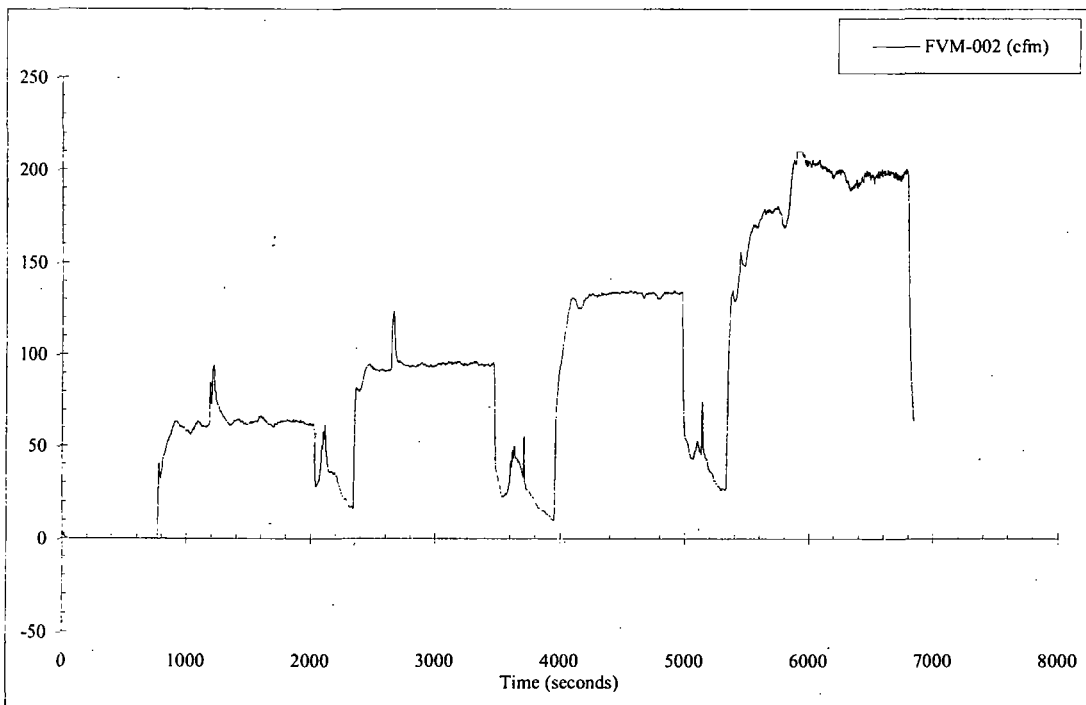
Separator Uncompensated Water Level



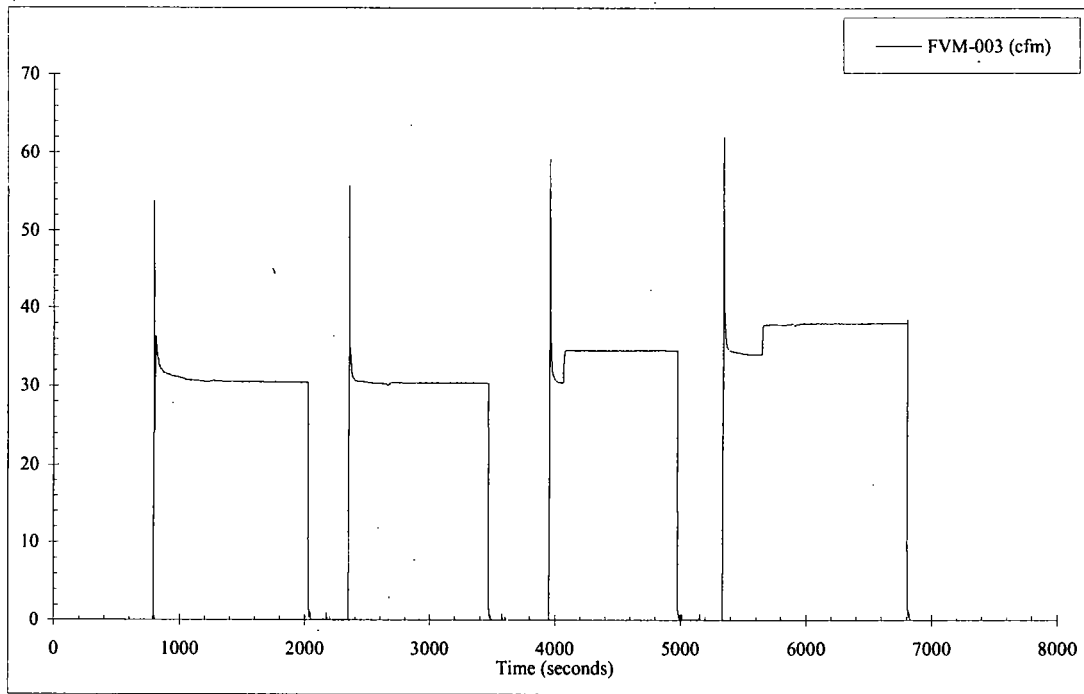
Catch Tank Uncompensated Water Level



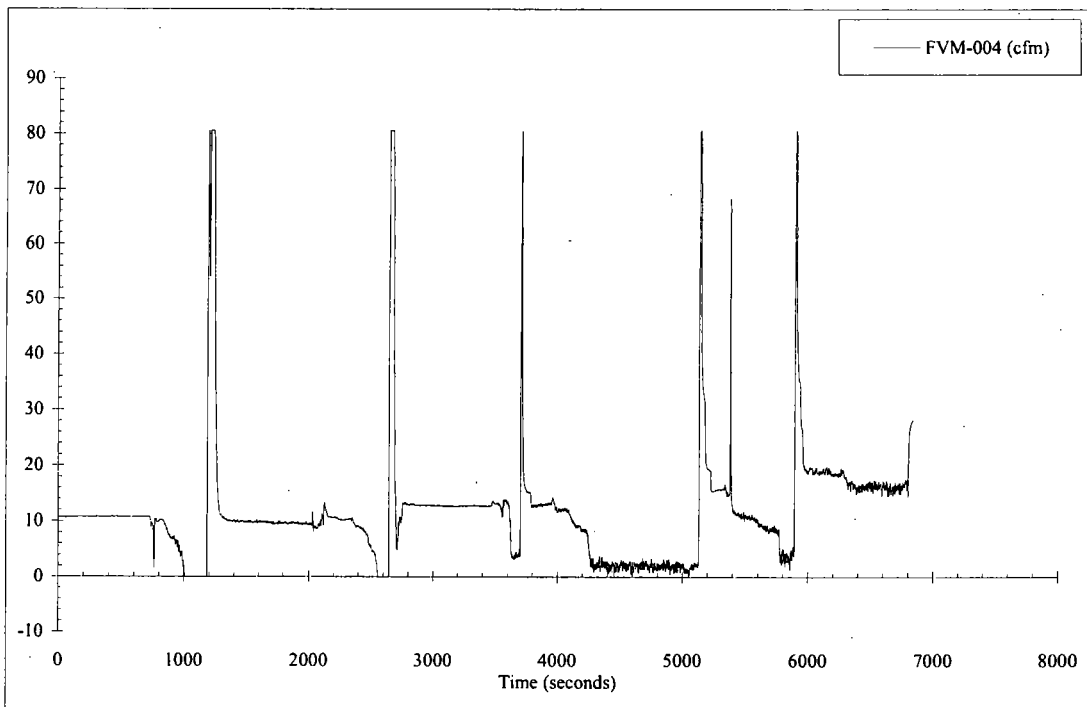
Separator Outlet Steam Flowrate



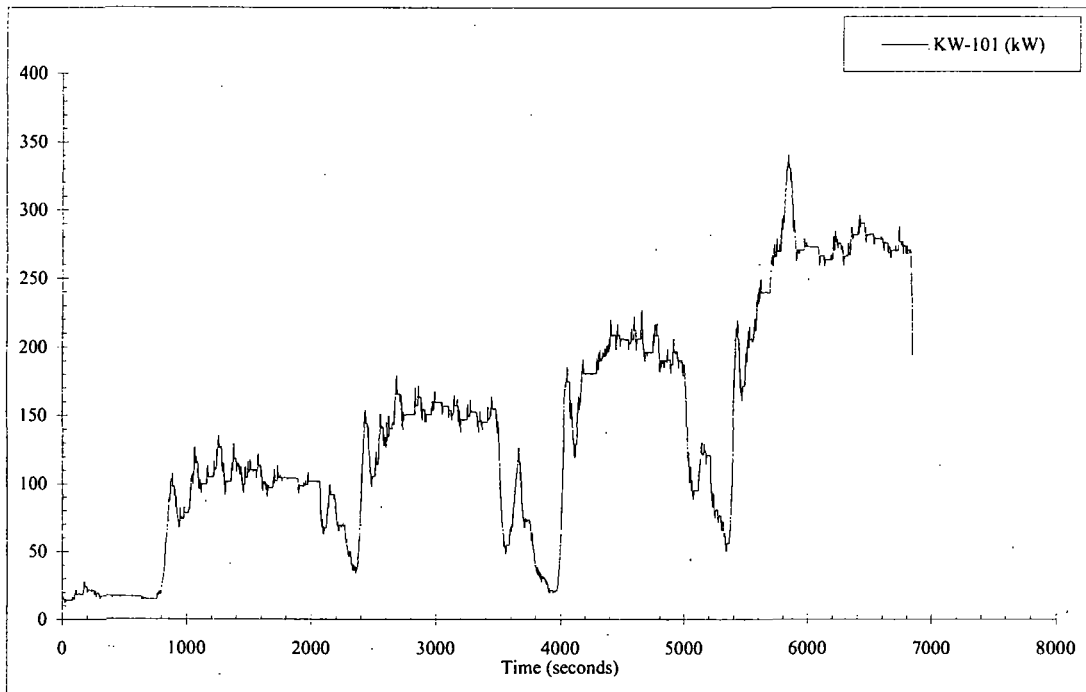
SG-2 Main Steam Flow



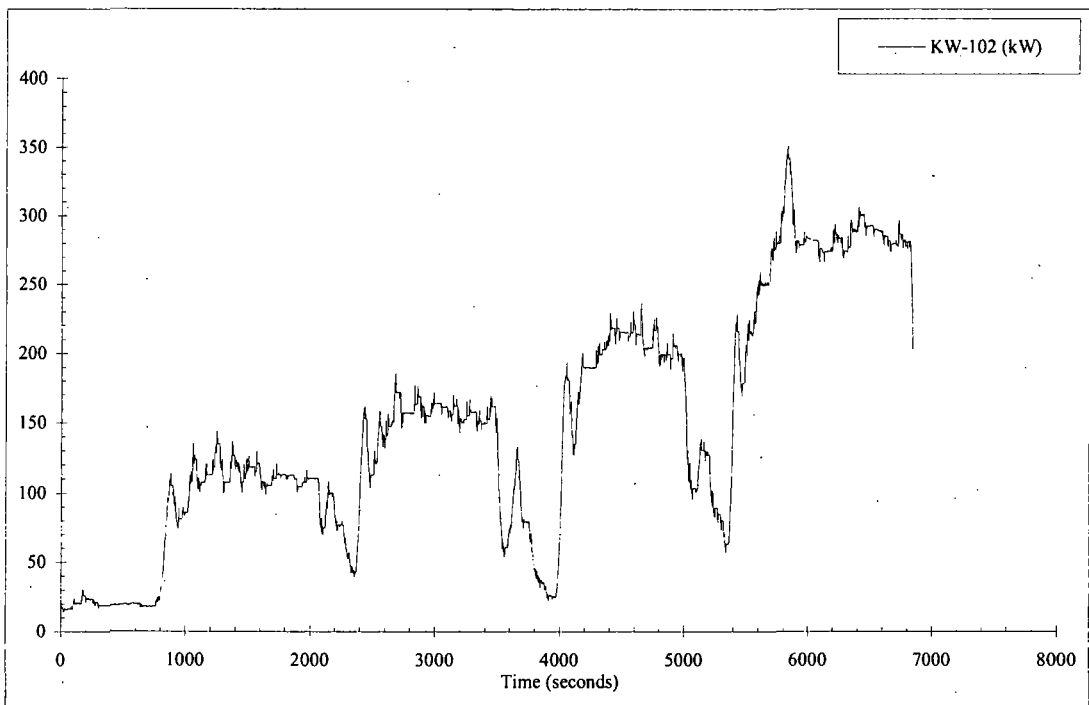
Main Steam Total Flow



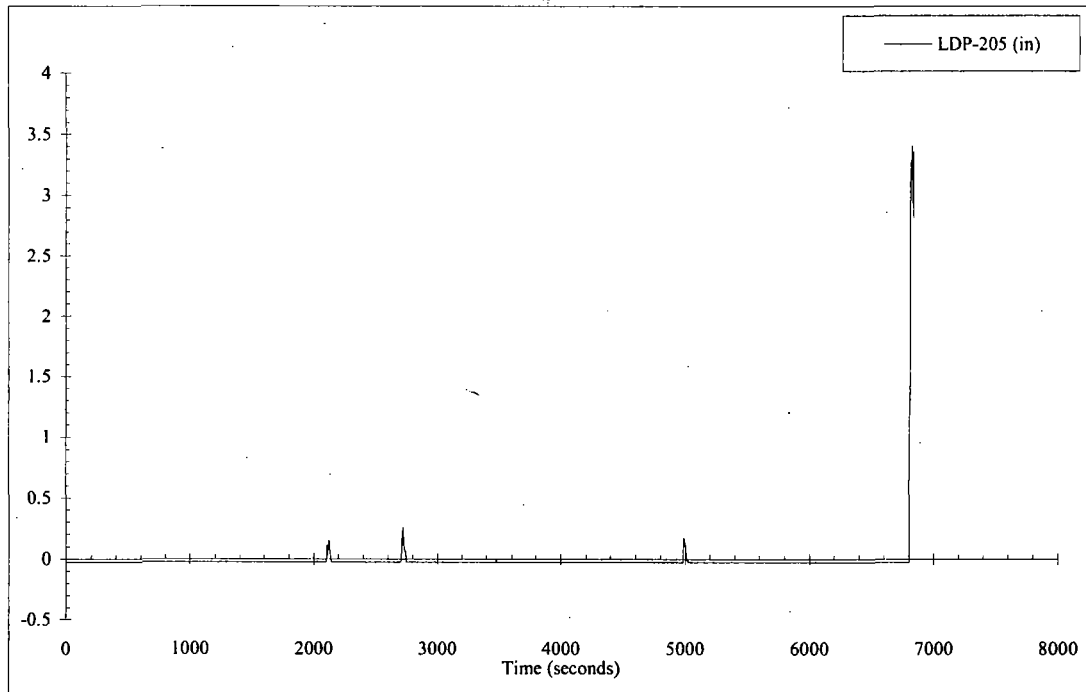
Catch Tank Steam Flow Rate



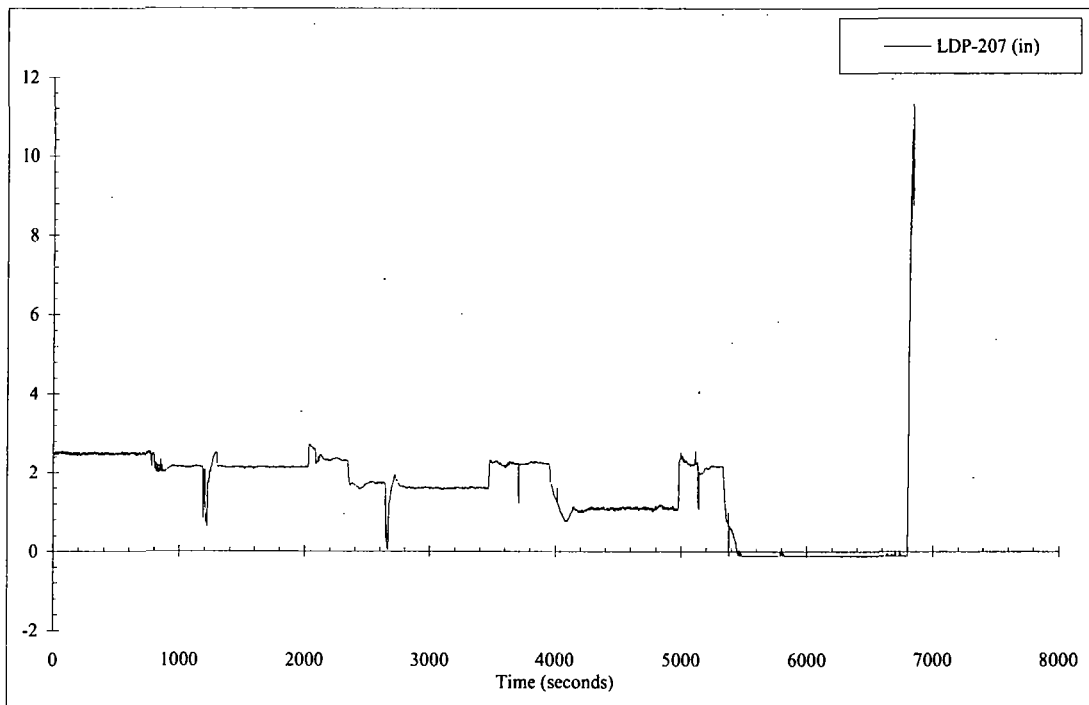
Rx Heater Group 1 Power



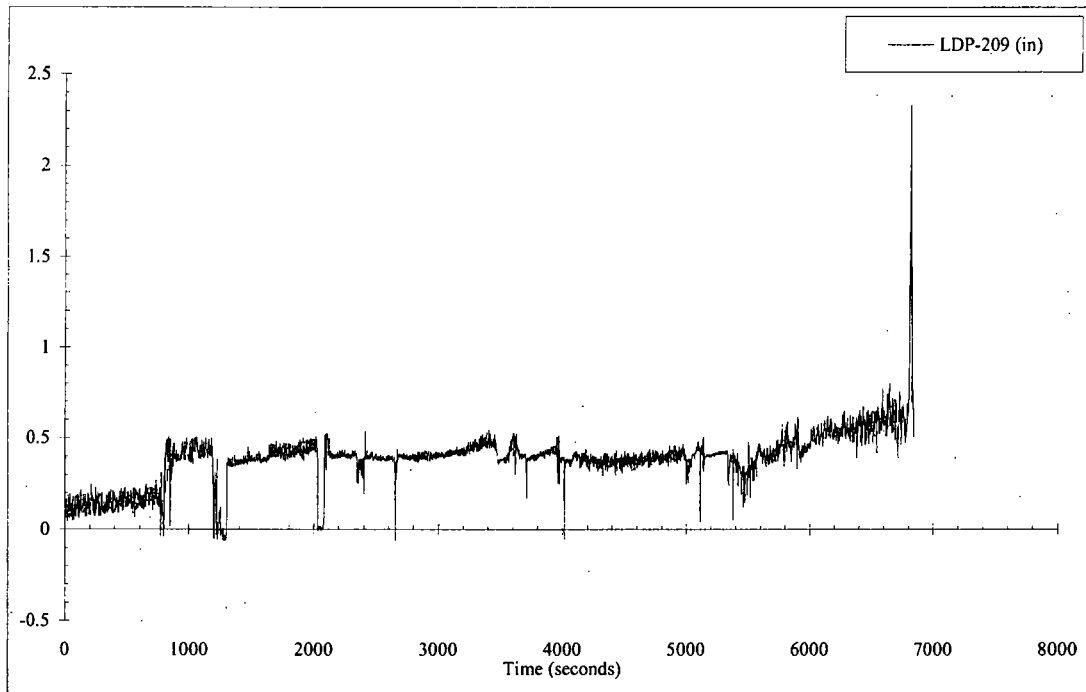
Rx Heater Group 2 Power



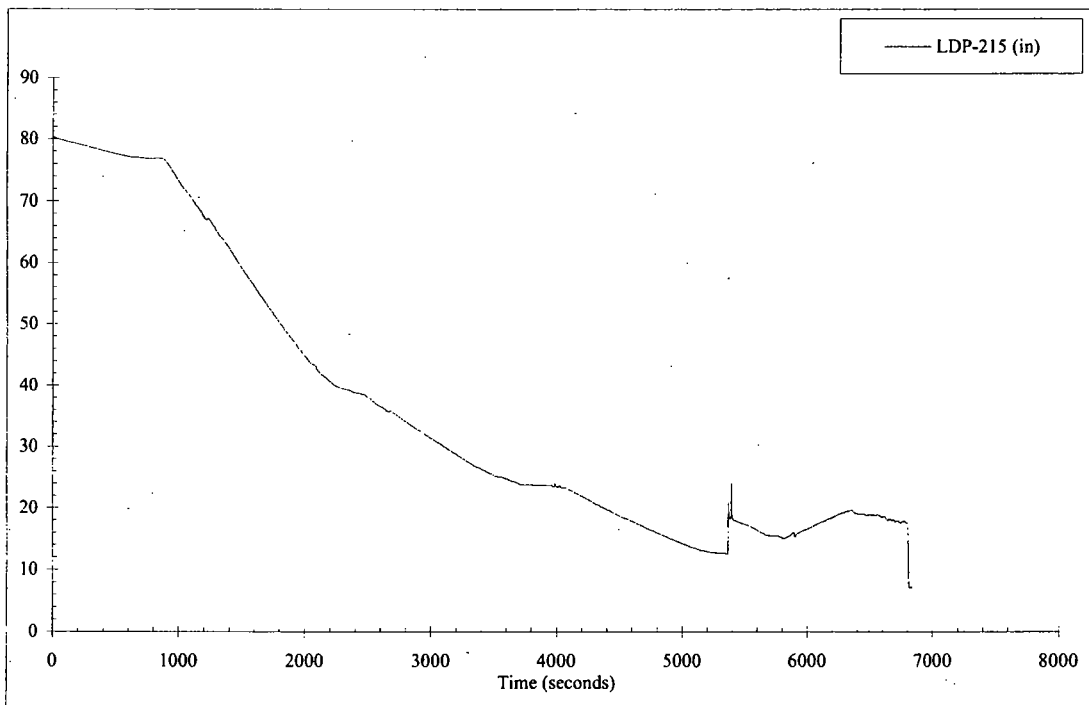
HL-1 Uncompensated Water Level



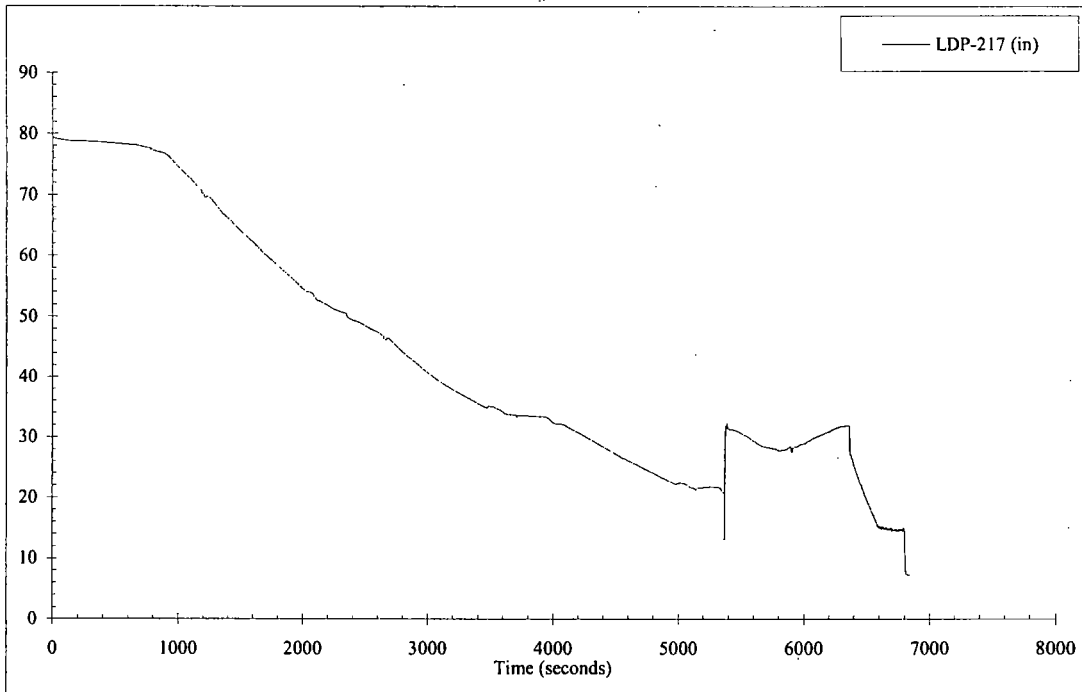
SG-1 to HL-1 Elbow Plenum Uncompensated Water Level



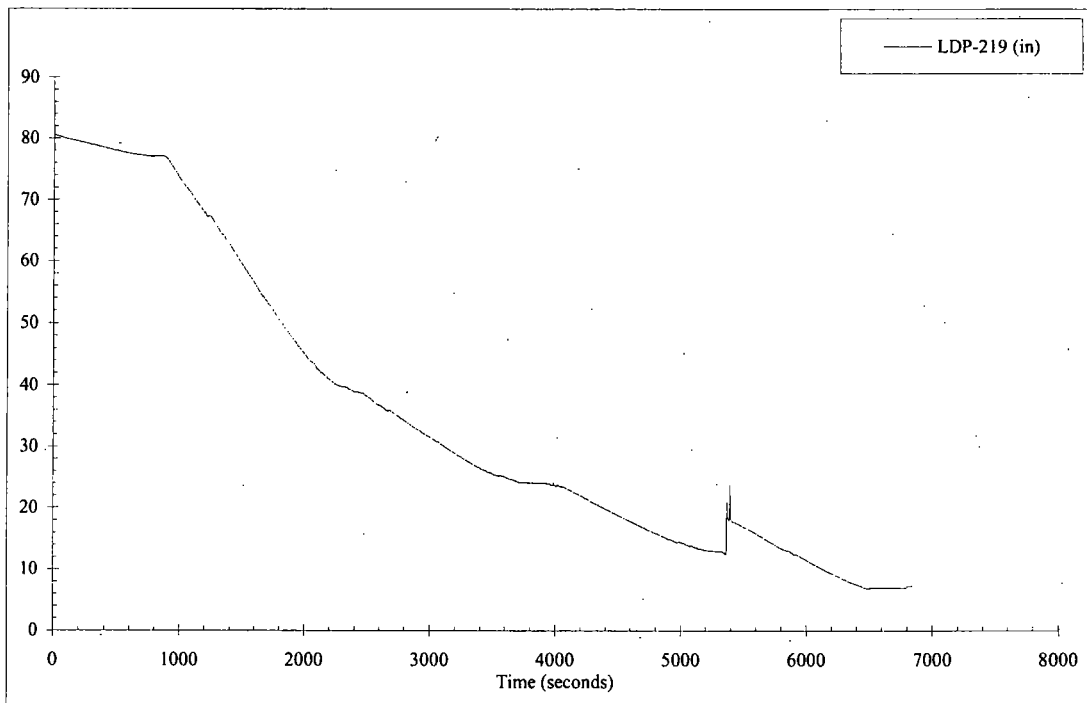
SG-1 to HL-1 Plenum Uncompensated Water Level



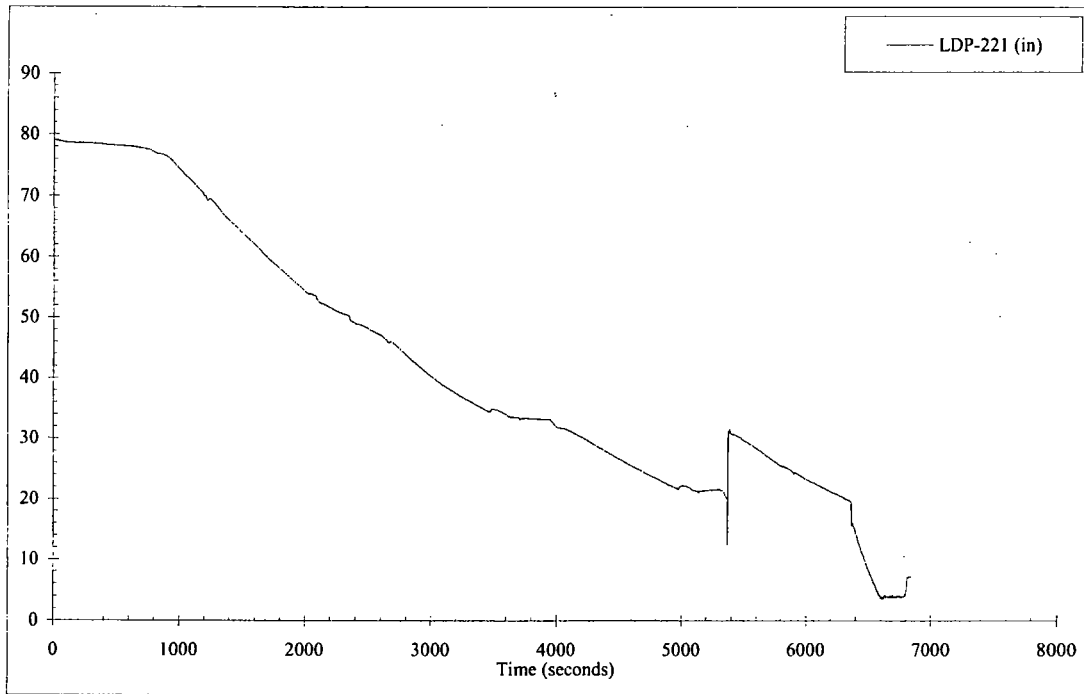
SG-1 Long Tube to HL Uncompensated Water Level



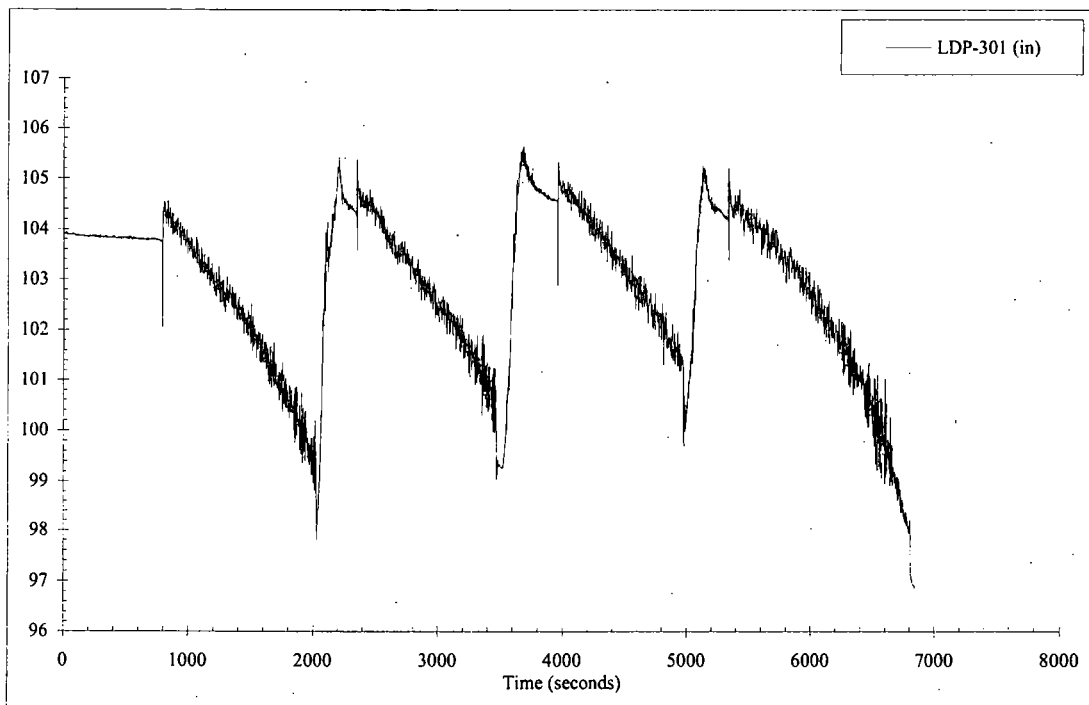
SG-1 Short Tube to HL Uncompensated Water Level



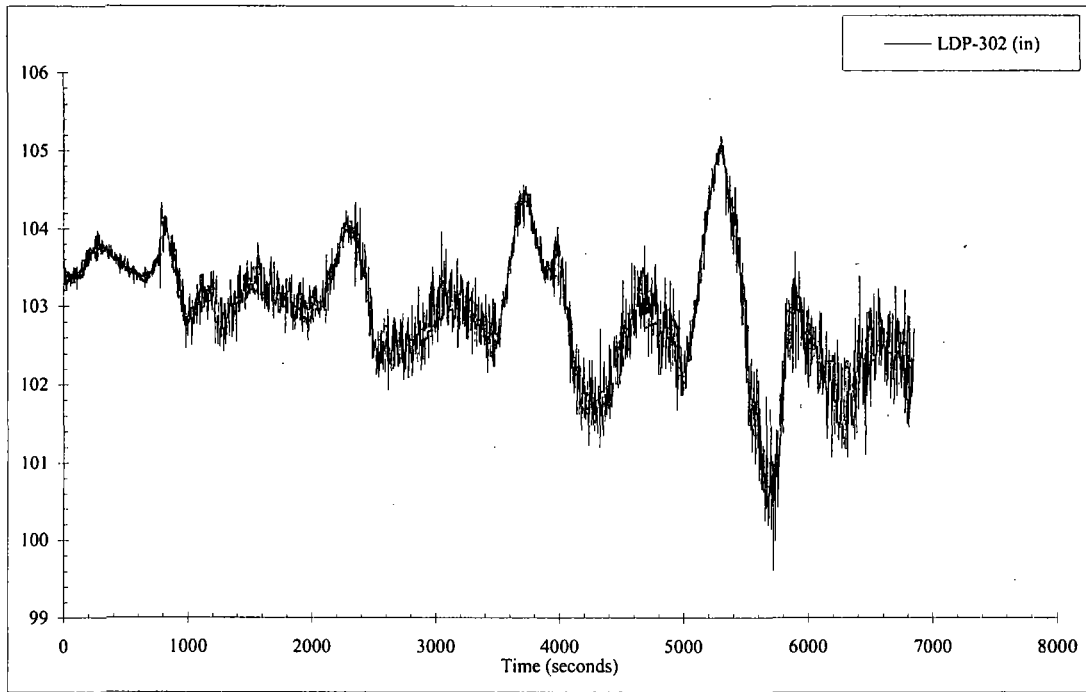
SG-1 Long Tube to CL Uncompensated Water Level



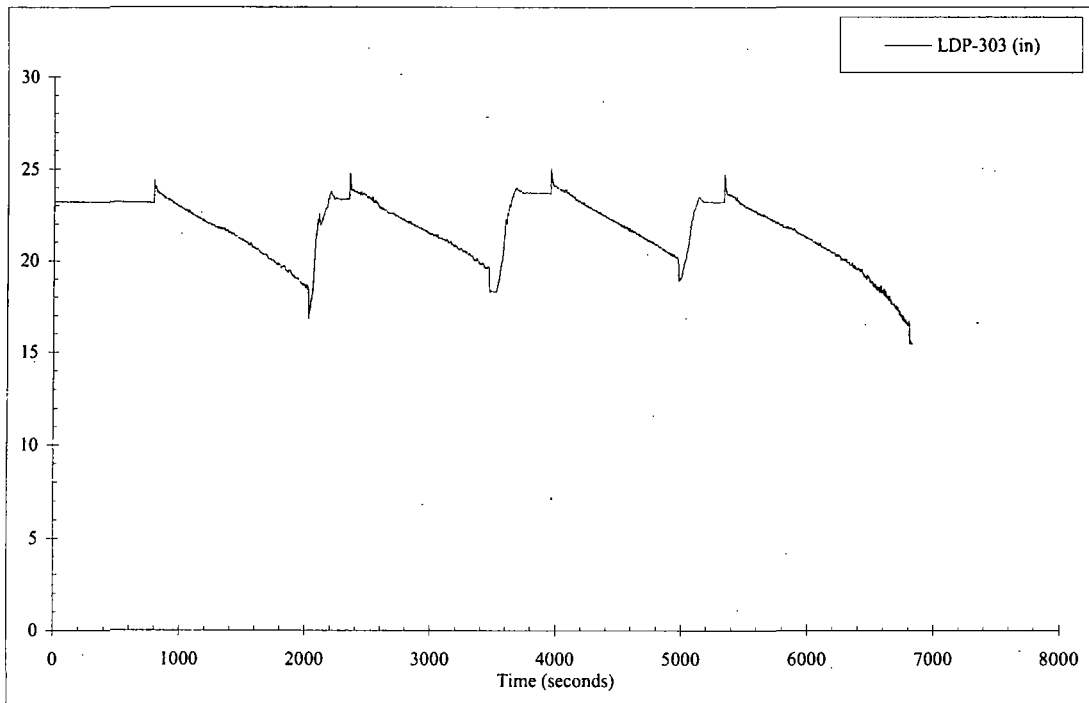
SG-1 Short Tube to CL Uncompensated Water Level



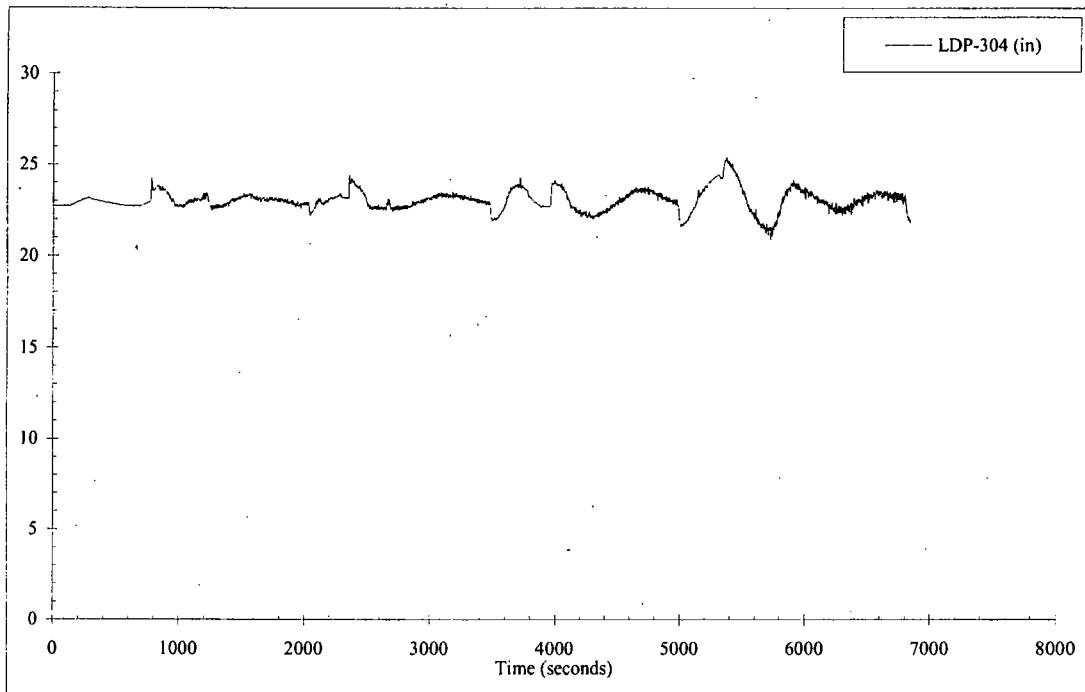
SG-1 WR Uncompensated Water Level



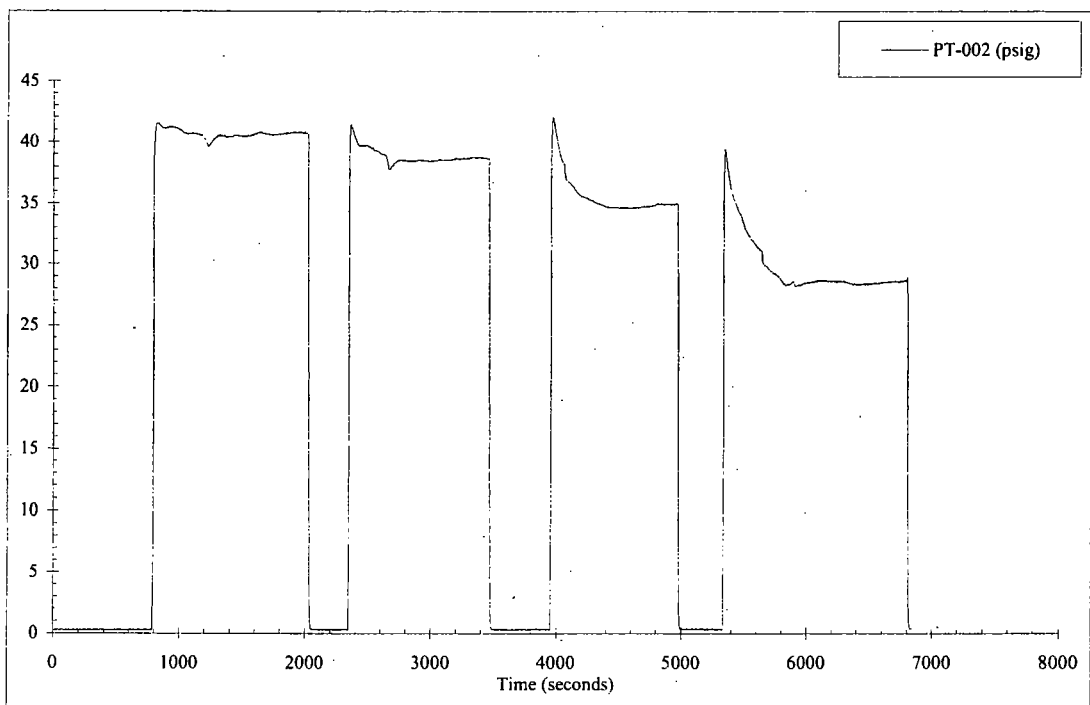
SG-2 WR Uncompensated Water Level



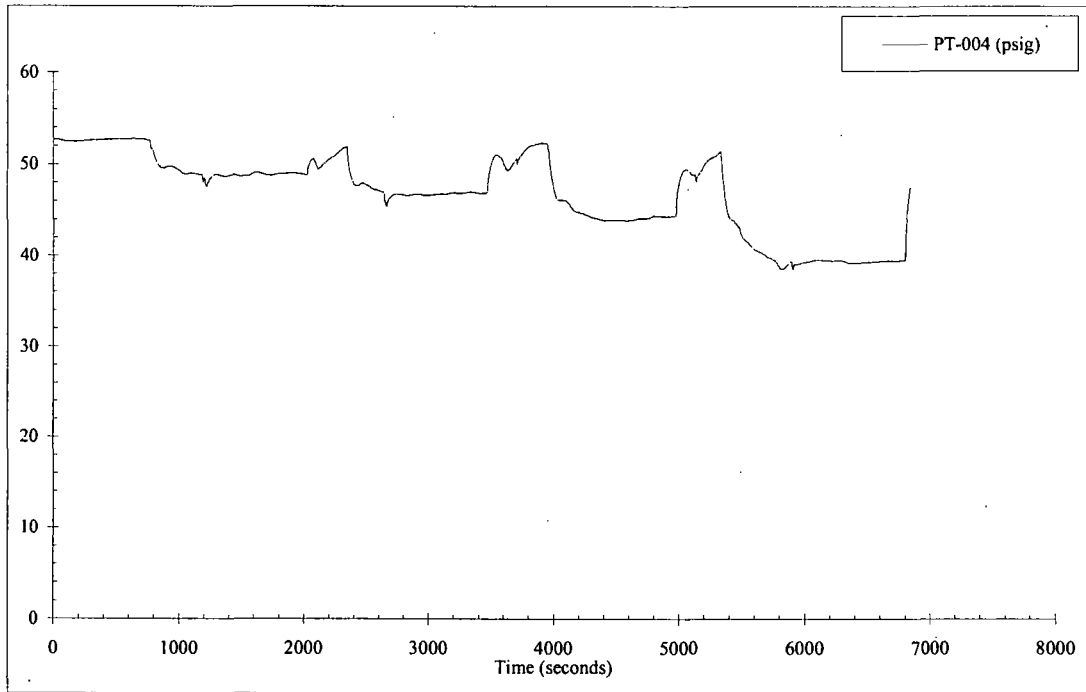
SG-1 NR Uncompensated Water Level



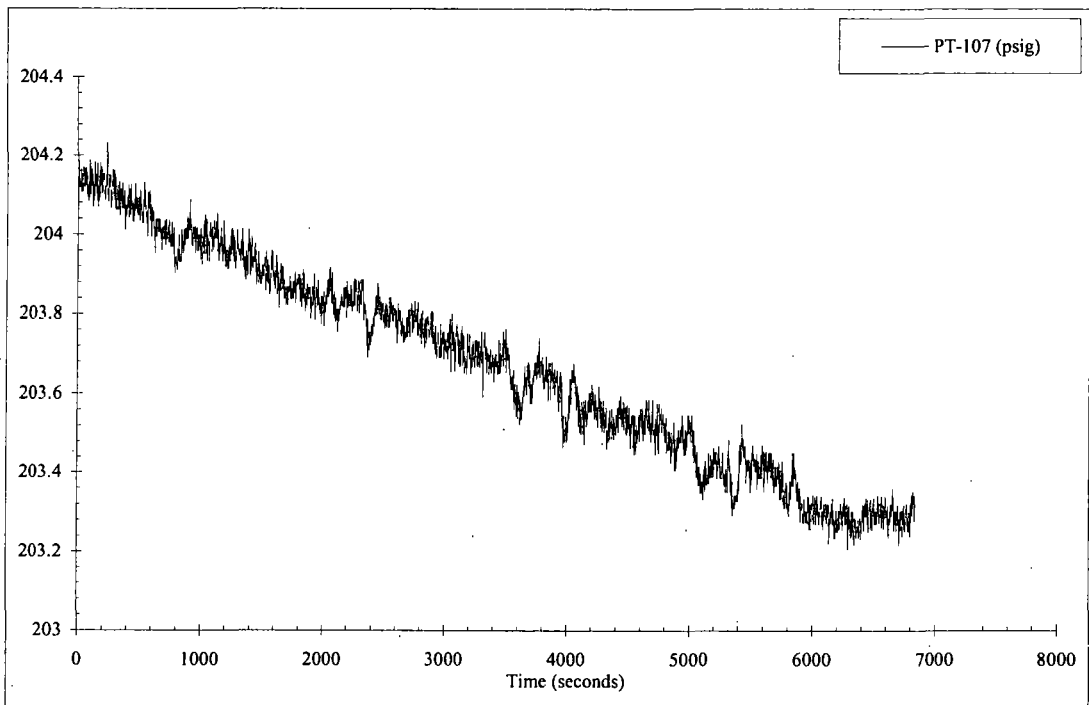
SG-2 NR Uncompensated Water Level



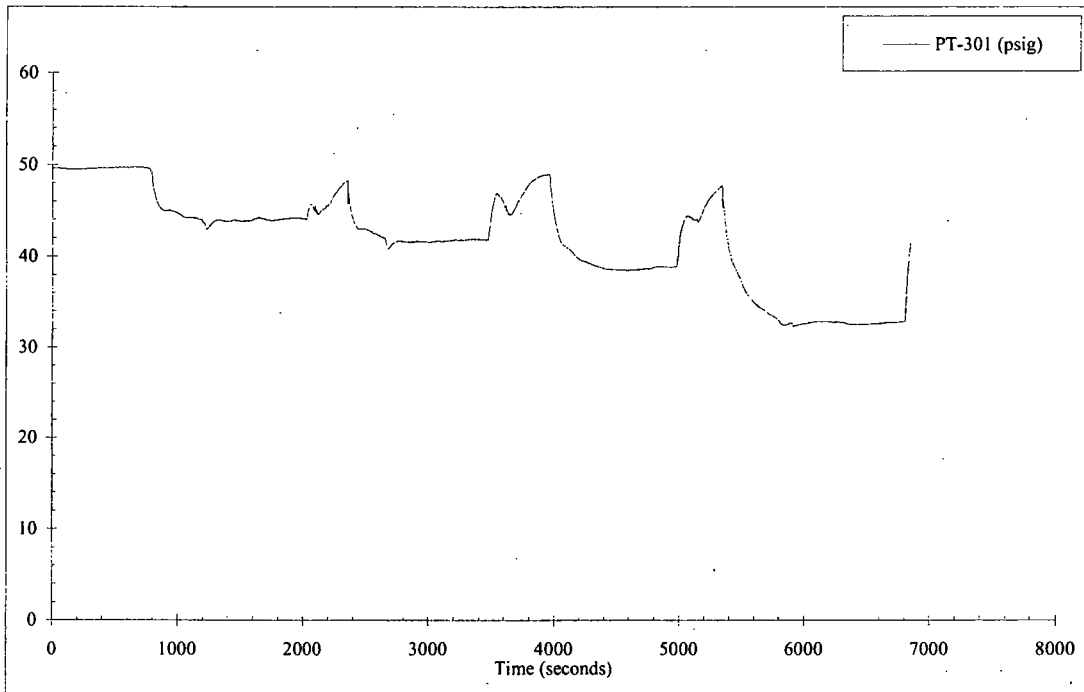
MS Header Pressure



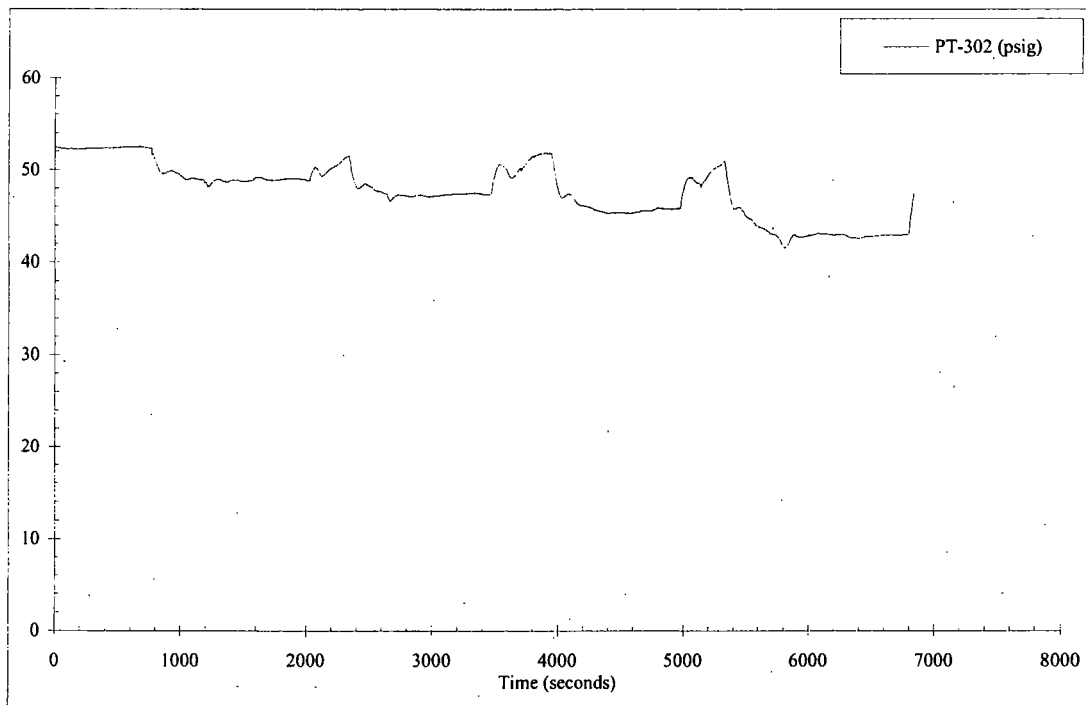
Temp Steam Pressure for FVM-002



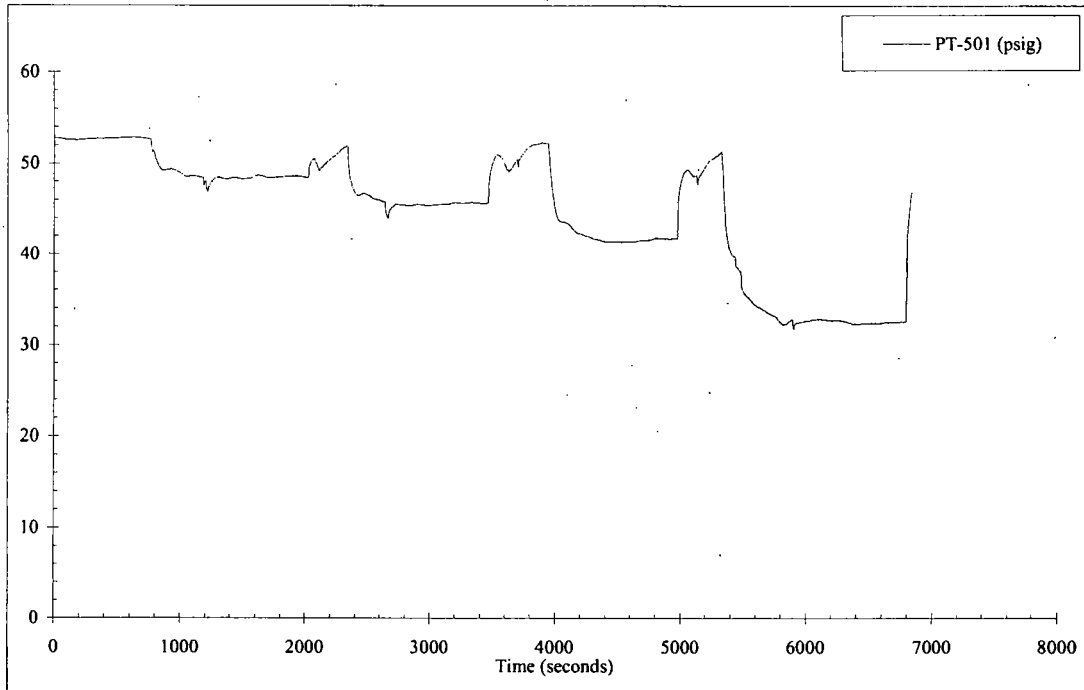
Rx Upper Head Pressure



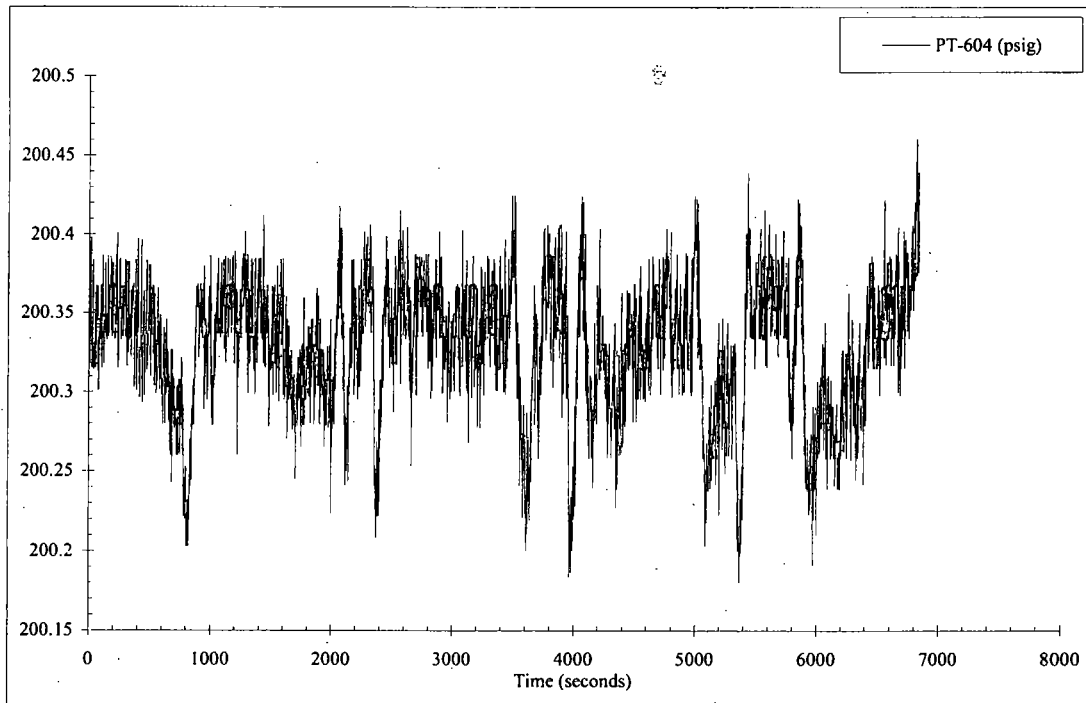
SG-1 Pressure



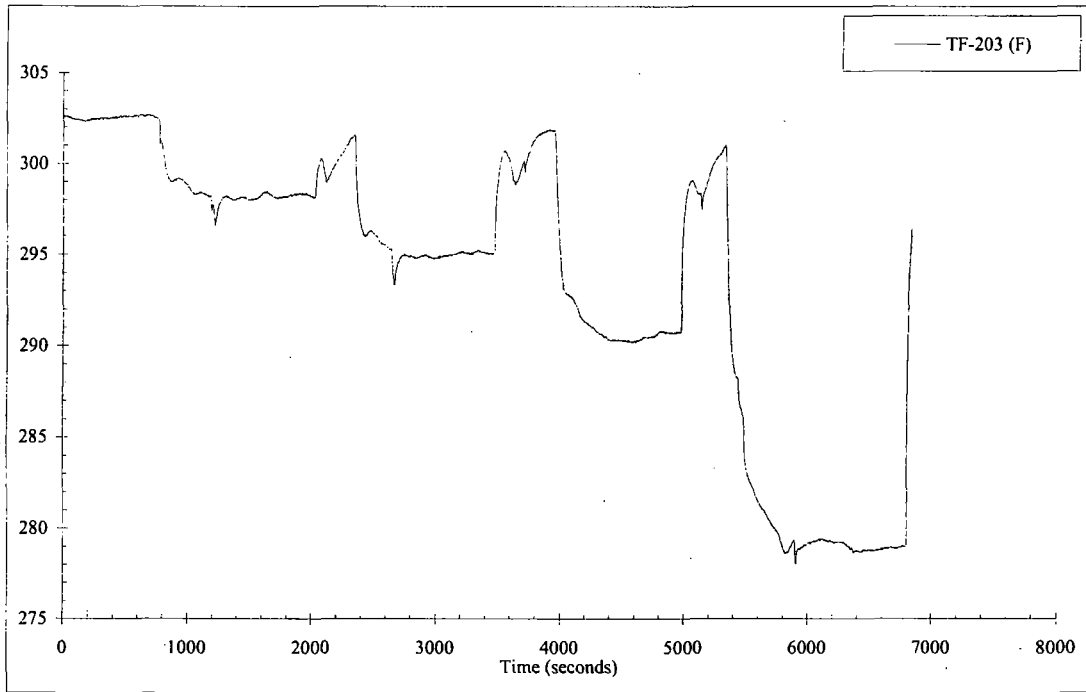
SG-2 Pressure



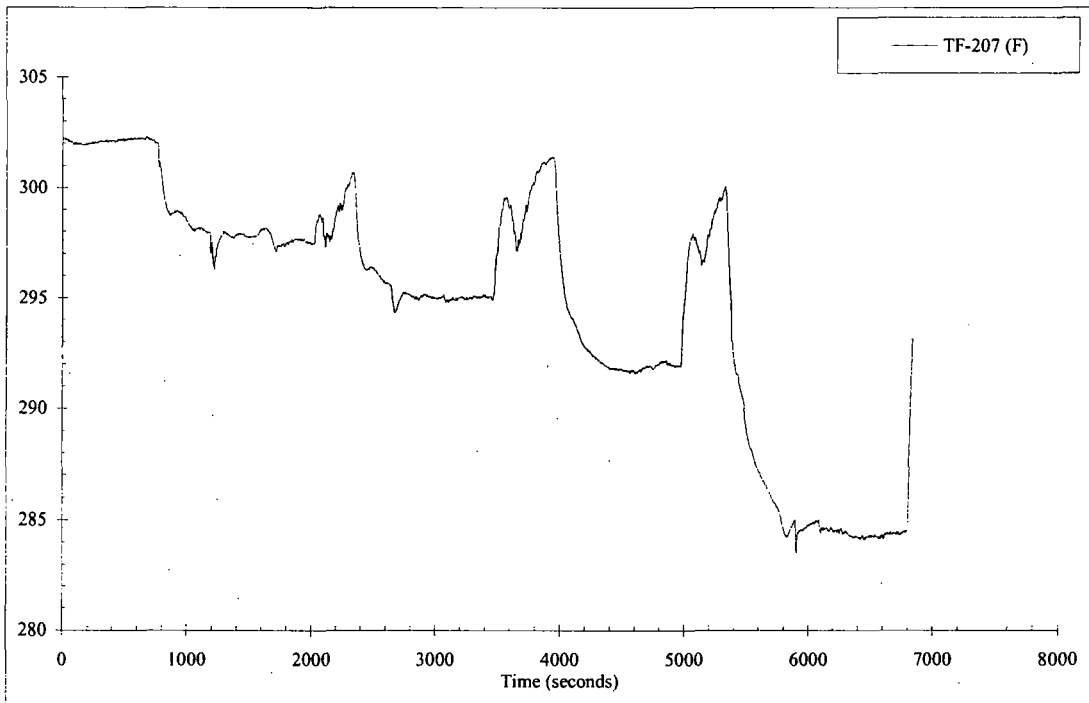
Separator Outlet Steam Pressure



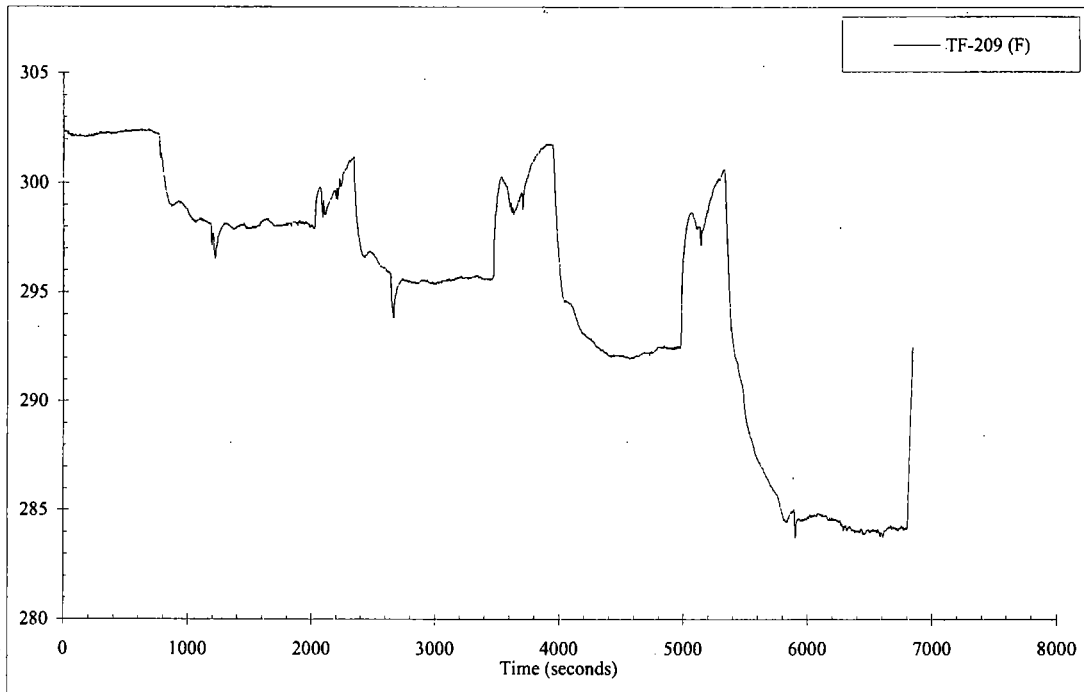
PZR WR Pressure



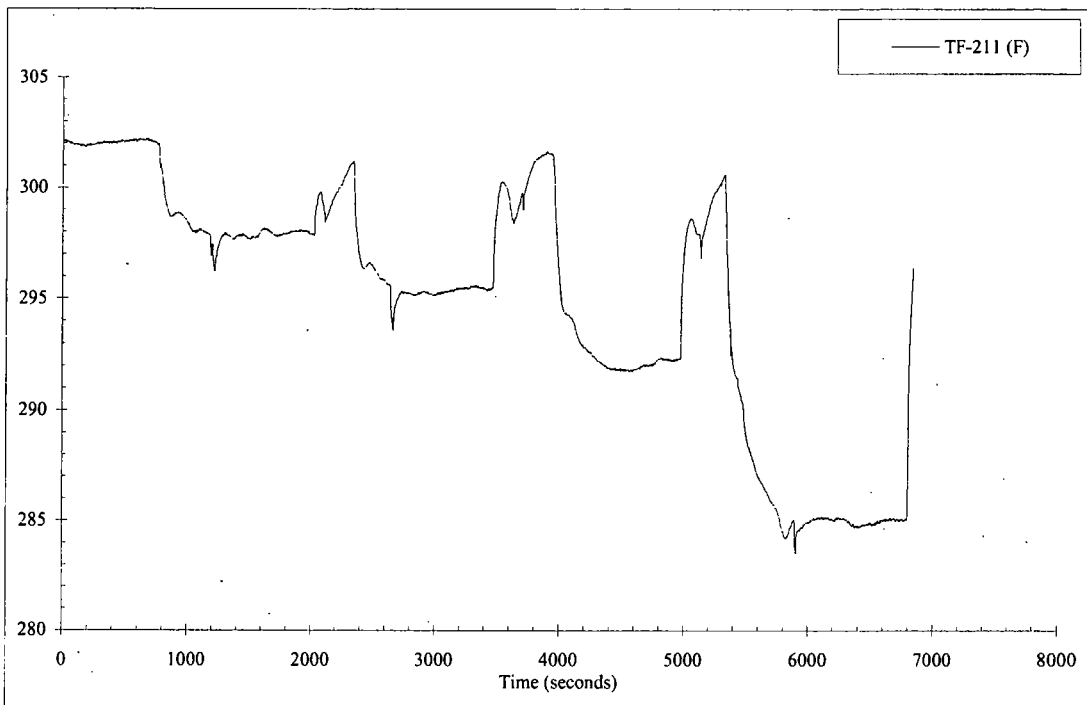
Separator Outlet Steam Temperature



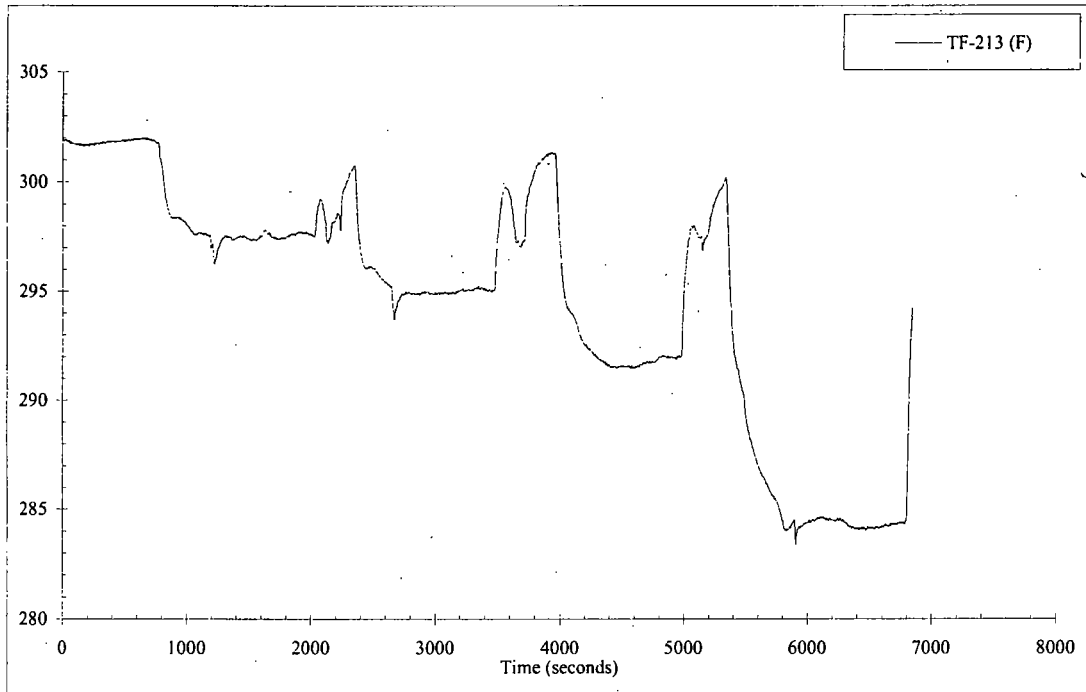
SG-1 Short Tube at Middle Outlet Side Temperature



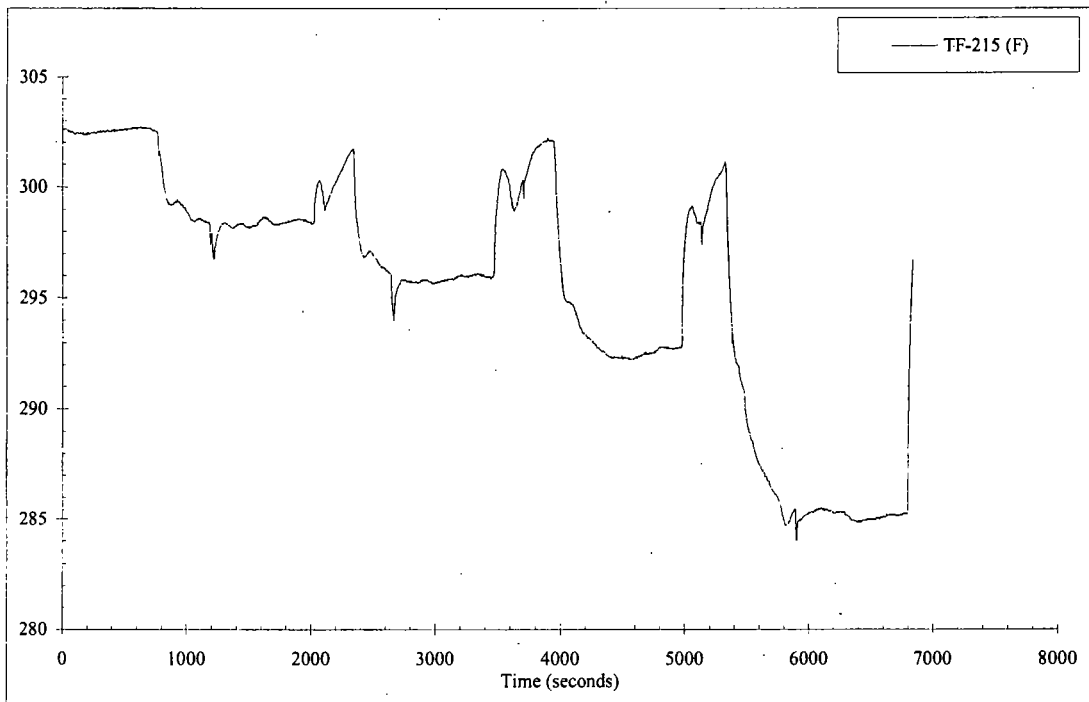
SG-1 Short Tube at Middle Inlet Side Temperature



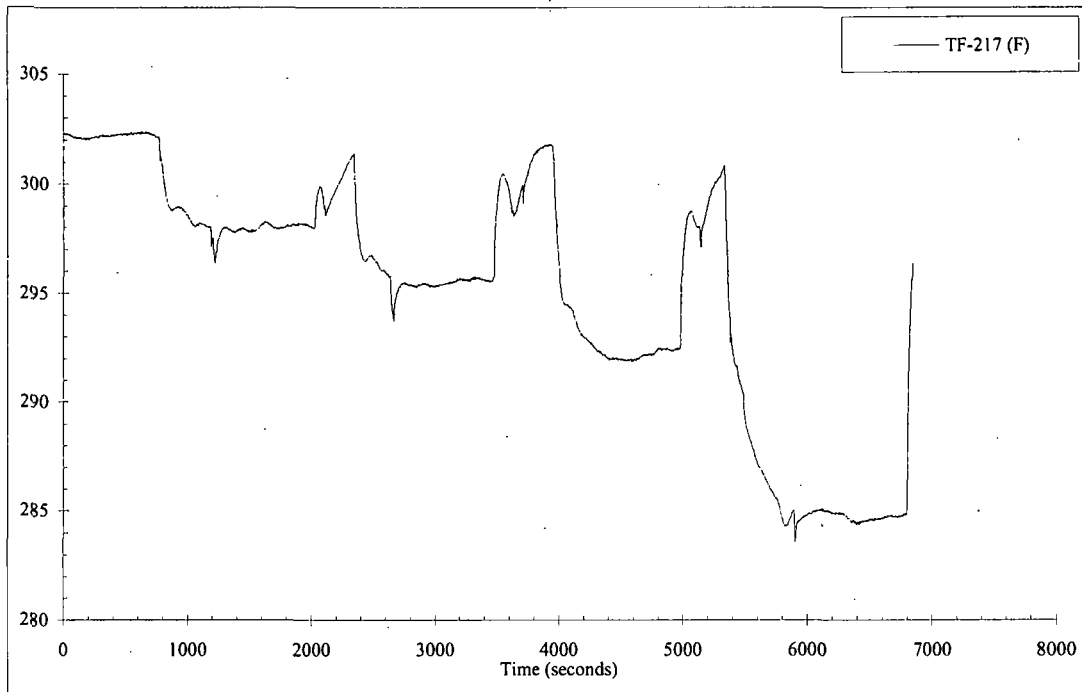
SG-1 Long Tube at Middle Outlet Temperature



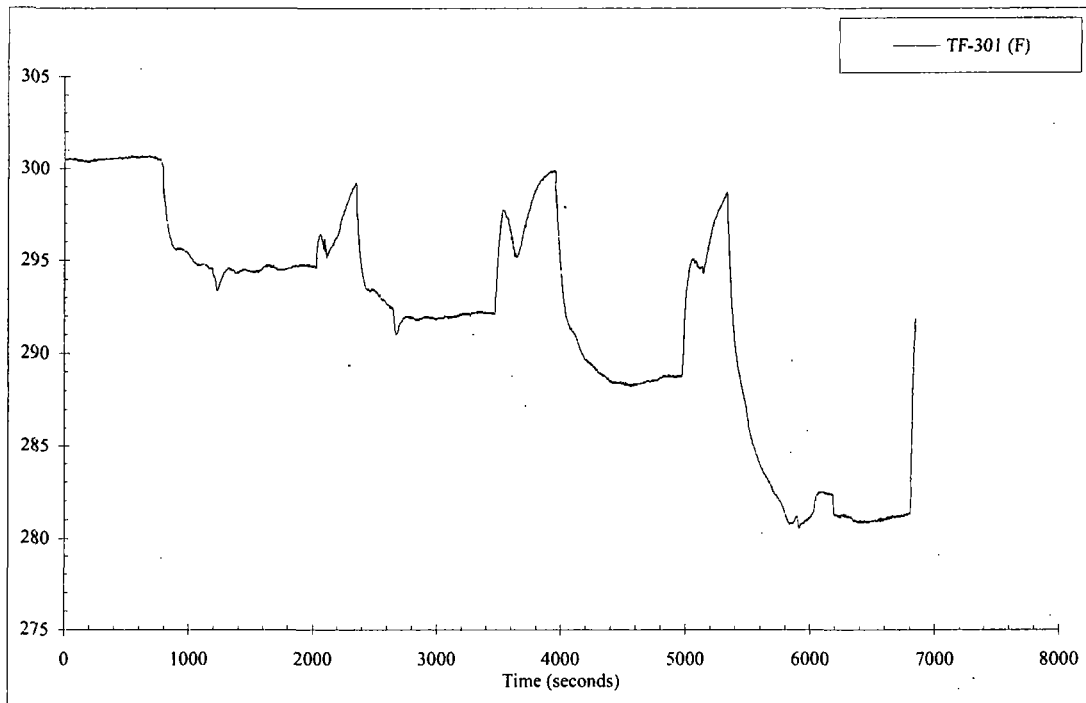
SG-1 Long Tube at Middle Inlet Temperature



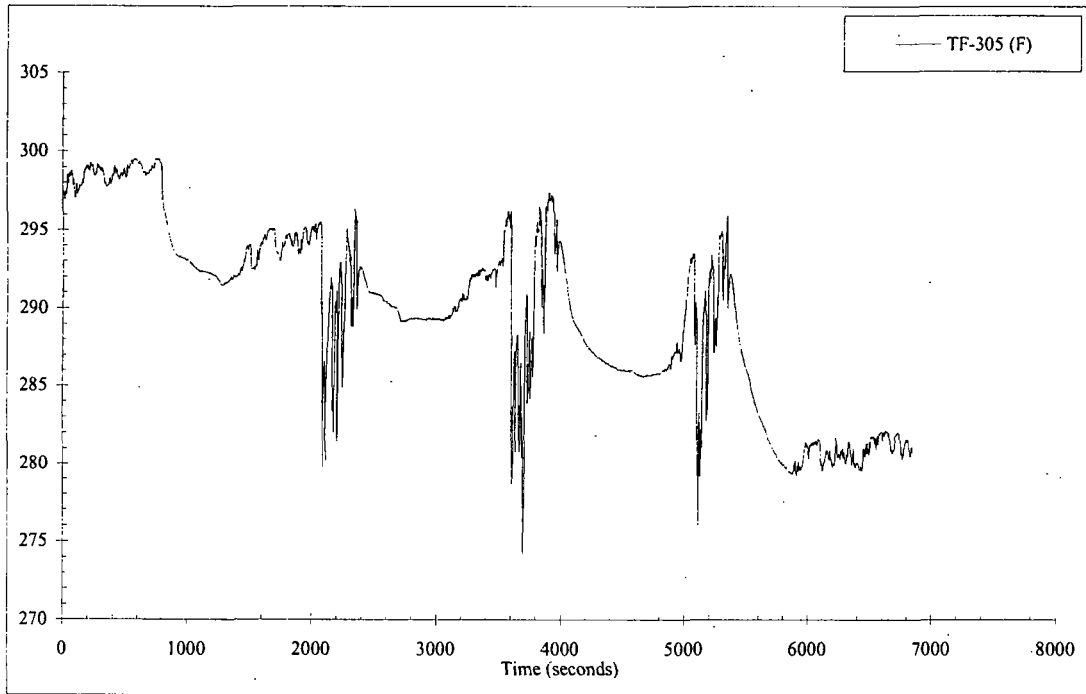
SG-1 Short Tube at Top Temperature



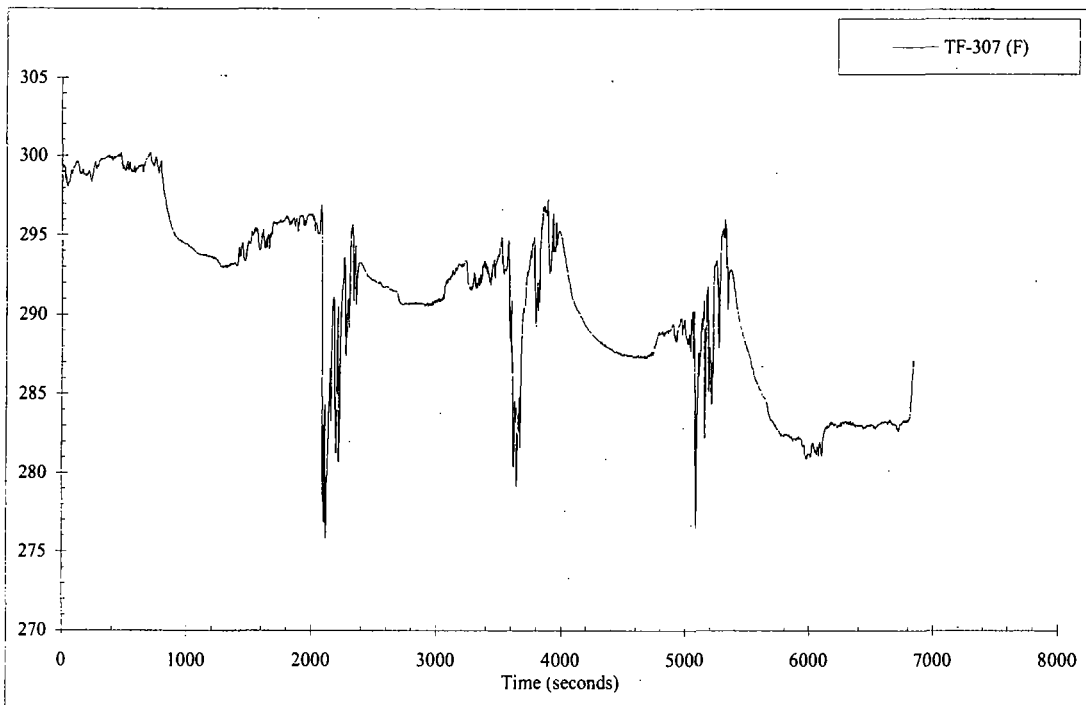
SG-1 Long Tube at Top Temperature



SG-1 Steam Temperature (SC-301)



SG-1 Downcomer HL Side Temperature



SG-1 Downcomer CL Side Temperature

***NO SEQUENCE-OF-
EVENTS***

FOR

NRC-COND-06

Revision 0

NRC-COND-06

Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
DP-111	Analog	DP across Upper Core Plate	4.9931	0.9963	30	-30	Differential Pressure (in h2o)
DP-114	Analog	DP across Upper Support Plate	4.9796	0.9934	375	-375	Differential Pressure (in h2o)
DP-121	Analog	DVI-1/CL-1 Differential Pressure	4.9563	0.989	25	-25	Differential Pressure (in h2o)
DP-122	Analog	DVI-2/CL-2 Differential Pressure	4.9591	0.9931	25	-25	Differential Pressure (in h2o)
DP-123	Analog	DVI-1/CL-3 Differential Pressure	4.9743	0.9957	25	-25	Differential Pressure (in h2o)
DP-124	Analog	DVI-2/CL-4 Differential Pressure	4.9561	0.9924	25	-25	Differential Pressure (in h2o)
DP-125	Analog	HL-1 entrance losses	4.97	0.9951	30	0	Differential Pressure (in h2o)
DP-126	Analog	HL-2 entrance losses	4.9707	0.9949	30	0	Differential Pressure (in h2o)
DP-128	Analog	DVI-1 entrance losses	4.9709	0.9959	25	-25	Differential Pressure (in h2o)
DP-129	Analog	DVI-2 entrance losses	4.9736	0.9958	25	-25	Differential Pressure (in h2o)
DP-130	Analog	Upper Head Differential Pressure	4.9622	0.9941	50	-50	Differential Pressure (in h2o)
DP-201	Analog	CL-1 Differential Pressure	4.9689	0.9939	25	-25	Differential Pressure (in h2o)
DP-202	Analog	RCP-2 Differential Pressure	4.9588	0.9916	200	0	Differential Pressure (in h2o)
DP-203	Analog	RCP-1 Differential Pressure	4.9692	0.9946	27	0	Differential Pressure (psid)
DP-204	Analog	CL-2 Differential Pressure	4.9814	0.9969	25	-25	Differential Pressure (in h2o)
DP-205	Analog	RCP-3 Differential Pressure	4.978	0.995	200	0	Differential Pressure (in h2o)
DP-206	Analog	RCP-4 Differential Pressure	4.984	0.9959	200	0	Differential Pressure (in h2o)
DP-207	Analog	CL-3 Differential Pressure	4.9817	0.9967	25	-25	Differential Pressure (in h2o)
DP-208	Analog	CL-4 Differential Pressure	4.9905	0.9984	25	-25	Differential Pressure (in h2o)
DP-209	Analog	HL-1 Differential Pressure	4.9858	0.998	25	-25	Differential Pressure (in h2o)
DP-210	Analog	HL-2 Differential Pressure	4.9649	0.9933	25	-25	Differential Pressure (in h2o)
DP-211	Analog	SG-1 Short Tube Entrance Losses	4.9849	0.9979	25	0	Differential Pressure (in h2o)
DP-212	Analog	SG-2 Long Tube Exit Losses	4.9838	0.9979	25	0	Differential Pressure (in h2o)
DP-213	Analog	SG-1 Long Tube Exit Losses	4.9788	0.9965	15	-15	Differential Pressure (in h2o)
DP-214	Analog	SG-2 Long Tube Entrance Losses	4.981	0.9973	15	0	Differential Pressure (in h2o)
DP-215	Analog	Break Differential Pressure	4.9807	0.9981	500	0	Differential Pressure (psid)
DP-216	Analog	Break Differential Pressure	4.9729	0.9964	500	0	Differential Pressure (psid)
DP-217	Analog	HL-1 to CL1 Differential Pressure at SG1	4.9835	0.9981	46.83	0	Differential Pressure (in h2o)
DP-218	Analog	HL-2 to CL2 Differential Pressure at SG2	4.9889	0.9992	150	0	Differential Pressure (in h2o)
DP-219	Analog	HL-1 to CL3 Differential Pressure at SG1	4.9686	0.9949	30.95	0	Differential Pressure (in h2o)
DP-220	Analog	HL-2 to CL4 Differential Pressure at SG2	4.9627	0.9936	150	0	Differential Pressure (in h2o)
DP-221	Analog	HL-1 to CL1 Differential Pressure at Rx	4.9677	0.9951	150	0	Differential Pressure (in h2o)
DP-222	Analog	HL-2 to CL2 Differential Pressure at Rx	4.983	0.9975	150	0	Differential Pressure (in h2o)
DP-223	Analog	HL-1 to CL3 Differential Pressure at Rx	4.9915	0.9987	150	0	Differential Pressure (in h2o)
DP-224	Analog	HL-2 to CL4 Differential Pressure at Rx	4.9665	0.9944	150	0	Differential Pressure (in h2o)
DP-401	Analog	ACC-1 Injection Differential Pressure	4.979	0.9975	400	0	Differential Pressure (in h2o)
DP-402	Analog	ACC-2 Injection Differential Pressure	4.9736	0.9958	400	0	Differential Pressure (in h2o)
DP-501	Analog	CMT-1 Injection Differential Pressure	4.9675	0.9948	150	-150	Differential Pressure (in h2o)
DP-502	Analog	CMT-2 Injection Differential Pressure	4.9645	0.9947	150	-150	Differential Pressure (in h2o)
DP-503	Analog	CMT-1 Balance Line Differential Pressure	4.9658	0.998	150	-150	Differential Pressure (in h2o)
DP-504	Analog	CMT-2 Balance Line Differential Pressure	4.9555	1.0007	100	-100	Differential Pressure (in h2o)
DP-601	Analog	HL-1 to ADS4-1 Differential Pressure	4.9969	1.0008	10	0	Differential Pressure (psid)
DP-602	Analog	HL-2 to ADS4-2 Differential Pressure	4.987	0.9948	10	0	Differential Pressure (psid)
DP-603	Analog	ADS4-1 Venturi	4.9847	0.9985	100	0	Differential Pressure (in h2o)
DP-604	Analog	ADS4-2 Venturi	4.964	0.9941	100	0	Differential Pressure (in h2o)
DP-605	Analog	ADS4-1 Venturi outlet to Enlarger inlet	4.9881	0.9993	50	0	Differential Pressure (in h2o)
DP-606	Analog	ADS4-2 Venturi outlet to Enlarger Inlet	4.9857	0.9991	50	0	Differential Pressure (in h2o)
DP-611	Analog	PZR Surge Line Differential Pressure	4.9773	0.9967	25	-25	Differential Pressure (in h2o)
DP-701	Analog	IRWST-1 Injection Differential Pressure	4.9672	0.9982	30	0	Differential Pressure (psid)
DP-702	Analog	IRWST-2 Injection Differential Pressure	4.9871	0.9981	30	0	Differential Pressure (psid)
DP-905	Analog	Break Separator Entrance Differential Pressure	4.9905	0.9994	100	0	Differential Pressure (psid)
FDP-604	Analog	ADS-2 Flow Differential Pressure	4.9738	0.9961	100	0	Differential Pressure (psid)
FDP-605	Analog	ADS-1 Flow Differential Pressure	4.9896	0.9993	250	0	Differential Pressure (psid)
FDP-606	Analog	ADS-3 Flow Differential Pressure	5.0051	1.0023	100	0	Differential Pressure (psid)
FMM-001	Analog	SG-1 Feed Flow	4.9838	0.9961	6	0	Volumetric Flow Rate (gpm)
FMM-002	Analog	SG-2 Feed Flow	4.9642	0.9925	6	0	Volumetric Flow Rate (gpm)

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NRC-COND-06

Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
FMM-201	Analog	CL-1 Loop Flow	4.9607	0.9921	100	-100	Volumetric Flow Rate (gpm)
FMM-202	Analog	CL-2 Loop Flow	4.9754	0.9943	100	-100	Volumetric Flow Rate (gpm)
FMM-203	Analog	CL-3 Loop Flow	4.9853	0.9974	100	-100	Volumetric Flow Rate (gpm)
FMM-204	Analog	CL-4 Loop Flow	4.9729	0.9936	100	-100	Volumetric Flow Rate (gpm)
FMM-205	Analog	DVI-1 Flow	4.9706	0.996	75	0	Volumetric Flow Rate (gpm)
FMM-206	Analog	DVI-2 Flow	4.9767	0.9969	75	0	Volumetric Flow Rate (gpm)
FMM-401	Analog	ACC-1 Injection Flow	4.9516	0.9932	40	0	Volumetric Flow Rate (gpm)
FMM-402	Analog	ACC-2 Injection Flow	4.9772	0.9965	40	0	Volumetric Flow Rate (gpm)
FMM-501	Analog	CMT-1 Injection Flow	4.9959	1.0006	75	0	Volumetric Flow Rate (gpm)
FMM-502	Analog	CMT-2 CL Balance Line Flow	4.9742	0.9994	70	0	Volumetric Flow Rate (gpm)
FMM-503	Analog	CMT-1 CL Balance Line Flow	4.9717	0.9985	75	0	Volumetric Flow Rate (gpm)
FMM-504	Analog	CMT-2 Injection Flow	4.9523	0.9925	20	0	Volumetric Flow Rate (gpm)
FMM-601	Analog	ADS1-3 Loop Seal Flow	5.0168	1.004	200	0	Volumetric Flow Rate (gpm)
FMM-602	Analog	ADS4-2 Loop Seal Flow	5.0507	1.0117	60	0	Volumetric Flow Rate (gpm)
FMM-603	Analog	ADS4-1 Loop Seal Flow	5.0571	1.0129	60	0	Volumetric Flow Rate (gpm)
FMM-701	Analog	IRWST/DVI-1 Injection Flow	4.9738	0.9954	40	0	Volumetric Flow Rate (gpm)
FMM-702	Analog	IRWST/DVI-2 Injection Flow	4.9724	0.9955	40	0	Volumetric Flow Rate (gpm)
FMM-703	Analog	IRWST Overflow	4.9663	0.9966	10	0	Volumetric Flow Rate (gpm)
FMM-801	Analog	CVSP Discharge Flow	4.9876	0.9998	8	0	Volumetric Flow Rate (gpm)
FMM-802	Analog	PRHR Inlet Flow	4.9656	0.9966	40	0	Volumetric Flow Rate (gpm)
FMM-803	Analog	RNSP to DVI-2 Flow	4.9629	0.9942	30	0	Volumetric Flow Rate (gpm)
FMM-804	Analog	PRHR Outlet Flow	4.9612	0.9963	40	0	Volumetric Flow Rate (gpm)
FMM-805	Analog	RNSP Discharge Flow	4.9711	0.9936	40	0	Volumetric Flow Rate (gpm)
FMM-901	Analog	Primary Sump-1 Recirculation Injection Flow	4.9673	0.9936	40	-40	Volumetric Flow Rate (gpm)
FMM-902	Analog	Primary Sump-2 Recirculation Injection Flow	4.9726	0.9948	40	-40	Volumetric Flow Rate (gpm)
FMM-905	Analog	Break Separator Loop Seal Flow	5.1224	1.0902	90	-90	Volumetric Flow Rate (gpm)
FVM-001	Analog	SG-1 Main Steam Flow	5.0223	1.005	200	0	Steam Flow Rate (cfm)
FVM-002	Analog	SG-2 Main Steam Flow	4.9878	0.9982	200	0	Steam Flow Rate (cfm)
FVM-003	Analog	Main Steam Total Flow	4.9815	0.9978	70	0	Steam Flow Rate (cfm)
FVM-009	Analog	SG-1 PORV Blowdown Steam Flow	4.9836	0.9967	381	0	Steam Flow Rate (cfm)
FVM-010	Analog	SG-2 PORV Blowdown Steam Flow	4.9817	0.9971	381	0	Steam Flow Rate (cfm)
FVM-601	Analog	ADS1-3 Separator Steam Flow	4.9995	1.0017	2000	0	Steam Flow Rate (cfm)
FVM-602	Analog	ADS4-2 Separator 6-inch Line Steam Flow	5.006	1.0018	2000	0	Steam Flow Rate (cfm)
FVM-603	Analog	ADS4-1 Separator 6-inch Line Steam Flow	5.0062	1.0024	1600	0	Steam Flow Rate (cfm)
FVM-604	Analog	ADS4-2 Separator 2-inch Line Steam Flow	5.0034	1.0026	348	0	Steam Flow Rate (cfm)
FVM-605	Analog	ADS4-1 Separator 2-inch Line Steam Flow	5.0037	1.0028	348	0	Steam Flow Rate (cfm)
FVM-901	Analog	BAMS HDR 6-inch Line Steam Flow	5.0021	1.0023	5000	0	Steam Flow Rate (cfm)
FVM-902	Analog	BAMS HDR 10-inch Line Steam Flow	5.01	1.0027	12500	0	Steam Flow Rate (cfm)
FVM-903	Analog	Primary Sump Steam Exhaust Flow	4.9879	0.9949	22	0	Steam Flow Rate (cfm)
FVM-904	Analog	Break Separator 3-inch Line Steam Flow	4.9986	0.9979	400	0	Steam Flow Rate (cfm)
FVM-905	Analog	Break Separator 6-inch Line Steam Flow	5.0036	1.004	6000	0	Steam Flow Rate (cfm)
FVM-906	Analog	Break Separator 8-inch Line Steam Flow	5.0048	1.0025	4000	0	Steam Flow Rate (cfm)
HPS-201-1	Analog	CL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-201-2	Analog	CL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-201-3	Analog	CL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-202-1	Analog	CL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-202-2	Analog	CL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-202-3	Analog	CL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-203-1	Analog	CL-3 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-203-2	Analog	CL-3 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-203-3	Analog	CL-3 Fluid temperature	10	0	10	0	Voltage (V)
HPS-204-1	Analog	CL-4 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-204-2	Analog	CL-4 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-204-3	Analog	CL-4 Fluid temperature	10	0	10	0	Voltage (V)
HPS-205-1	Analog	HL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-205-2	Analog	HL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
HPS-205-3	Analog	HL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-206-1	Analog	HL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-206-2	Analog	HL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-206-3	Analog	HL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-509-1	Analog	CMT-1 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-509-2	Analog	CMT-1 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-509-3	Analog	CMT-1 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-512-1	Analog	CMT-2 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-512-2	Analog	CMT-2 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-512-3	Analog	CMT-2 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-604-1	Analog	Lower PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-604-2	Analog	Lower PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-604-3	Analog	Lower PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-606-1	Analog	ADS1-3 Common Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-606-2	Analog	ADS1-3 Common Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-606-3	Analog	ADS1-3 Common Inlet Fluid temperature	10	0	10	0	Voltage (V)
HPS-607-1	Analog	Upper PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-607-2	Analog	Upper PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-607-3	Analog	Upper PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-801-1	Analog	PRHR HX Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-801-2	Analog	PRHR HX Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-801-3	Analog	PRHR HX Inlet Fluid temperature	10	0	10	0	Voltage (V)
KW-101	Analog	Rx Heater Group 1 Power	4.3222	1.1171	472	0	Power (kW)
KW-102	Analog	Rx Heater Group 2 Power	4.1621	1.0045	466	0	Power (kW)
KW-103	Analog	Rx Heater Group 1 Power	4.8931	0.9786	496	0	Power (kW)
KW-104	Analog	Rx Heater Group 2 Power	4.912	0.9946	492	0	Power (kW)
KW-601	Analog	PZR Heater Power	4.9435	0.982	24.3	0	Power (kW)
LCT-701	Analog	IRWST Weight	4.9831	0.9976	40000	0	Mass (lbm)
LCT-901	Analog	Primary Sump Weight	4.977	0.9969	28800	0	Mass (lbm)
LCT-902	Analog	Secondary Sump Weight	4.9845	0.9983	16700	0	Mass (lbm)
LDP-001	Analog	FST Uncompensated Water Level	5.0056	1.0017	91.88	0	Water Level (in)
LDP-101	Analog	CL to Bypass Holes Uncompensated Water Level (270)	4.9645	0.9945	5.561	0	Water Level (in)
LDP-102	Analog	CL to Bypass Holes Uncompensated Water Level (180)	4.9725	0.9963	5.938	0	Water Level (in)
LDP-103	Analog	DVI to CL Uncompensated Water Level (270)	4.9807	0.9982	11.692	0	Water Level (in)
LDP-104	Analog	DVI to CL Uncompensated Water Level (180)	4.9748	0.9992	12.376	0	Water Level (in)
LDP-105	Analog	Upper Core Plate to DVI Uncompensated Water Level (270)	5.0076	1.0058	11.929	0	Water Level (in)
LDP-106	Analog	Bottom of Core to Lower Core Plate Uncompensated Water Level (180)	4.9732	0.9985	8.198	0	Water Level (in)
LDP-107	Analog	Bottom of Core to Lower Core Plate Uncompensated Water Level (270)	4.9713	0.9958	8.223	0	Water Level (in)
LDP-108	Analog	Bottom of Core to Lower Core Plate Uncompensated Water Level (0)	4.9683	0.9953	8.562	0	Water Level (in)
LDP-109	Analog	Lower Core Plate to Mid-Core Spacer Grid Uncompensated Water Level (0)	4.984	0.9988	19.763	0	Water Level (in)
LDP-110	Analog	Mid-Core Spacer Grid to Upper-Core Spacer Grid Uncompensated Water Level (0)	4.9909	0.9991	20.02	0	Water Level (in)
LDP-112	Analog	Upper Core Plate to DVI Uncompensated Water Level (0)	4.9755	0.9963	4.696	0	Water Level (in)
LDP-113	Analog	DVI to Bottom of Upper Support Plate Uncompensated Water Level (0)	4.9849	0.9986	15.614	0	Water Level (in)
LDP-115	Analog	Upper Support Plate to Top of Rx Uncompensated Water Level (0)	4.9896	0.9996	24.28	0	Water Level (in)
LDP-116	Analog	Bottom of Rx to Bottom of Bypass Holes Uncompensated Water Level (270)	4.9638	0.9949	77.59	0	Water Level (in)
LDP-117	Analog	Upper Core Spacer Grid to DVI Uncompensated Water Level (180)	4.9838	0.9983	11.383	0	Water Level (in)
LDP-118	Analog	Lower Core Plate to Upper Core Plate Uncompensated Water Level (270)	4.9848	0.9988	39.98	0	Water Level (in)
LDP-119	Analog	Lower Core Plate to Upper Core Support Grid Uncompensated Water Level (180)	4.988	0.9996	40.26	0	Water Level (in)
LDP-127	Analog	Rx Wide Range Uncompensated Water Level	4.999	1.0007	98.97	0	Water Level (in)
LDP-138	Analog	Upper Core Spacer Grid to Bottom of Upper Support Plate Uncompensated Water Level (180)	4.9639	0.9946	39.3	0	Water Level (in)
LDP-139	Analog	Top of Lower Core Plate to Upper Core Spacer Grid Uncompensated Water Level	4.9837	0.9982	24.166	0	Water Level (in)
LDP-140	Analog	Bottom of Rx to Bottom of Flow Holes (180) Uncompensated Water Level	4.9981	1.0014	78.02	0	Water Level (in)
LDP-141	Analog	Upper Core Plate to Lower Support Plate Uncompensated Water Level	4.9843	0.9994	20.135	0	Water Level (in)
LDP-201	Analog	CL-1 Uncompensated Water Level	4.9981	1.0002	2.496	0	Water Level (in)
LDP-202	Analog	CL-2 Uncompensated Water Level	4.9924	0.9994	2.223	0	Water Level (in)
LDP-203	Analog	CL-3 Uncompensated Water Level	4.9923	0.9994	2.532	0	Water Level (in)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
LDP-204	Analog	CL-4 Uncompensated Water Level	4.9594	0.9927	2.47	0	Water Level (in)
LDP-205	Analog	HL-1 Uncompensated Water Level	4.9663	0.9945	4.415	0	Water Level (in)
LDP-206	Analog	HL-2 Uncompensated Water Level	4.9653	0.9944	4.013	0	Water Level (in)
LDP-207	Analog	SG-1 to HL-1 Elbow Plenum Uncompensated Water Level	4.9779	0.9972	18.3	0	Water Level (in)
LDP-208	Analog	SG-2 to HL-2 Elbow Plenum Uncompensated Water Level	4.9825	0.9969	19.247	0	Water Level (in)
LDP-209	Analog	SG-1 to HL-1 Plenum Uncompensated Water Level	4.9954	1.0002	10.939	0	Water Level (in)
LDP-210	Analog	SG-2 to CL-4 Plenum Uncompensated Water Level	4.9677	0.9943	16.988	0	Water Level (in)
LDP-211	Analog	SG-1 to CL-3 Plenum Uncompensated Water Level	4.9613	0.993	16.793	0	Water Level (in)
LDP-212	Analog	SG-2 to CL-2 Plenum Uncompensated Water Level	4.9836	0.9982	16.772	0	Water Level (in)
LDP-213	Analog	SG-1 to CL-1 Plenum Uncompensated Water Level	4.9864	0.9978	16.747	0	Water Level (in)
LDP-214	Analog	SG-2 to HL-2 Plenum Uncompensated Water Level	4.9953	1.0002	11.571	0	Water Level (in)
LDP-215	Analog	SG-1 Long Tube to HL Uncompensated Water Level	4.99	0.9992	102.06	0	Water Level (in)
LDP-216	Analog	SG-2 Short Tube to HL Uncompensated Water Level	4.9717	0.9955	95.55	0	Water Level (in)
LDP-217	Analog	SG-1 Short Tube to HL Uncompensated Water Level	4.9618	0.9932	96.25	0	Water Level (in)
LDP-218	Analog	SG-2 Long Tube to HL Uncompensated Water Level	4.9658	0.9943	103.14	0	Water Level (in)
LDP-219	Analog	SG-1 Long Tube to CL Uncompensated Water Level	4.9867	0.9992	102.45	0	Water Level (in)
LDP-220	Analog	SG-2 Short Tube to CL Uncompensated Water Level	4.9786	0.9971	96	0	Water Level (in)
LDP-221	Analog	SG-1 Short Tube to CL Uncompensated Water Level	4.985	0.9986	95.98	0	Water Level (in)
LDP-222	Analog	SG-2 Long Tube to CL Uncompensated Water Level	4.9628	0.9947	102.71	0	Water Level (in)
LDP-301	Analog	SG-1 WR Uncompensated Water Level	5.0022	1.0006	119.25	0	Water Level (in)
LDP-302	Analog	SG-2 WR Uncompensated Water Level	4.9995	1.0003	119.02	0	Water Level (in)
LDP-303	Analog	SG-1 NR Uncompensated Water Level	4.9699	0.9934	31.81	0	Water Level (in)
LDP-304	Analog	SG-2 NR Uncompensated Water Level	4.9748	0.995	31.52	0	Water Level (in)
LDP-401	Analog	ACC-1 Uncompensated Water Level	4.987	0.9951	38.26	0	Water Level (in)
LDP-402	Analog	ACC-2 Uncompensated Water Level	5.166	1.0332	38.34	0	Water Level (in)
LDP-501	Analog	CMT-1 NR Uncompensated Water Level (Bottom)	4.9834	0.9986	5.31	0	Water Level (in)
LDP-502	Analog	CMT-2 WR Uncompensated Water Level	5.1958	1.0396	57.5	0	Water Level (in)
LDP-503	Analog	CMT-1 NR Uncompensated Water Level (Middle)	4.984	0.9979	46.77	0	Water Level (in)
LDP-504	Analog	CMT-2 NR Uncompensated Water Level (Bottom)	4.9793	0.9972	5.226	0	Water Level (in)
LDP-505	Analog	CMT-1 NR Uncompensated Water Level (Top)	4.994	1	5.486	0	Water Level (in)
LDP-506	Analog	CMT-2 NR Uncompensated Water Level (Middle)	4.9823	0.9975	46.96	0	Water Level (in)
LDP-507	Analog	CMT-1 WR Uncompensated Water Level	5.1887	1.0383	57.5	0	Water Level (in)
LDP-508	Analog	CMT-2 NR Uncompensated Water Level (Top)	4.9913	0.9994	5.309	0	Water Level (in)
LDP-509	Analog	CL-3 to CMT-1 Balance Line Uncompensated Water Level	4.9772	0.9968	78.84	0	Water Level (in)
LDP-510	Analog	CL-1 to CMT-2 Balance Line Uncompensated Water Level	4.9653	0.9942	78.28	0	Water Level (in)
LDP-601	Analog	PZR WR Uncompensated Water Level	5.0006	0.9991	140.47	0	Water Level (in)
LDP-602	Analog	PZR Surge Line Uncompensated Water Level	4.9777	0.997	47.5	0	Water Level (in)
LDP-605	Analog	PZR Upper Surge Line Pipe Uncompensated Water Level	4.9735	0.9963	3.533	0	Water Level (in)
LDP-606	Analog	PZR Surge Line Pipe Level at PZR Inlet Uncompensated Water Level	4.9724	0.9958	18.696	0	Water Level (in)
LDP-607	Analog	PZR Middle Surge Line Pipe Uncompensated Water Level	4.9737	0.996	4.127	0	Water Level (in)
LDP-608	Analog	PZR Lower Surge Line Pipe Uncompensated Water Level	4.9731	0.9964	3.82	0	Water Level (in)
LDP-609	Analog	PZR Surge Line Pipe Uncompensated Water Level at HL-2	4.996	1.0011	14.717	0	Water Level (in)
LDP-610	Analog	ADS1-3 Separator Uncompensated Water Level	5.193	1.0399	45.24	0	Water Level (in)
LDP-611	Analog	ADS4-1 Separator Uncompensated Water Level	5.1628	1.0342	55.97	0	Water Level (in)
LDP-612	Analog	ADS4-2 Separator Uncompensated Water Level	5.1859	1.0386	56.6	0	Water Level (in)
LDP-701	Analog	IRWST Uncompensated Water Level	5.0202	1.0048	115.8	0	Water Level (in)
LDP-801	Analog	PRHR HX Inlet Head Uncompensated Water Level	4.9945	1.0013	6.971	0	Water Level (in)
LDP-802	Analog	PRHR HX WR Uncompensated Water Level	4.9871	0.9998	57.08	0	Water Level (in)
LDP-901	Analog	Primary Sump Uncompensated Water Level	5.0016	1.0015	104.36	0	Water Level (in)
LDP-902	Analog	Secondary Sump Uncompensated Water Level	5.0018	1.0007	102.56	0	Water Level (in)
LDP-903	Analog	CRT Uncompensated Water Level	5.1669	1.0346	32.358	0	Water Level (in)
LDP-905	Analog	Break Separator Uncompensated Water Level	5.1788	1.0378	130.88	0	Water Level (in)
LT-120	Analog	Rx Vessel Capacitance Probe Water Level	5.0053	1.0042	99	50	Water Level (in)
PT-001	Analog	MFP Discharge Pressure	5.0658	1.0121	600	0	Pressure (psig)
PT-002	Analog	MS Header Pressure	4.9759	0.9962	500	0	Pressure (psig)
PT-003	Analog	Lab Barometer	4.9656	0.9944	20	10	Pressure (psia)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
PT-009	Analog	SG-1 PORV Blowdown Pressure	4.9816	0.9983	300	0	Pressure (psig)
PT-010	Analog	SG-2 PORV Blowdown Pressure	4.9924	1.0004	300	0	Pressure (psig)
PT-101	Analog	CL-1 Pressure at Rx Flange	4.9877	0.9986	500	0	Pressure (psig)
PT-102	Analog	CL-2 Pressure at Rx Flange	4.9706	0.9958	10	0	Pressure (psig)
PT-103	Analog	CL-3 Pressure at Rx Flange	4.9646	0.9946	10	0	Pressure (psig)
PT-104	Analog	CL-4 Pressure at Rx Flange	4.9882	0.9988	500	0	Pressure (psig)
PT-107	Analog	Rx Upper Head Pressure	5.0478	1.0096	500	0	Pressure (psig)
PT-108	Analog	Bottom of Rx Pressure	4.9637	0.9938	500	0	Pressure (psig)
PT-109	Analog	DVI-1 Pressure at Rx Flange	4.9874	0.998	500	0	Pressure (psig)
PT-110	Analog	DVI-2 Pressure at Rx Flange	4.9825	0.9984	10	0	Pressure (psig)
PT-111	Analog	Rx Annular Pressure at Flow Bypass Holes	4.9886	0.9982	500	0	Pressure (psig)
PT-112	Analog	Rx Annular Pressure at Bottom of Rx	4.977	0.9958	10	0	Pressure (psig)
PT-113	Analog	Rx Pressure Below Mid-Core Spacer Grid	4.9616	0.9921	500	0	Pressure (psig)
PT-201	Analog	SG-1 Long Tube Pressure (Top)	4.9935	1.0008	500	0	Pressure (psig)
PT-202	Analog	HL-2 Pressure at SG-2 Flange	4.9841	0.9978	500	0	Pressure (psig)
PT-203	Analog	CL Break Pressure at Break Valve	4.988	0.9982	500	0	Pressure (psig)
PT-204	Analog	SG-2 Long Tube Pressure (Top)	4.9974	1.0005	500	0	Pressure (psig)
PT-205	Analog	HL-1 Pressure at SG-1 Flange	4.9838	0.9988	400	0	Pressure (psig)
PT-206	Analog	HL Break Pressure at Break Valve	4.9869	0.9982	500	0	Pressure (psig)
PT-301	Analog	SG-1 Pressure	5.0617	1.0123	500	0	Pressure (psig)
PT-302	Analog	SG-2 Pressure	5.1023	1.0219	500	0	Pressure (psig)
PT-401	Analog	ACC-1 Pressure	4.9908	0.9993	300	0	Pressure (psig)
PT-402	Analog	ACC-2 Pressure	4.9802	0.9975	300	0	Pressure (psig)
PT-501	Analog	CMT-1 Pressure	4.982	0.9979	300	0	Pressure (psig)
PT-502	Analog	CMT-2 Pressure	4.9869	0.998	500	0	Pressure (psig)
PT-602	Analog	PZR NR Pressure	4.9747	0.9988	400	300	Pressure (psig)
PT-603	Analog	PZR NR Pressure	4.9616	0.9944	10	0	Pressure (psig)
PT-604	Analog	PZR WR Pressure	4.9794	0.9942	500	0	Pressure (psig)
PT-605	Analog	ADS1-3 Separator Pressure	4.9725	0.9966	100	0	Pressure (psig)
PT-606	Analog	IRWST Sparger Line Pressure	4.9653	0.995	100	0	Pressure (psig)
PT-610	Analog	ADS4-2 Separator Pressure	4.9845	0.9983	10	0	Pressure (psig)
PT-811	Analog	ADS4-1 Separator Pressure	4.9806	0.9977	10	0	Pressure (psig)
PT-701	Analog	IRWST Pressure	5.0436	1.0087	15	0	Pressure (psig)
PT-801	Analog	CVSP Discharge Pressure	4.9909	0.9993	500	0	Pressure (psig)
PT-802	Analog	RNSP Discharge Pressure	4.9768	0.9952	250	0	Pressure (psig)
PT-901	Analog	Primary Sump Pressure	4.9659	0.9947	10	0	Pressure (psig)
PT-902	Analog	BAMS Header Pressure	4.9988	1.0013	16	0	Pressure (psig)
PT-905	Analog	Break Separator Pressure	5.0265	1.0067	20	0	Pressure (psig)
TF-005	Analog	Lab Ambient Temperature at Ground Level	1000	0	1000	0	Fluid Temperature (F)
TF-006	Analog	Lab Ambient Temperature at Second Level	1000	0	1000	0	Fluid Temperature (F)
TF-007	Analog	Lab Ambient Temperature at Third Level	1000	0	1000	0	Fluid Temperature (F)
TF-009	Analog	SG-1 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-010	Analog	SG-2 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-101	Analog	CL-3 Temperature (SC-101)	450	40	450	40	Fluid Temperature (F)
TF-101-1-3D-2	Analog	CL-1 Downcomer Temperature at 1,3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-1	Analog	CL-1 Downcomer Temperature at 2D, 120 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-2	Analog	CL-1 Downcomer Temperature at 2D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-3	Analog	CL-1 Downcomer Temperature at 2D, 150 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-1	Analog	CL-1 Downcomer Temperature at 3D, 104 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-2	Analog	CL-1 Downcomer Temperature at 3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-3	Analog	CL-1 Downcomer Temperature at 3D, 166 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-1	Analog	CL-1 Downcomer Temperature at 4D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-2	Analog	CL-1 Downcomer Temperature at 4D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-1	Analog	CL-1 Downcomer Temperature at 8D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-2	Analog	CL-1 Downcomer Temperature at 8D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102	Analog	CL-4 Temperature (SC-102)	450	40	450	40	Fluid Temperature (F)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-102-1.3D-2	Analog	CL-2 Downcomer Temperature at 1.3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-1	Analog	CL-2 Downcomer Temperature at 2D, 210 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-2	Analog	CL-2 Downcomer Temperature at 2D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-3	Analog	CL-2 Downcomer Temperature at 2D, 240 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-1	Analog	CL-2 Downcomer Temperature at 3D, 194 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-2	Analog	CL-2 Downcomer Temperature at 3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-3	Analog	CL-2 Downcomer Temperature at 3D, 256 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-4D-2	Analog	CL-2 Downcomer Temperature at 4D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-1	Analog	CL-2 Downcomer Temperature at 8D, 180 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-2	Analog	CL-2 Downcomer Temperature at 8D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-1.3D-2	Analog	CL-3 Downcomer Temperature at 1.3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-1	Analog	CL-3 Downcomer Temperature at 2D, 30 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-2	Analog	CL-3 Downcomer Temperature at 2D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-3	Analog	CL-3 Downcomer Temperature at 2D, 60 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-1	Analog	CL-3 Downcomer Temperature at 3D, 14 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-2	Analog	CL-3 Downcomer Temperature at 3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-3	Analog	CL-3 Downcomer Temperature at 3D, 78 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-4D-2	Analog	CL-3 Downcomer Temperature at 4D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-1	Analog	CL-3 Downcomer Temperature at 8D, 0 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-2	Analog	CL-3 Downcomer Temperature at 8D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-1.3D-2	Analog	CL-4 Downcomer Temperature at 1.3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-1	Analog	CL-4 Downcomer Temperature at 2D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-2	Analog	CL-4 Downcomer Temperature at 2D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-3	Analog	CL-4 Downcomer Temperature at 2D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1	Analog	CL-4 Downcomer Temperature at 3D, 284 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1.5	Analog	CL-4 Downcomer Temperature at 3D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2	Analog	CL-4 Downcomer Temperature at 3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2.5	Analog	CL-4 Downcomer Temperature at 3D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-3	Analog	CL-4 Downcomer Temperature at 3D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1	Analog	CL-4 Downcomer Temperature at 4D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.3	Analog	CL-4 Downcomer Temperature at 4D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.6	Analog	CL-4 Downcomer Temperature at 4D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2	Analog	CL-4 Downcomer Temperature at 4D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.3	Analog	CL-4 Downcomer Temperature at 4D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.6	Analog	CL-4 Downcomer Temperature at 4D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1	Analog	CL-4 Downcomer Temperature at 8D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.3	Analog	CL-4 Downcomer Temperature at 8D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.6	Analog	CL-4 Downcomer Temperature at 8D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2	Analog	CL-4 Downcomer Temperature at 8D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.3	Analog	CL-4 Downcomer Temperature at 8D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.6	Analog	CL-4 Downcomer Temperature at 8D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-105	Analog	CL-1 Temperature (SC-105)	450	40	450	40	Fluid Temperature (F)
TF-106	Analog	CL-2 Temperature (SC-106)	450	40	450	40	Fluid Temperature (F)
TF-107	Analog	CL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-108	Analog	CL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-113	Analog	DVI-1/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-114	Analog	DVI-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-115	Analog	DVI-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-116	Analog	DVI-2/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-118	Analog	Lower Rx Vessel Layer Y-Y at 30 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-120	Analog	Top of Rx at 8.5 inches & 350 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-126	Analog	Lower Rx Vessel Layer A-A at 225 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-127	Analog	Lower Rx Vessel Layer A-A at 315 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-128	Analog	Lower Rx Vessel Layer C-C at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-129	Analog	Lower Rx Vessel Layer C-C at 32 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-130	Analog	Lower Rx Vessel Layer G-G at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-131	Analog	Lower Rx Vessel Layer G-G at 11.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-132	Analog	Upper Rx Vessel Layer F-F at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-133	Analog	Upper Rx Vessel Layer F-F at 8 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-134	Analog	Upper Rx Vessel Layer E-E at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-135	Analog	Upper Rx Vessel Layer E-E at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-140	Analog	HL-2 Temperature at Rx Flange (SC-140)	450	40	450	40	Fluid Temperature (F)
TF-141	Analog	HL-1 Temperature at Rx Flange (SC-141)	450	40	450	40	Fluid Temperature (F)
TF-142	Analog	HL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-143	Analog	HL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-147	Analog	Upper Rx Vessel Layer I-I at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-148	Analog	Upper Rx Vessel Layer I-I at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-149	Analog	Upper Rx Vessel Layer H-H at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-150	Analog	Upper Rx Vessel Layer H-H at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-151	Analog	Upper Rx Vessel Layer E-E at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-152	Analog	Upper Rx Vessel Layer E-E at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-153	Analog	Upper Rx Vessel Layer F-F at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-154	Analog	Upper Rx Vessel Layer F-F at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-155	Analog	Lower Rx Vessel Layer G-G at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-156	Analog	Lower Rx Vessel Layer G-G at 191.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-157	Analog	Lower Rx Vessel Layer C-C at 212 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-158	Analog	Lower Rx Vessel Layer C-C at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-162	Analog	Lower Rx Vessel Layer A-A at 45 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-163	Analog	Lower Rx Vessel Layer A-A at 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-164	Analog	Upper Rx Vessel Layer H-H at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-165	Analog	Upper Rx Vessel Layer H-H at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-166	Analog	Upper Rx Vessel Layer I-I at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-167	Analog	Rx Heater Rod B2-319 at 40.13 inches	1000	0	1000	0	Fluid Temperature (F)
TF-168	Analog	Upper Rx Vessel Layer K-K at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-169	Analog	Upper Rx Vessel Layer M-M at 90 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-170	Analog	Upper Rx Vessel Layer M-M at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-171	Analog	Top of Rx Down to within 0.50 inches of Upper Support Plate Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-172	Analog	Lower Rx Vessel Layer AA-AA at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-173	Analog	Lower Rx Vessel Layer AA-AA at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-201	Analog	CL-1 at RCP-1 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-202	Analog	CL-2 at RCP-2 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-203	Analog	CL-3 at RCP-3 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-204	Analog	CL-4 at RCP-4 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-205	Analog	HL-1 Temperature at SG-1 Head (SC-205)	450	40	450	40	Fluid Temperature (F)
TF-206	Analog	HL-2 Temperature at SG-2 Head (SC-206)	450	40	450	40	Fluid Temperature (F)
TF-207	Analog	SG-1 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-208	Analog	SG-2 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-209	Analog	SG-1 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-210	Analog	SG-2 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-211	Analog	SG-1 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-212	Analog	SG-2 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-213	Analog	SG-1 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-214	Analog	SG-2 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-215	Analog	SG-1 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-216	Analog	SG-2 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-217	Analog	SG-1 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-218	Analog	SG-2 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-221	Analog	CL-3 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-222	Analog	CL-4 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-223	Analog	CL-3 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-224	Analog	CL-4 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-225	Analog	CL-3 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-226	Analog	CL-4 T/C Rod at 1.75 Inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-227	Analog	CL-3 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-228	Analog	CL-4 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-229	Analog	CL-3 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-230	Analog	CL-4 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-231	Analog	CL-3 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-232	Analog	CL-4 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-1	Analog	CL-1 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-2	Analog	CL-1 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-3	Analog	CL-1 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-1	Analog	CL-2 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-2	Analog	CL-2 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-3	Analog	CL-2 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-1	Analog	CL-3 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-2	Analog	CL-3 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-3	Analog	CL-3 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-1	Analog	CL-4 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-2	Analog	CL-4 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-3	Analog	CL-4 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-255	Analog	CL-1 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-256	Analog	CL-2 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-257	Analog	CL-3 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-258	Analog	CL-4 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-301	Analog	SG-1 Steam Temperature (SC-301)	450	40	450	40	Fluid Temperature (F)
TF-305	Analog	SG-1 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-306	Analog	SG-2 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-307	Analog	SG-1 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-308	Analog	SG-2 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-310	Analog	SG-2 Steam Temperature (SC-310)	450	40	450	40	Fluid Temperature (F)
TF-311	Analog	SG-1 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-312	Analog	SG-2 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-401	Analog	ACC-1 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-402	Analog	ACC-2 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-403	Analog	ACC-1 N2Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-404	Analog	ACC-2 N2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-405	Analog	ACC-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-406	Analog	ACC-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-501	Analog	CMT-1 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-502	Analog	CMT-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-503	Analog	CMT-1 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-504	Analog	CMT-2 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-505	Analog	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-506	Analog	CMT-2 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-507	Analog	CMT-1 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-508	Analog	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-509	Analog	CMT-1 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-510	Analog	CMT-2 Long T/C Rod at 20.87 Inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-511	Analog	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-512	Analog	CMT-2 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-513	Analog	CMT-1 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-514	Analog	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-515	Analog	CMT-1 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-516	Analog	CMT-2 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-517	Analog	CMT-1 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-518	Analog	CMT-2 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-519	Analog	CMT-1 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-520	Analog	CMT-2 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-521	Analog	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-522	Analog	CMT-2 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-523	Analog	CMT-1 Long T/C Rod at 49.05 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-524	Analog	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-525	Analog	CMT-1 at 1/2 Upper-Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-526	Analog	CMT-2 SPARGER 2/3 TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-527	Analog	CMT-1 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-528	Analog	CMT 2/3 HEAD TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-529	Analog	CMT-1 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-530	Analog	CMT-2 Long T/C Rod at 51.87 Inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-531	Analog	CMT-1 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-532	Analog	CMT-2 Long T/C Rod at 56.61 Inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-533	Analog	CMT-1 CL Balance Line at CL-3 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-535	Analog	CMT-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-536	Analog	CMT-2 CL Balance Line at CL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-537	Analog	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-538	Analog	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-539	Analog	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-540	Analog	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-541	Analog	CMT-1 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-542	Analog	CMT-2 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-543	Analog	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-544	Analog	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-546	Analog	CMT-2 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-547	Analog	CMT-1 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-548	Analog	CMT-2 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-549	Analog	CMT-1 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-550	Analog	CMT-2 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-551	Analog	CMT-1 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-552	Analog	CMT-2 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-553	Analog	CMT-1 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-554	Analog	CMT-2 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-555	Analog	CMT-1 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-556	Analog	CMT-2 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-557	Analog	CMT-1 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-558	Analog	CMT-2 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-559	Analog	CMT-1 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-560	Analog	CMT-2 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-581	Analog	CMT-1 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-582	Analog	CMT-2 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-583	Analog	CMT-1 Short T/C Rod (315 degrees) 14.19 Inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-584	Analog	CMT-2 Short T/C Rod (315 degrees) 14.19 Inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-601	Analog	PZR Surge Line at PZR Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-602	Analog	ADS1-3 Common Line at PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-603	Analog	PZR Surge Line at HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-605	Analog	PZR Water Space Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-608	Analog	PZR Temperature (SC-608)	450	40	450	40	Fluid Temperature (F)
TF-609	Analog	ADS4-1 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-610	Analog	ADS4-2 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-614	Analog	PZR Steam Vent Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-615	Analog	ADS1-3 Common Line From PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-616	Analog	ADS1-3 Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-617	Analog	ADS1-3 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-618	Analog	ADS4-2 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-619	Analog	ADS4-1 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-620	Analog	ADS4-2 Inlet From HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-621	Analog	ADS4-1 Inlet From HL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-622	Analog	ADS4-2 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-623	Analog	ADS4-1 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-701	Analog	IRWST/PRHR T/C Rod at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-702	Analog	IRWST/PRHR T/C Rod at 7.98 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-703	Analog	IRWST/PRHR T/C Rod at 15.97 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-704	Analog	IRWST/PRHR T/C Rod at 25.85 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-705	Analog	IRWST/PRHR T/C Rod at 35.73 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-706	Analog	IRWST/PRHR T/C Rod at 45.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-707	Analog	IRWST/PRHR T/C Rod at 55.49 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-708	Analog	IRWST/PRHR T/C Rod at 65.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-709	Analog	IRWST/PRHR T/C Rod at 75.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-710	Analog	IRWST/PRHR T/C Rod at 86.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-711	Analog	IRWST/PRHR T/C Rod at 97.47 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-712	Analog	IRWST/PRHR T/C Rod at 108.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-713	Analog	IRWST Discharge to DVI-01 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-714	Analog	IRWST Discharge to DVI-02 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-715	Analog	IRWST Sparger T/C Rod at 8.97 inches Temperature (SC-715)	1000	0	1000	0	Fluid Temperature (F)
TF-716	Analog	IRWST Sparger T/C Rod at 36.63 inches Temperature	240	40	240	40	Fluid Temperature (F)
TF-717	Analog	IRWST Sparger T/C Rod at 66.34 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-718	Analog	IRWST Sparger T/C Rod at 98.45 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-719	Analog	IRWST Sparger Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-720	Analog	IRWST/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-721	Analog	IRWST/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-722	Analog	IRWST Steam Exhaust Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-723	Analog	IRWST/Primary Sump Overflow Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-801	Analog	CVSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-802	Analog	RNSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-803	Analog	PRHR HX Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-804	Analog	PRHR HX Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-805	Analog	PRHR HX Long Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-806	Analog	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-808	Analog	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-809	Analog	PRHR HX Long Tube at Center Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-810	Analog	PRHR HX Short Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-811	Analog	PRHR HX Long Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-812	Analog	PRHR HX Outlet Head Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-813	Analog	RNSP Discharge to DVI-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-814	Analog	RNSP Discharge to DVI-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-901	Analog	Primary Sump Inlet from Fill Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-902	Analog	Secondary Sump Temperature (SC-902)	240	40	240	40	Fluid Temperature (F)
TF-903	Analog	Primary Sump Temperature (SC-903)	240	40	240	40	Fluid Temperature (F)
TF-904	Analog	Primary Sump/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-905	Analog	Primary Sump at Secondary Sump Crossover Level Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-906	Analog	Primary Sump Exhaust Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-907	Analog	Primary Sump at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-908	Analog	Break Separator Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-909	Analog	Primary Sump/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-910	Analog	CRP Discharge to Primary Sump Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-911	Analog	CRP Discharge to IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-912	Analog	Break Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-913	Analog	Break Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-914	Analog	Condensate Return Tank Temperature (SC-914)	200	40	200	40	Fluid Temperature (F)
TF-915	Analog	Break Separator 6-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-916	Analog	BAMS Header 10-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-917	Analog	BAMS Header Temperature (SC-917)	240	40	240	40	Fluid Temperature (F)
TF-918	Analog	Break Separator 8-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TH-103	Analog	Rx Heater Rod Temperature (SCTH-101-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-211	Analog	Rx Heater Rod Temperature (SCTH-103-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-305	Analog	Rx Heater Rod Temperature (SCTH-304-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-309	Analog	Rx Heater Rod Temperature (SCTH-102-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-401	Analog	Rx Heater Rod Temperature (SCTH-104-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-507	Analog	Rx Heater Rod Temperature (SCTH-314-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-601	Analog	PZR Heater Rod #1	1000	0	1000	0	Internal Rod Temperature (F)
TH-602	Analog	PZR Heater Rod #2	1000	0	1000	0	Internal Rod Temperature (F)
TH-603	Analog	PZR Heater Rod #3	1000	0	1000	0	Internal Rod Temperature (F)
TH-604	Analog	PZR Heater Rod #4	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-1	Analog	Core Thermocouple Rod D-001 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-2	Analog	Core Thermocouple Rod D-001 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-3	Analog	Core Thermocouple Rod D-001 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-4	Analog	Core Thermocouple Rod D-001 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-5	Analog	Core Thermocouple Rod D-001 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-6	Analog	Core Thermocouple Rod D-001 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-1	Analog	Core Thermocouple Rod D-303 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-2	Analog	Core Thermocouple Rod D-303 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-3	Analog	Core Thermocouple Rod D-303 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-4	Analog	Core Thermocouple Rod D-303 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-5	Analog	Core Thermocouple Rod D-303 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-6	Analog	Core Thermocouple Rod D-303 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-1	Analog	Core Thermocouple Rod E-308 at 22.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-2	Analog	Core Thermocouple Rod E-308 at 34.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-3	Analog	Core Thermocouple Rod E-308 at 46.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-4	Analog	Core Thermocouple Rod D-001 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-5	Analog	Core Thermocouple Rod D-001 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-6	Analog	Core Thermocouple Rod D-303 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-1	Analog	Core Thermocouple Rod D-313 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-2	Analog	Core Thermocouple Rod D-313 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-3	Analog	Core Thermocouple Rod D-313 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-4	Analog	Core Thermocouple Rod D-313 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-5	Analog	Core Thermocouple Rod D-313 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-6	Analog	Core Thermocouple Rod D-313 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-1	Analog	Core Thermocouple Rod F-318 at 28.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-2	Analog	Core Thermocouple Rod F-318 at 40.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-3	Analog	Core Thermocouple Rod F-318 at 51.86 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-4	Analog	Core Thermocouple Rod D-303 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-5	Analog	Core Thermocouple Rod D-313 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-6	Analog	Core Thermocouple Rod D-313 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TW-104-1.5D-2	Analog	CL-4 Downcomer Wall Temperature at 1.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-2	Analog	CL-4 Downcomer Wall Temperature at 3.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-3	Analog	CL-4 Downcomer Wall Temperature at 3.5D, 345 degrees	1000	0	1000	0	Wall Temperature (F)
TW-201	Analog	SG-1 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-202	Analog	SG-2 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-203	Analog	SG-1 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-204	Analog	SG-2 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-205	Analog	SG-1 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-206	Analog	SG-2 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-208	Analog	SG-2 Long Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-209	Analog	SG-1 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-210	Analog	SG-2 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-601	Analog	ADS1-3 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-602	Analog	ADS4-2 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)

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Tag Name	Data Type	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TW-803	Analog	ADS4-1 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-801	Analog	PRHR HX Long Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-802	Analog	PRHR HX Short Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-803	Analog	PRHR HX Long Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-804	Analog	PRHR HX Short Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-805	Analog	PRHR HX Short Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-806	Analog	PRHR HX Long Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-807	Analog	PRHR HX Short Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-808	Analog	PRHR HX Long Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-905	Analog	Break Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
DASRunning	Discrete	DSC Engine is running, but not necessarily logging data	N/A	N/A	N/A	N/A	N/A
DASLogging	Discrete	DSC Engine is logging data to the Citadel database	N/A	N/A	N/A	N/A	N/A
FVM-004	Analog	Catch Tank Steam Flow Rate	4.9885	1.001	70	0	Steam Flow Rate (cfm)
PT-004	Analog	Temp Steam Pressure for FVM-002	5.0026	1.0016	400	0	Pressure (psig)

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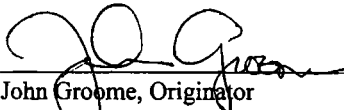
DEPARTMENT OF NUCLEAR ENGINEERING &
RADIATION HEALTH PHYSICS

**ADVANCED THERMAL HYDRAULIC
RESEARCH LABORATORY**

**STEAM GENERATOR U-TUBE CONDENSATION
TEST @ 300 PSIG WITH 2.5% NITROGEN**

NRC-COND-07

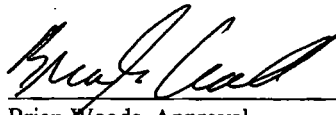
Revision 0



John Groome, Originator
Facility Operations Manager
Research Assistant

5/10/2007

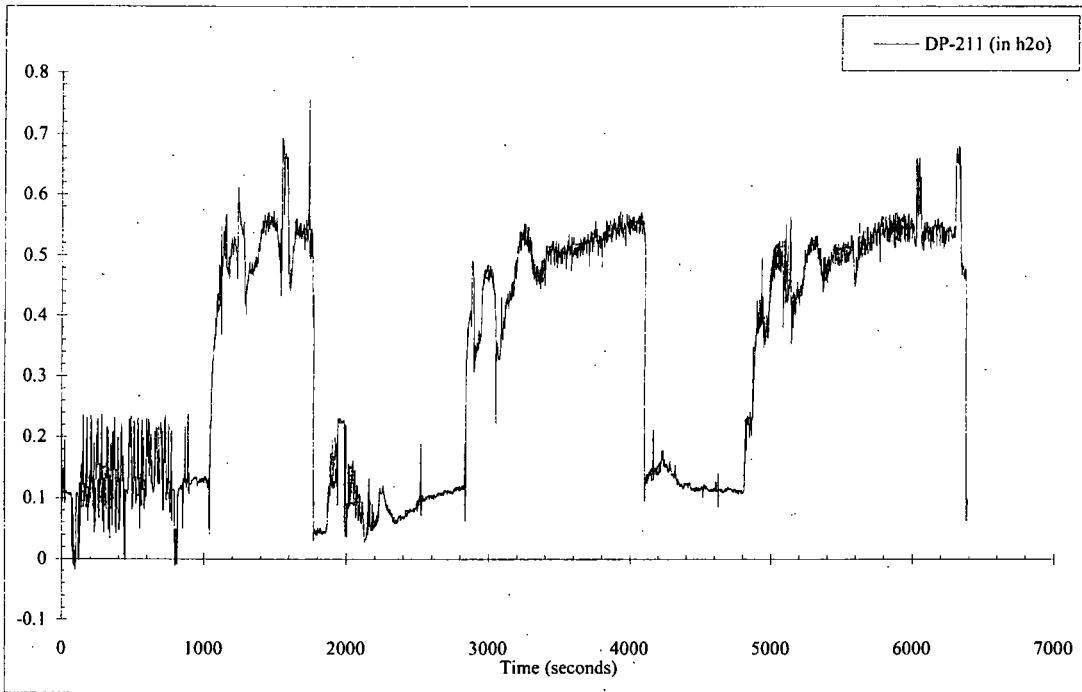
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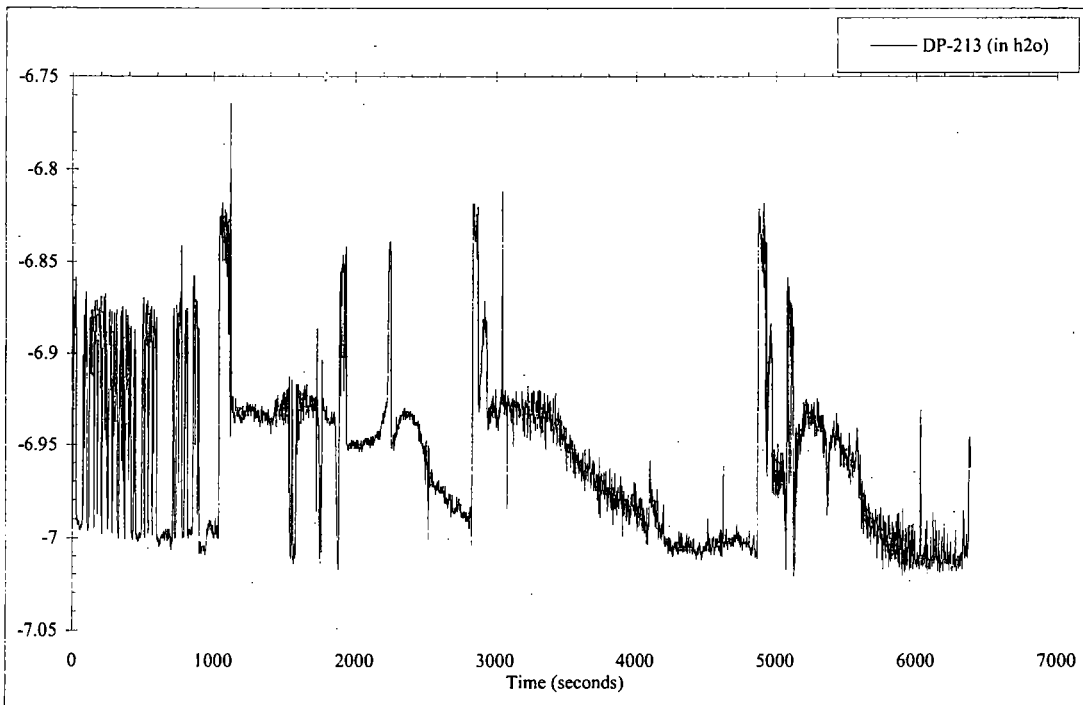
Brian Woods, Approval
Program Manager
Assistant Professor

5/10/2007

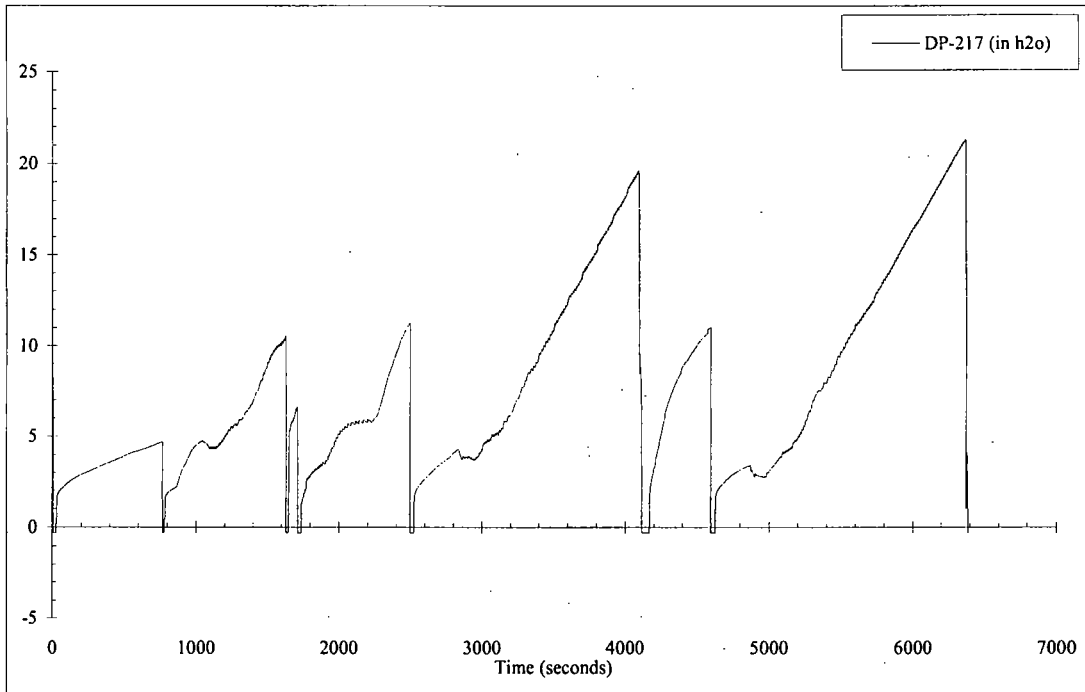
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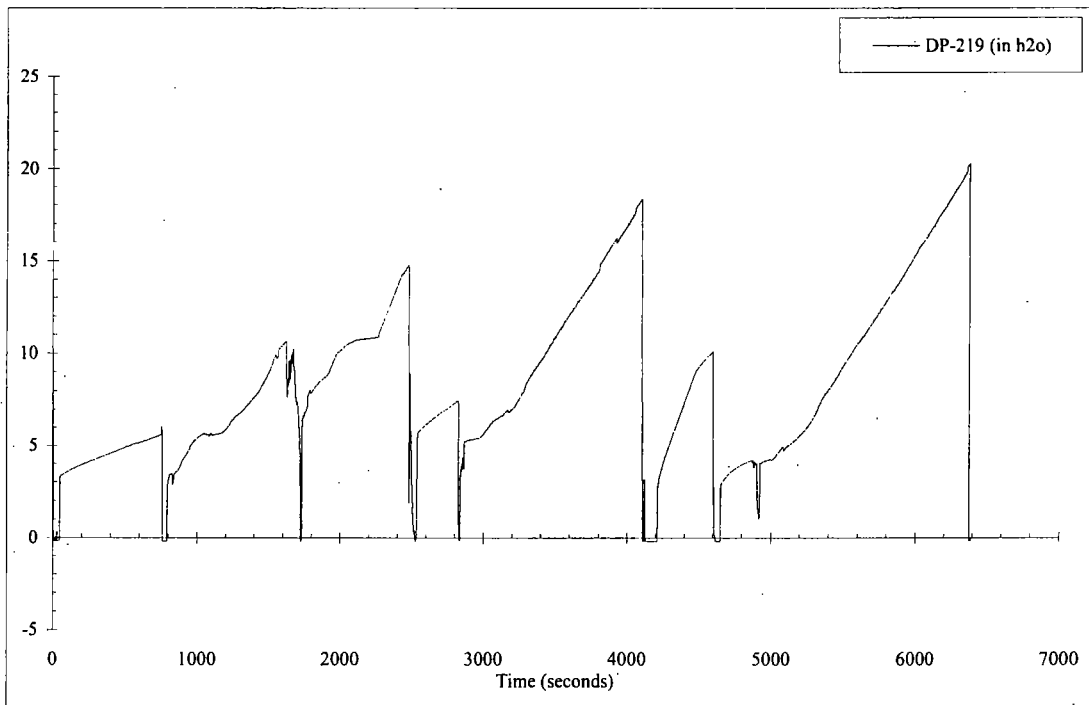
SG-1 Short Tube Entrance Losses



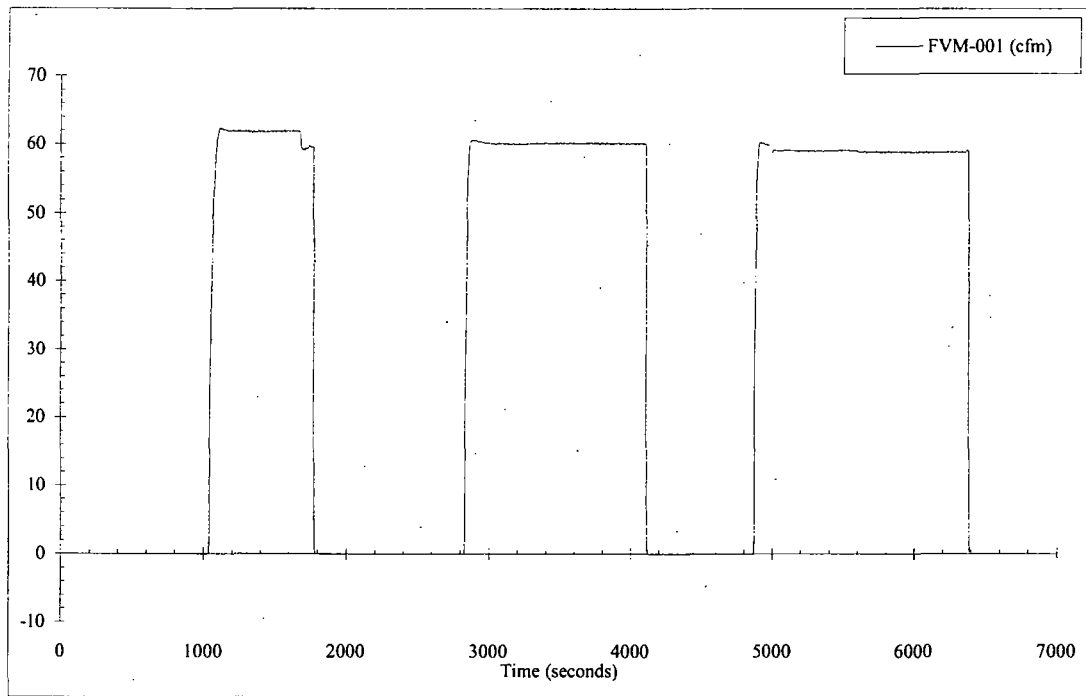
SG-1 Long Tube Exit Losses



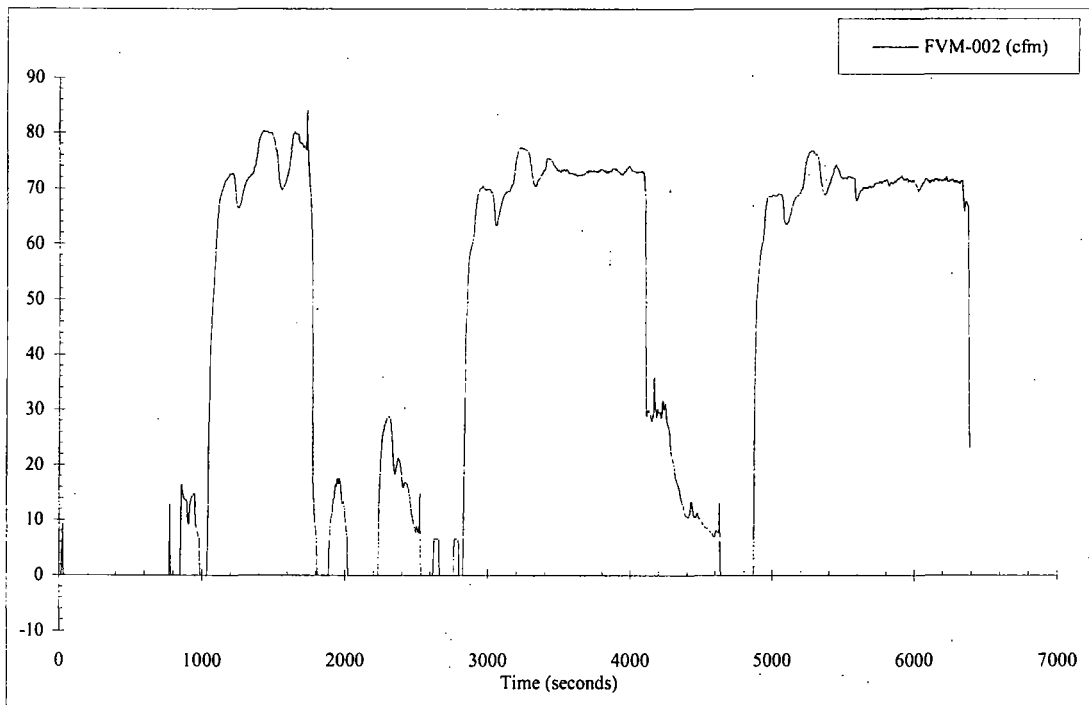
Separator Uncompensated Water Level



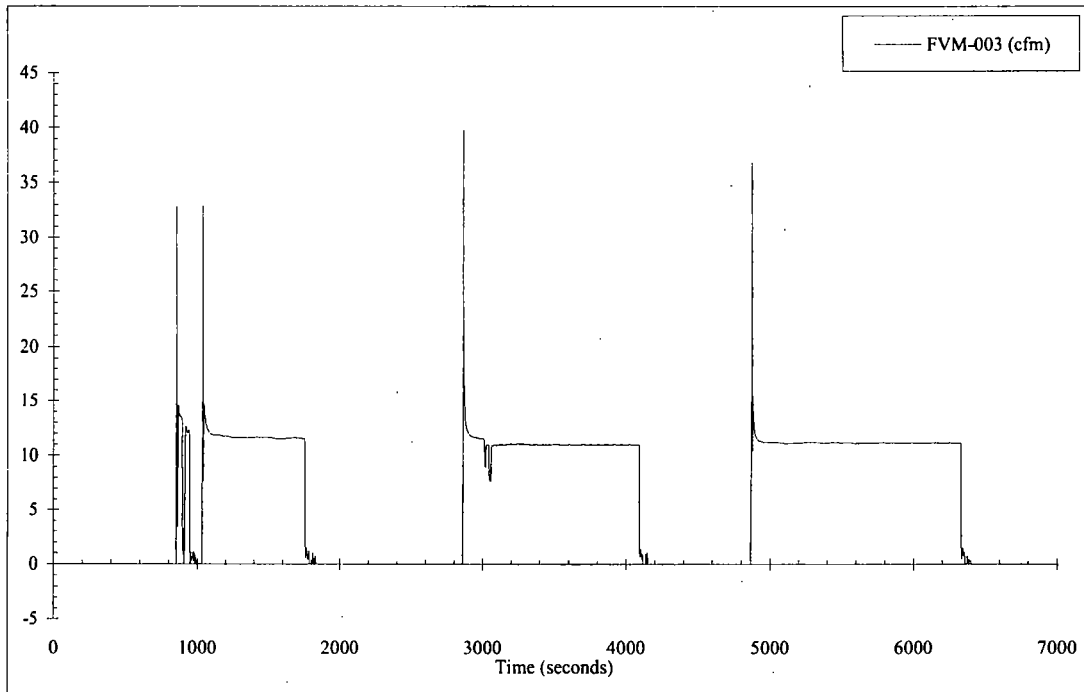
Catch Tank Uncompensated Water Level



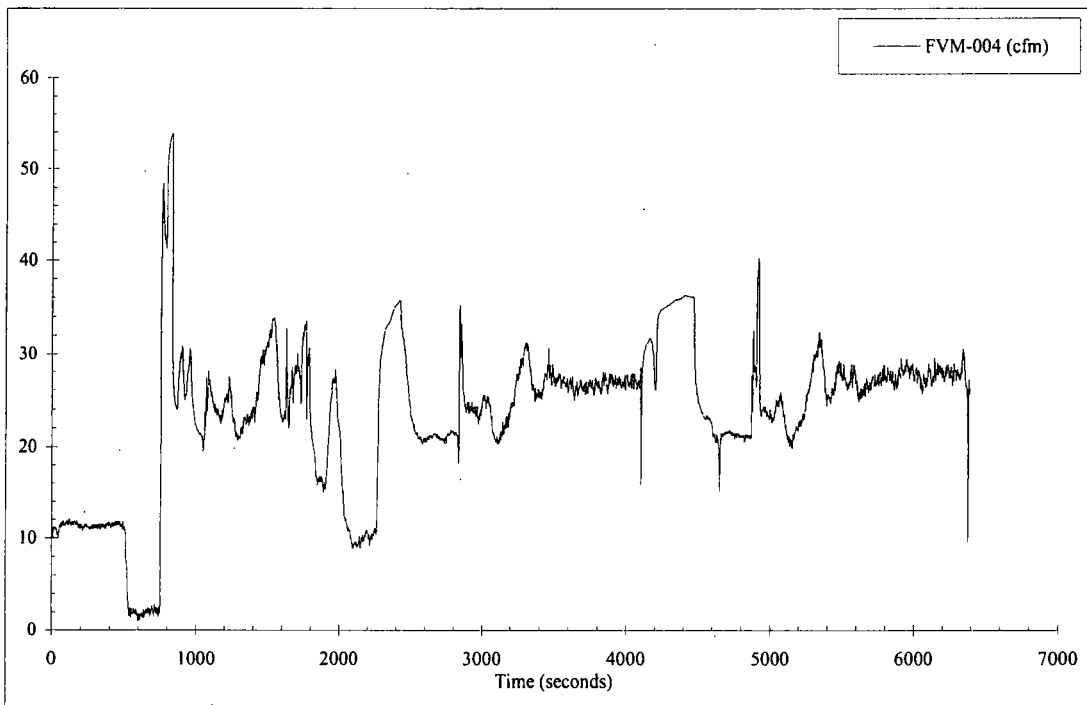
Separator Outlet Steam Flowrate



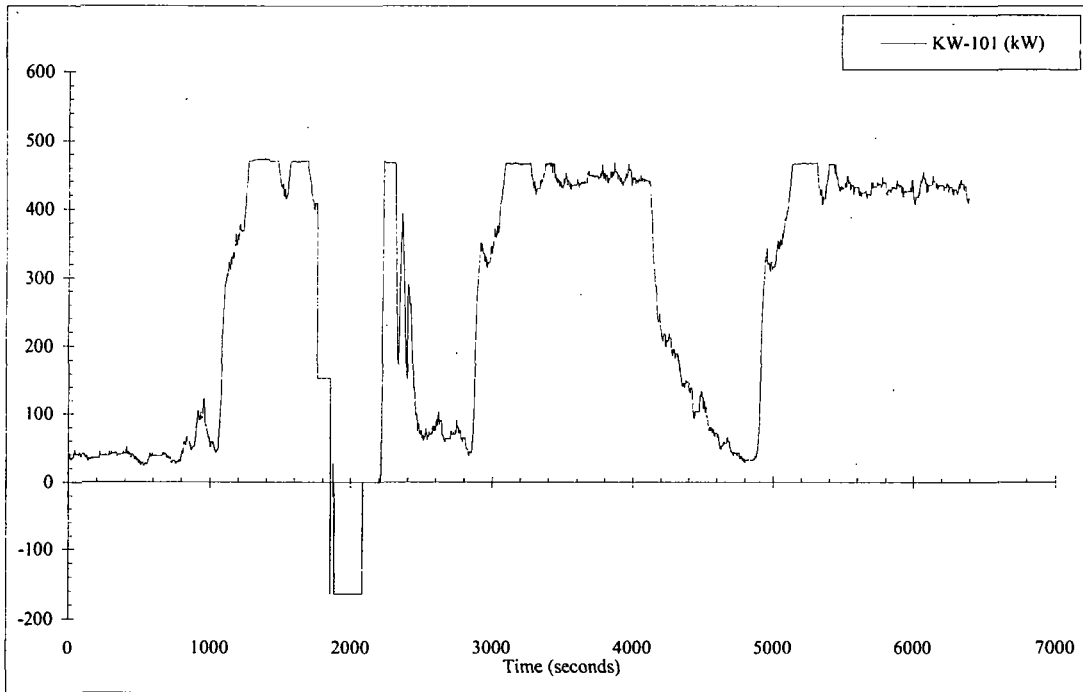
SG-2 Main Steam Flow



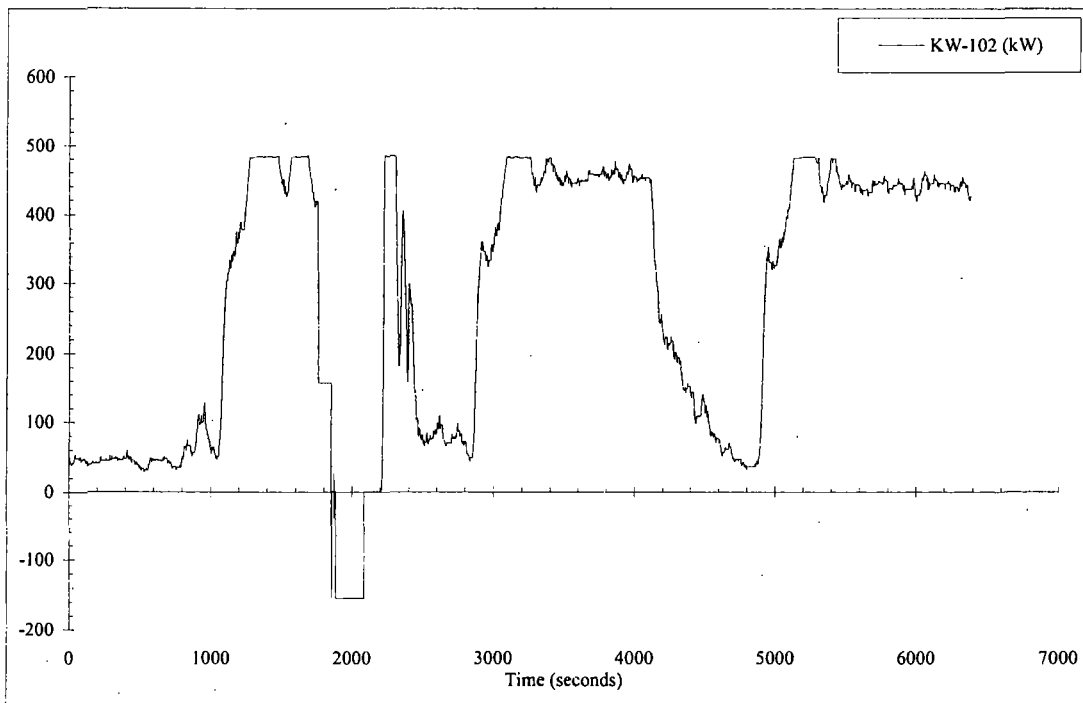
Main Steam Total Flow



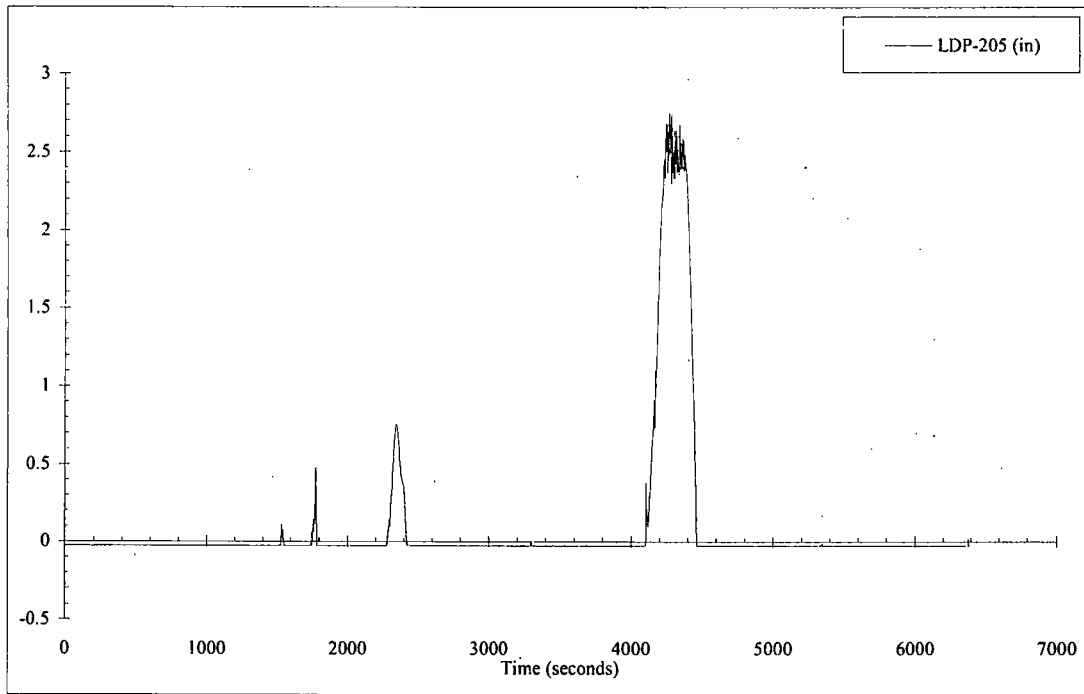
Catch Tank Steam Flow Rate



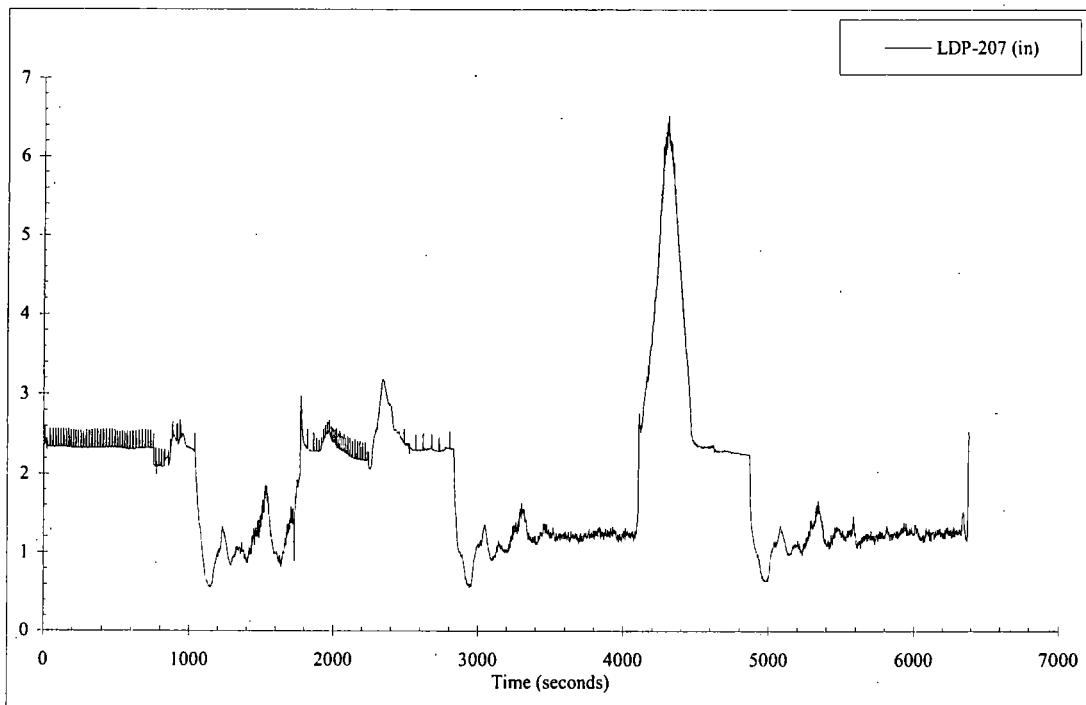
Rx Heater Group 1 Power



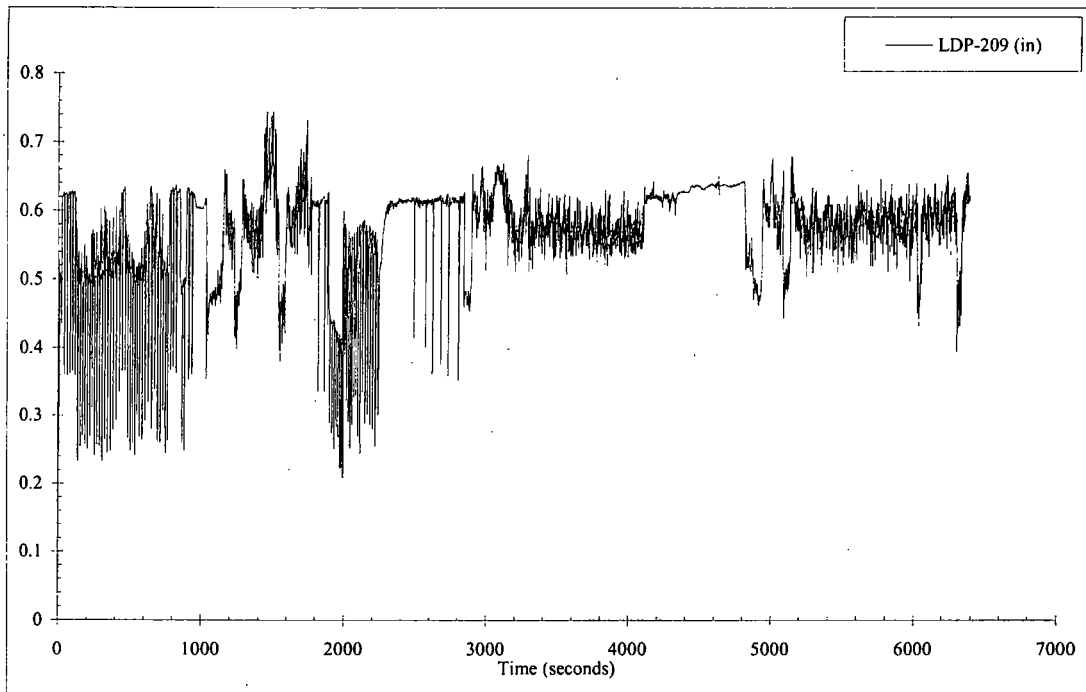
Rx Heater Group 2 Power



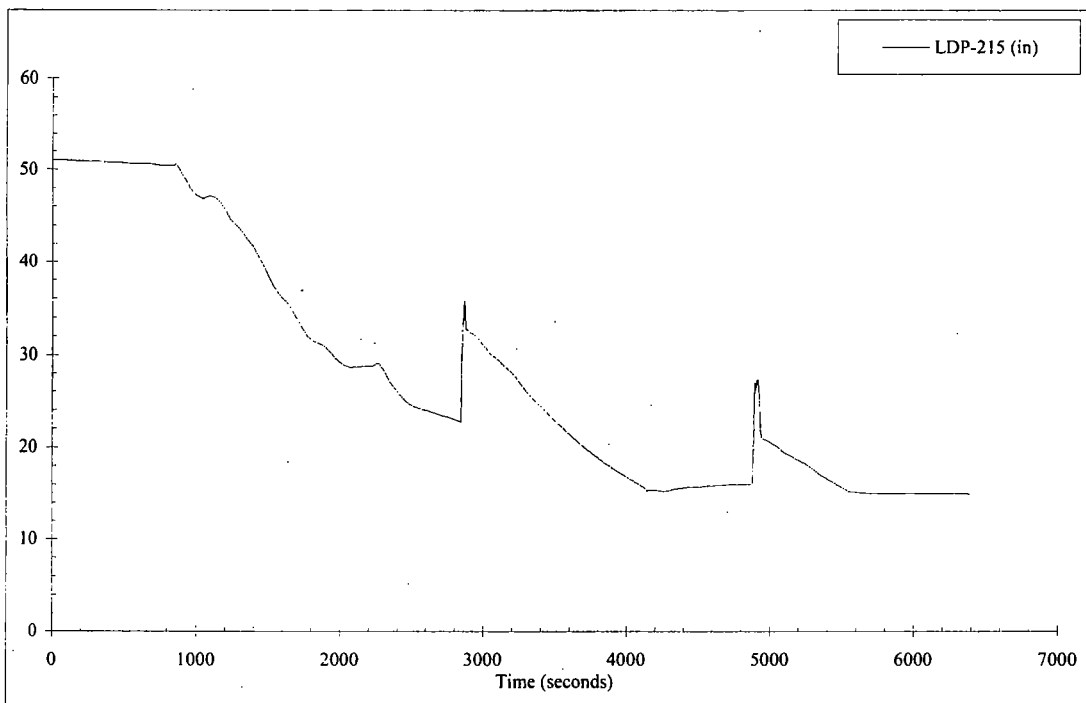
HL-1 Uncompensated Water Level



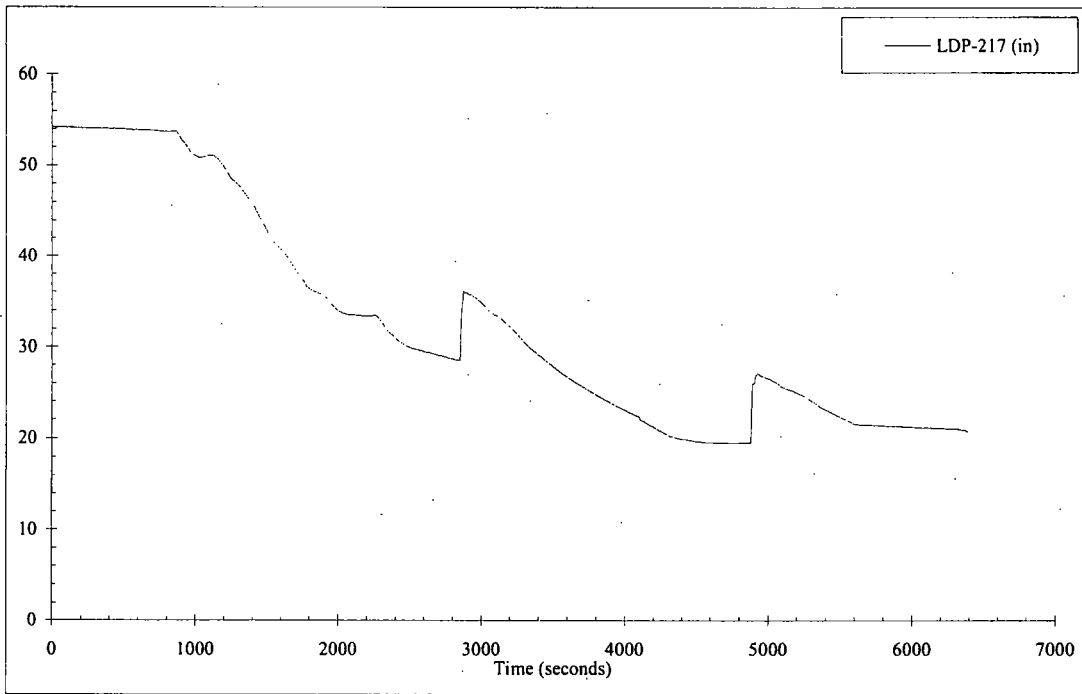
SG-1 to HL-1 Elbow Plenum Uncompensated Water Level



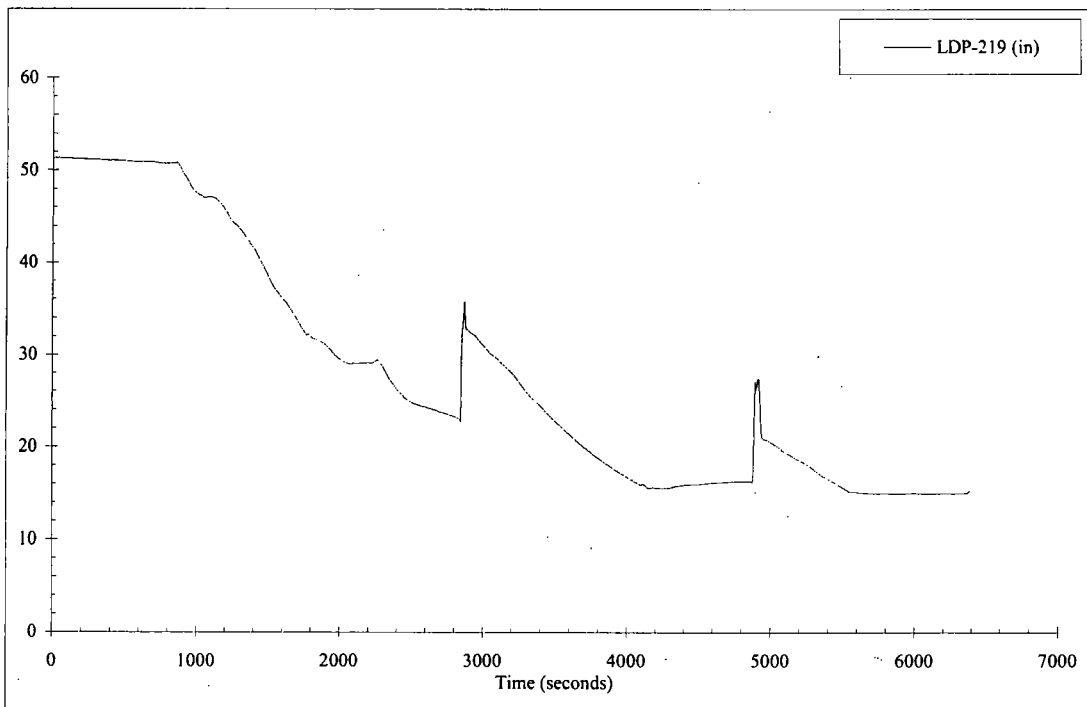
SG-1 to HL-1 Plenum Uncompensated Water Level



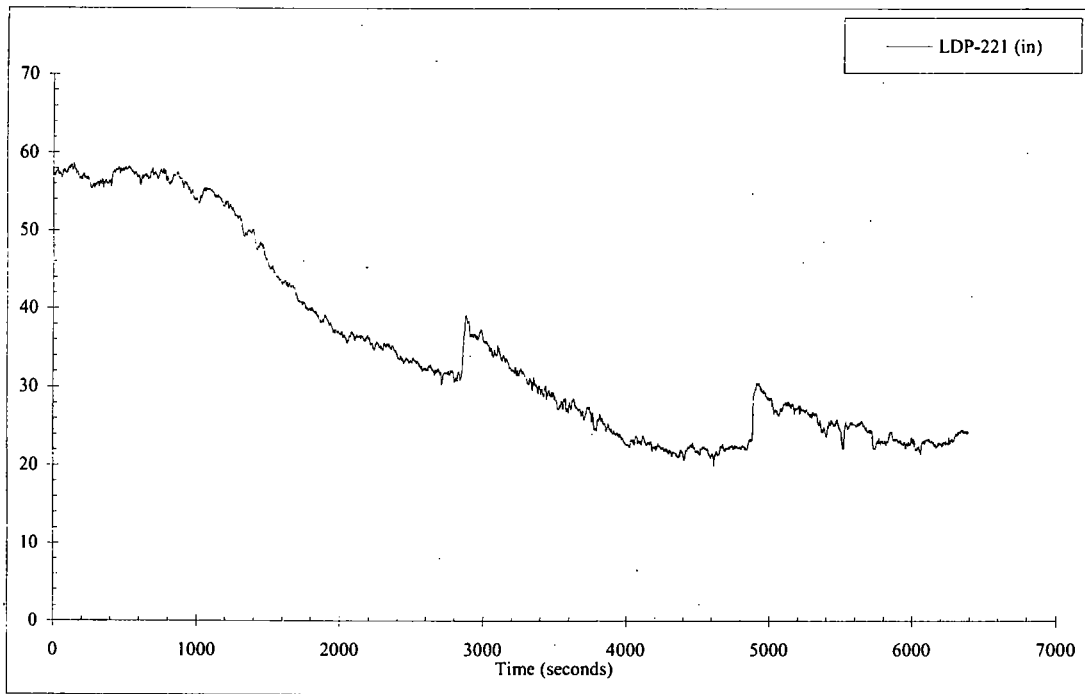
SG-1 Long Tube to HL Uncompensated Water Level



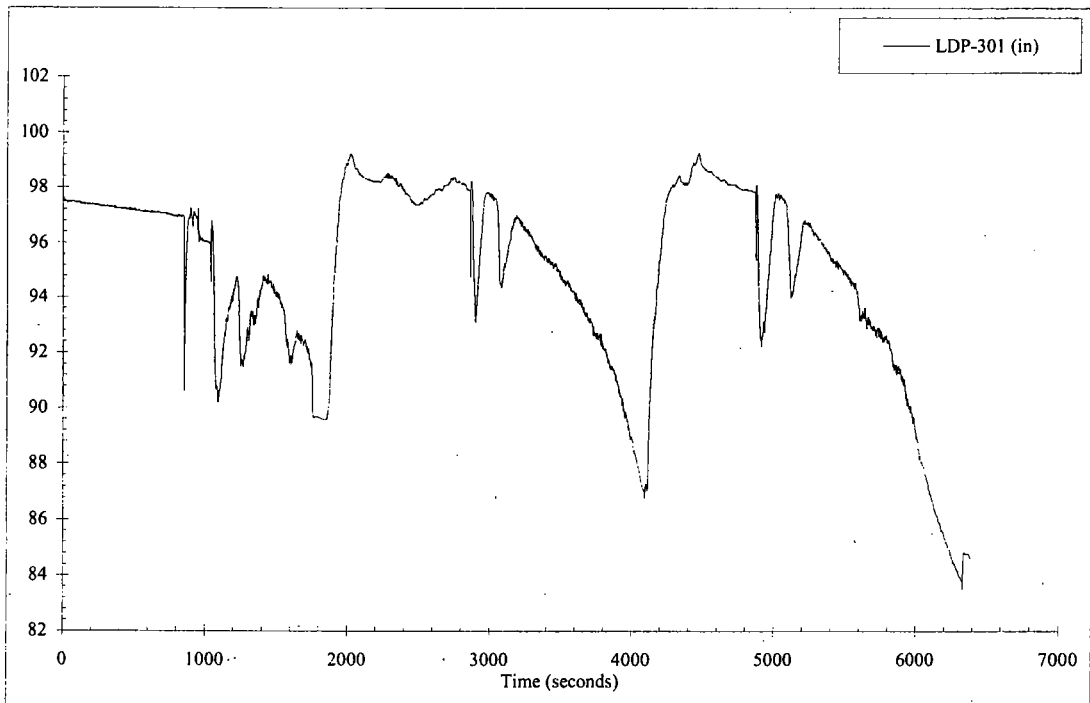
SG-1 Short Tube to HL Uncompensated Water Level



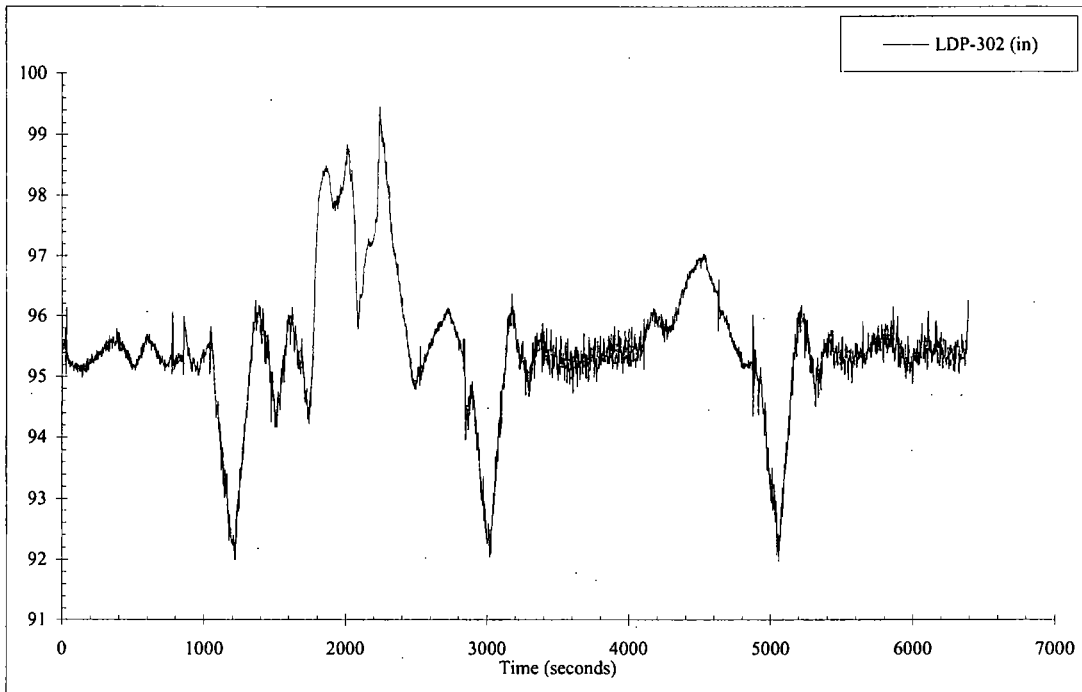
SG-1 Long Tube to CL Uncompensated Water Level



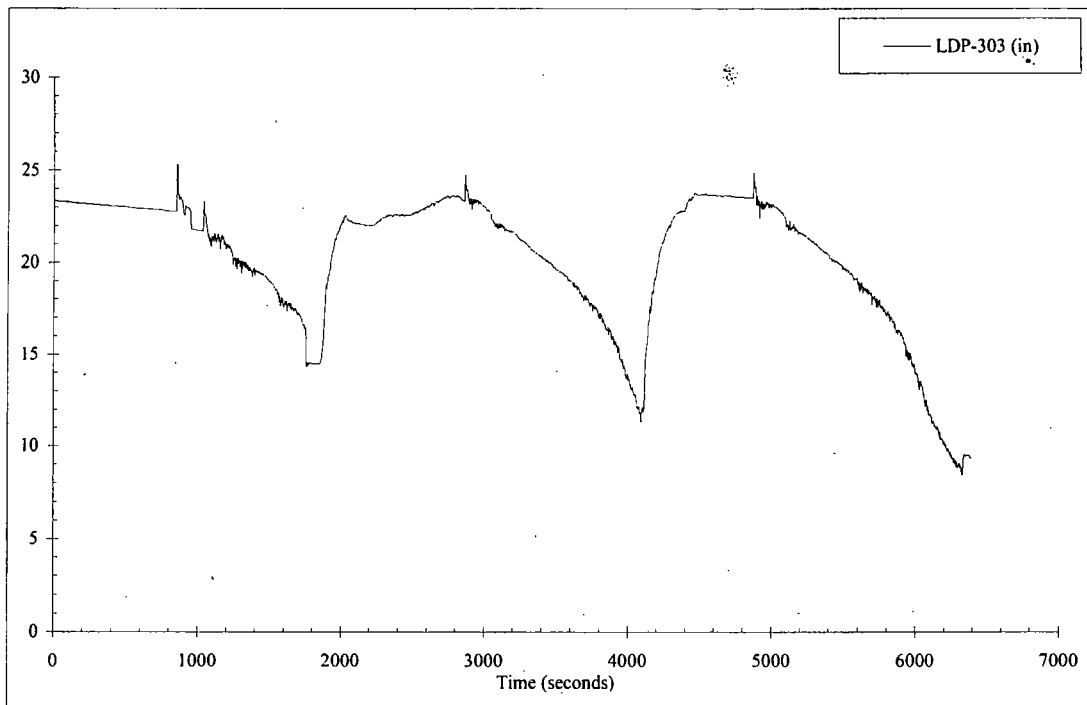
SG-1 Short Tube to CL Uncompensated Water Level



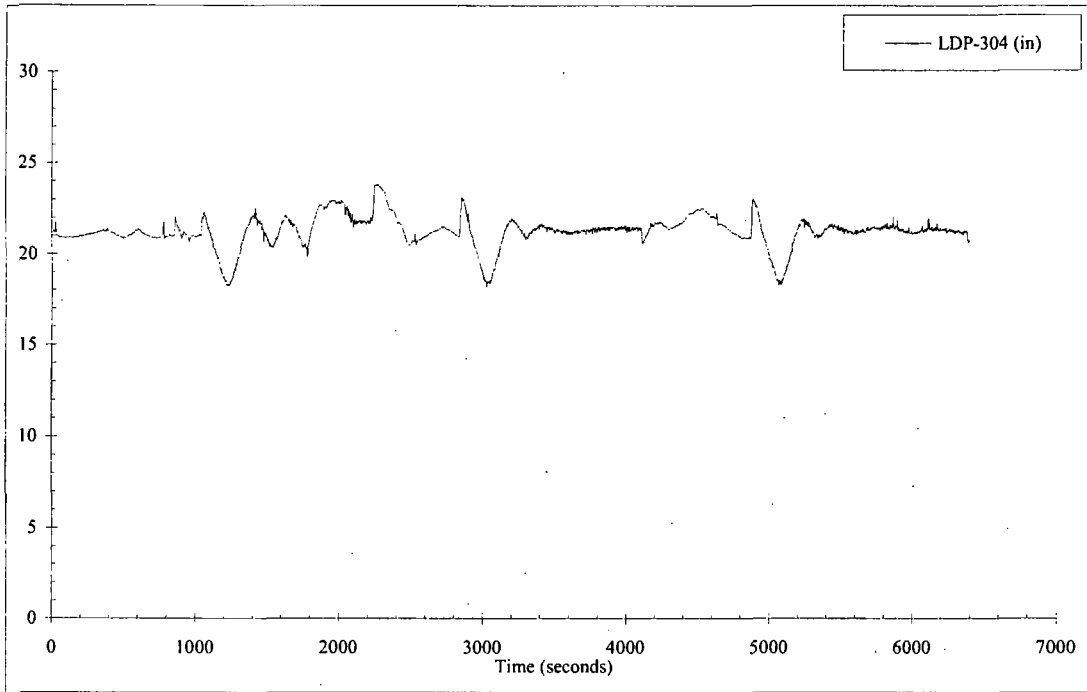
SG-1 WR Uncompensated Water Level



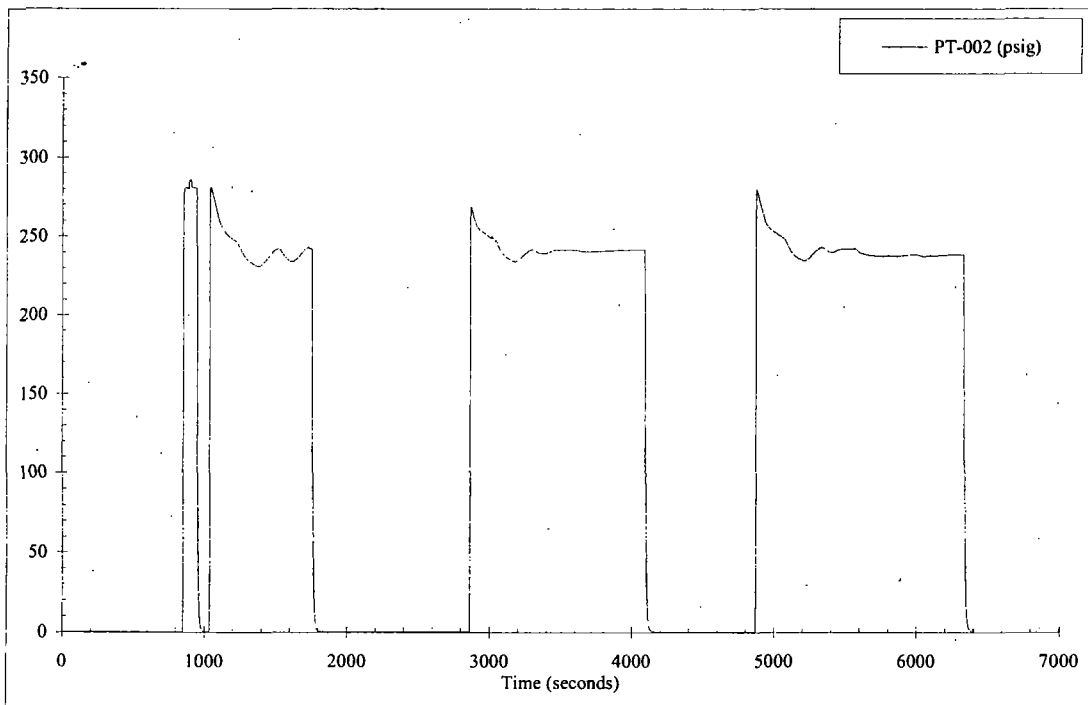
SG-2 WR Uncompensated Water Level



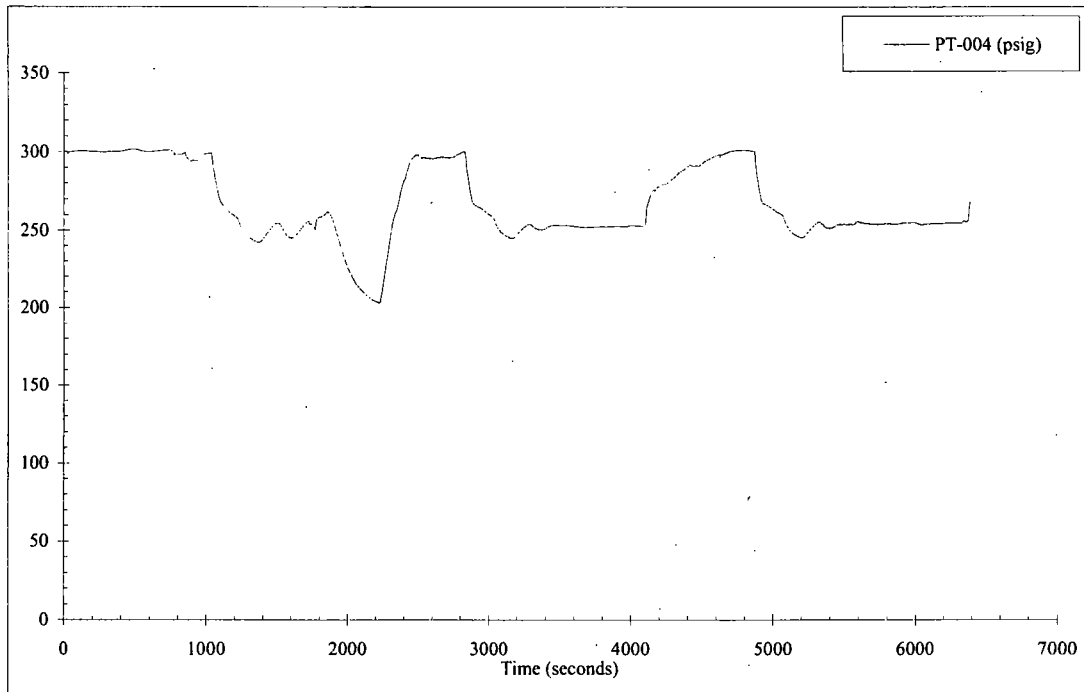
SG-1 NR Uncompensated Water Level



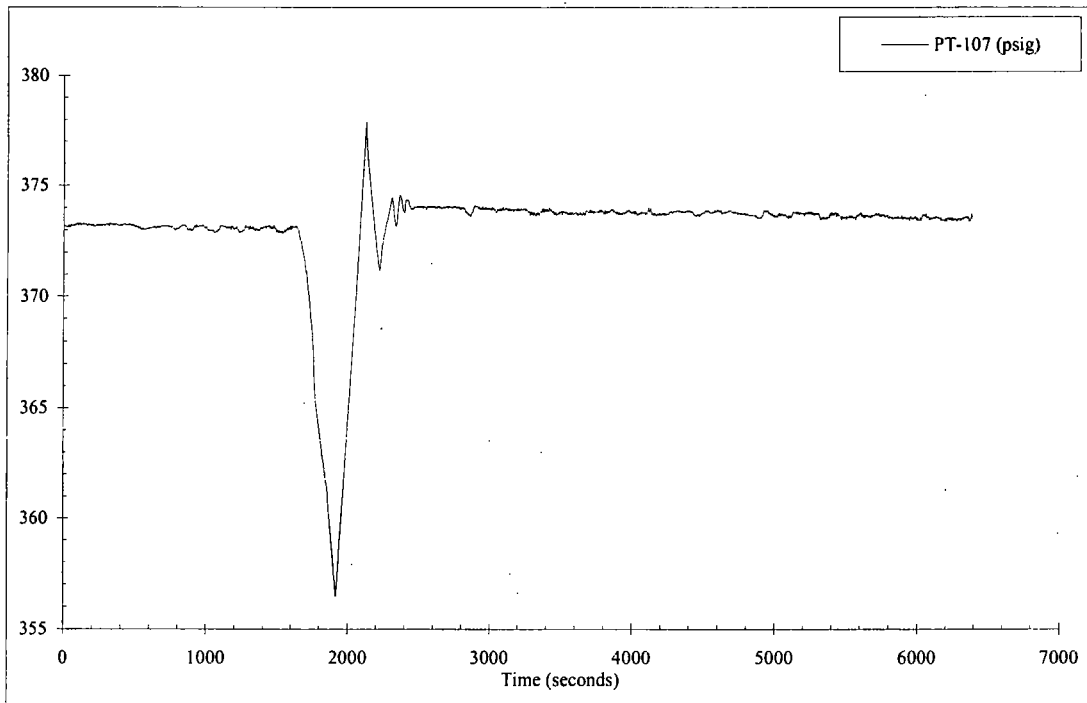
SG-2 NR Uncompensated Water Level



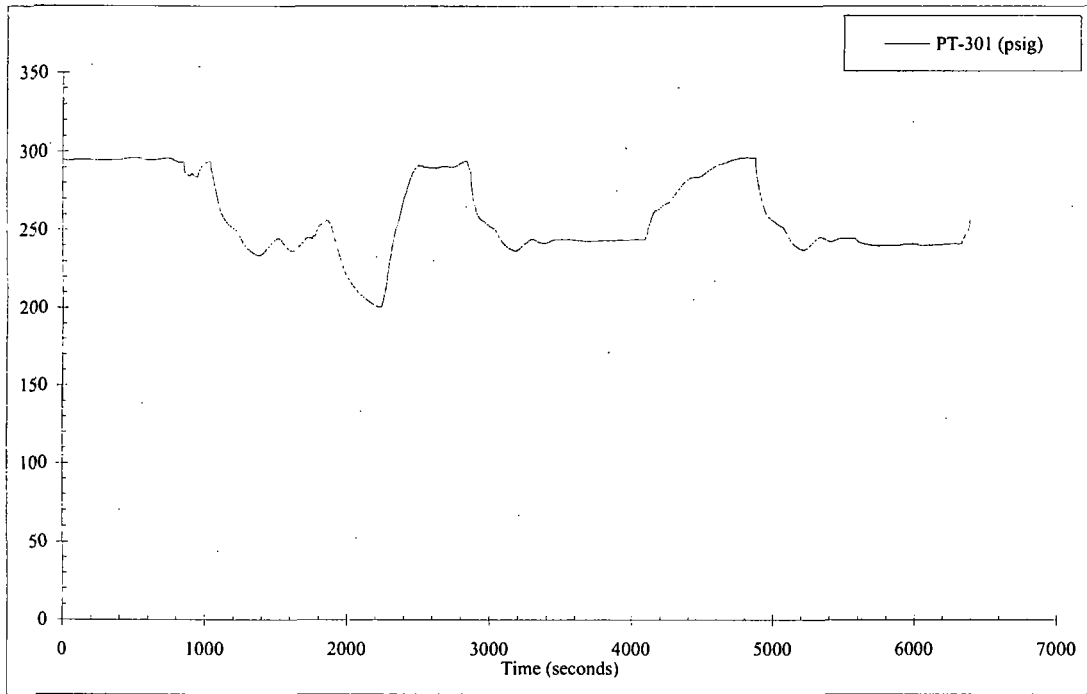
MS Header Pressure



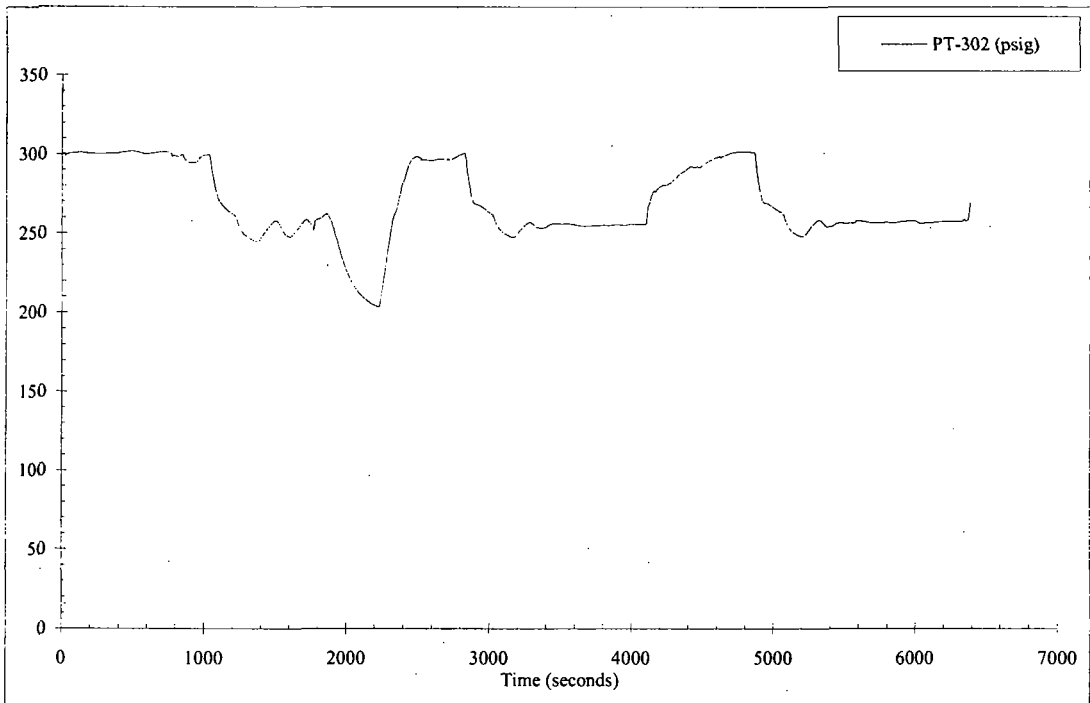
Temp Steam Pressure for FVM-002



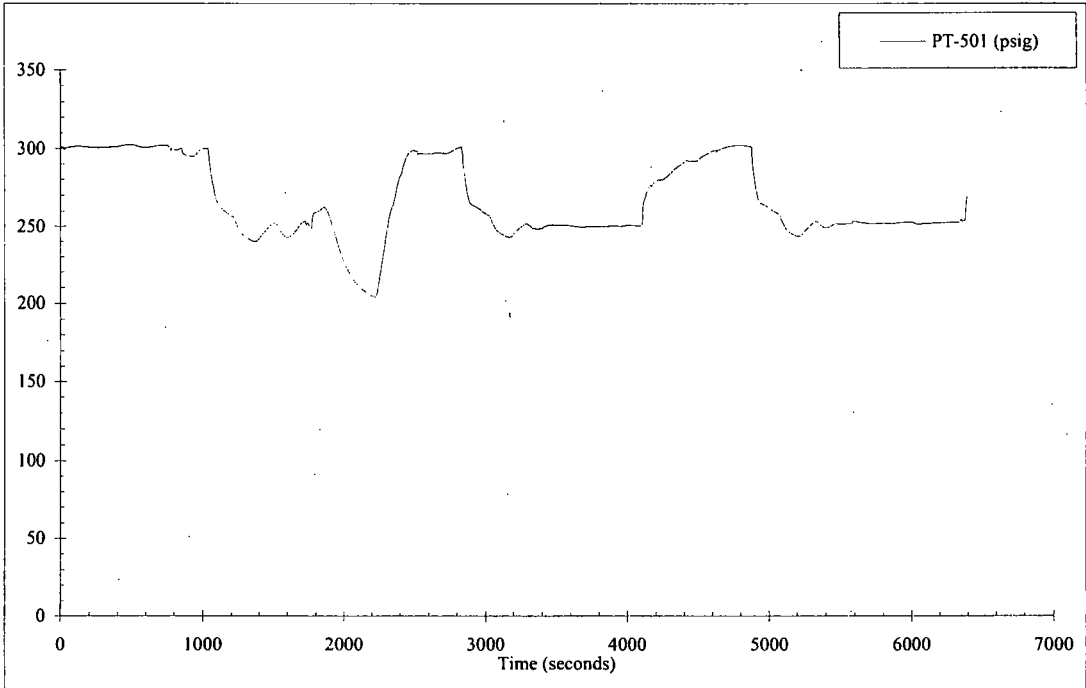
Rx Upper Head Pressure



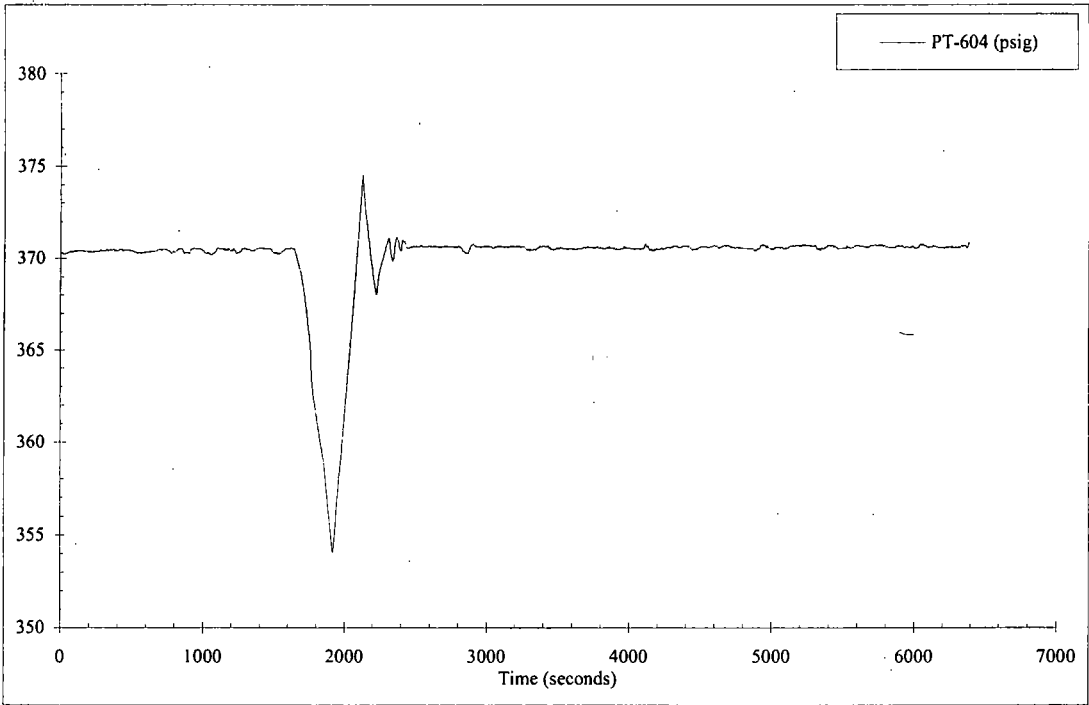
SG-1 Pressure



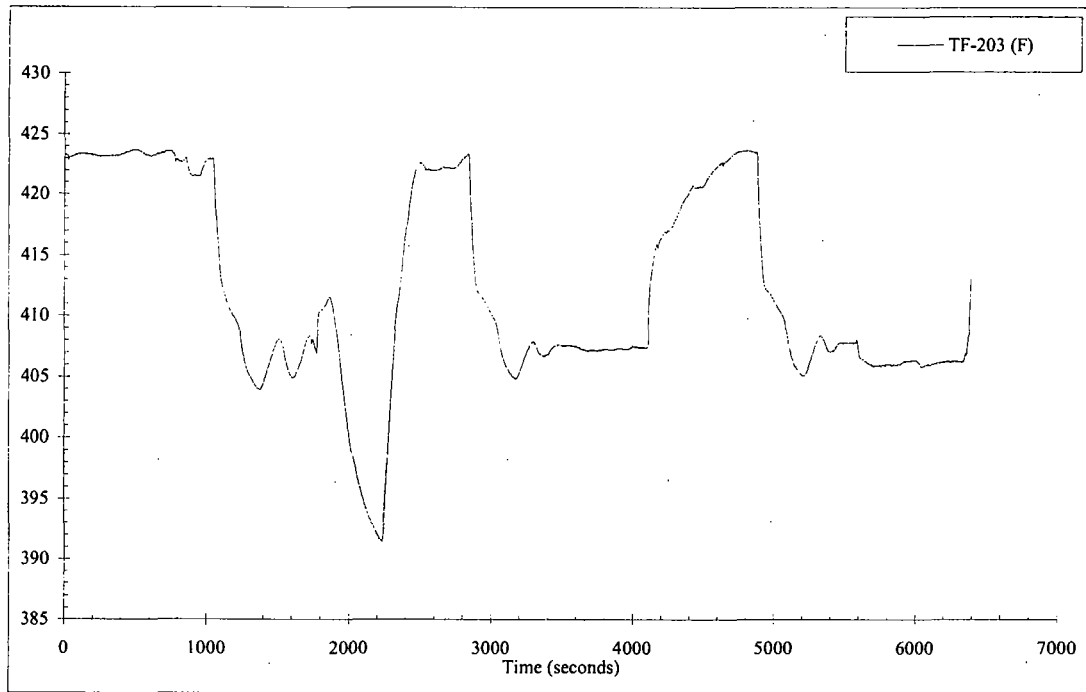
SG-2 Pressure



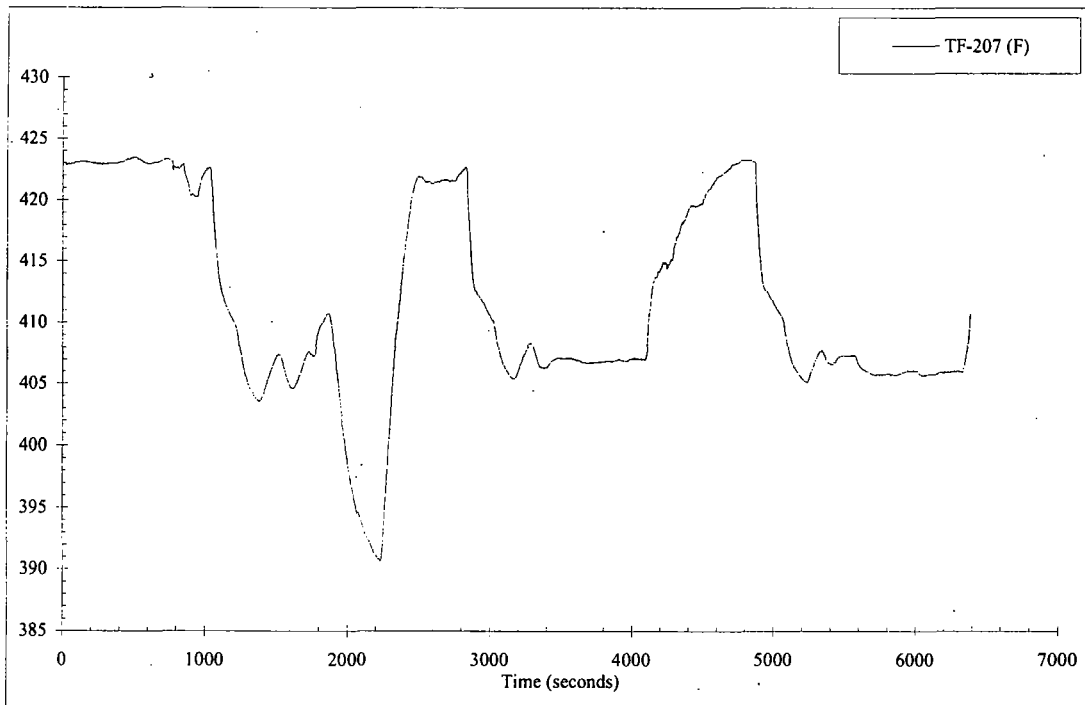
Separator Outlet Steam Pressure



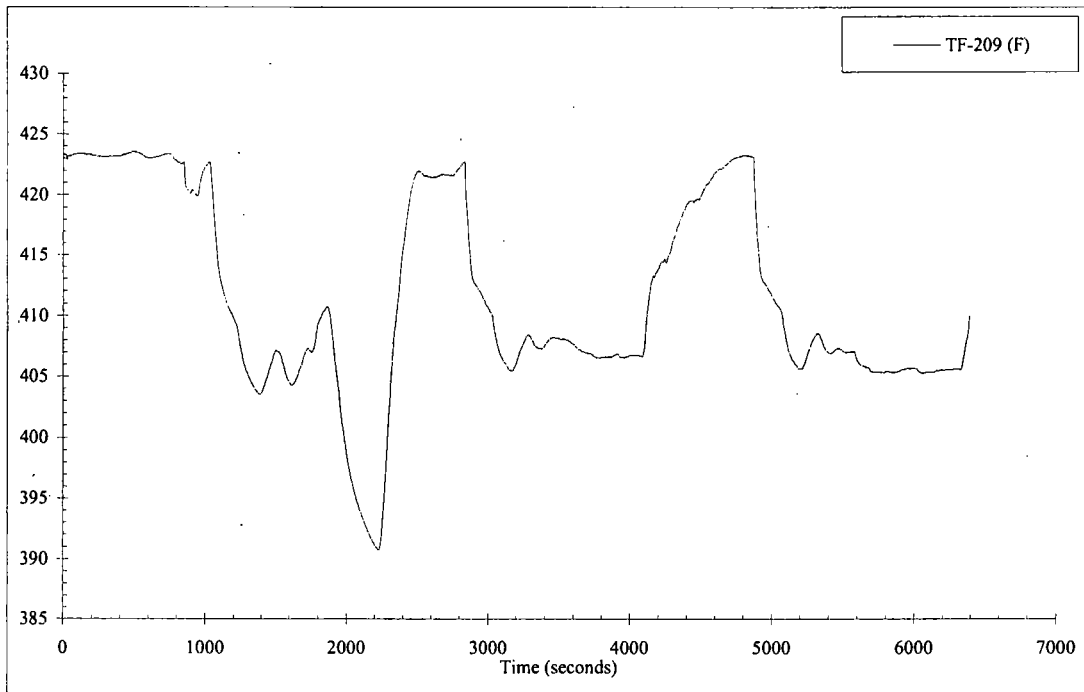
PZR WR Pressure



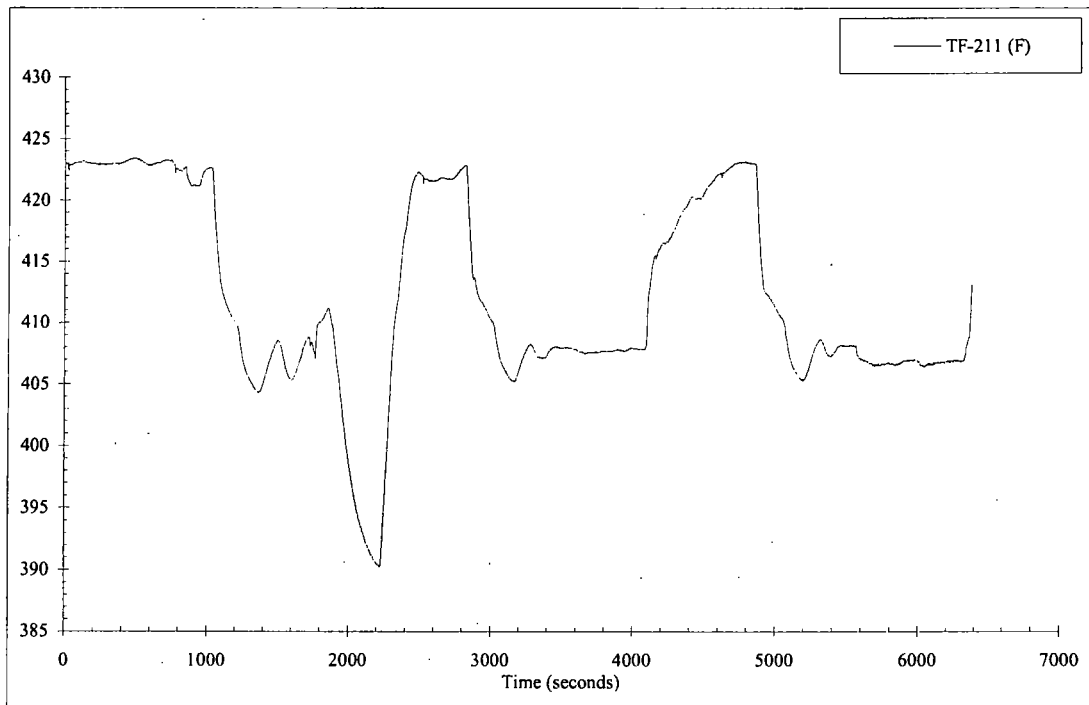
Separator Outlet Steam Temperature



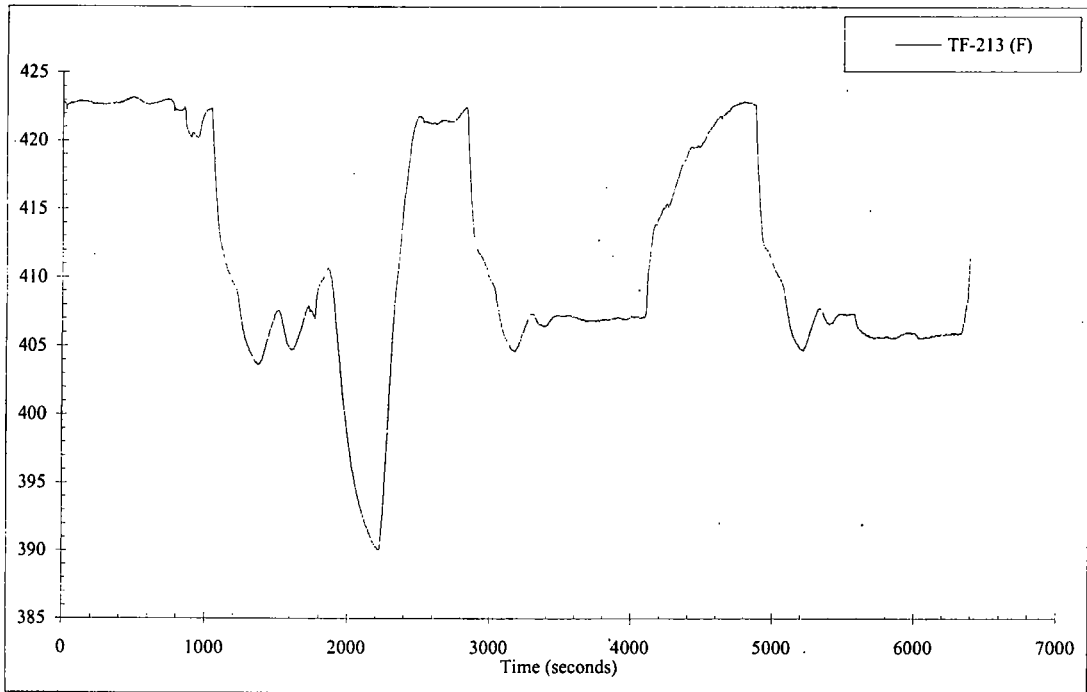
SG-1 Short Tube at Middle Outlet Side Temperature



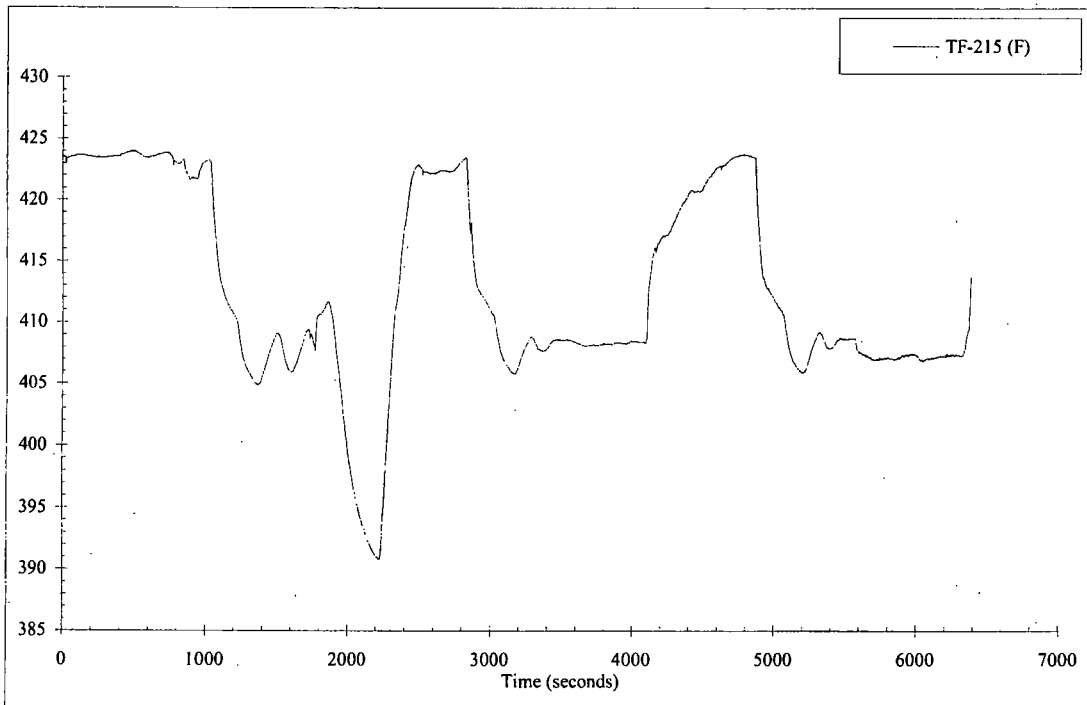
SG-1 Short Tube at Middle Inlet Side Temperature



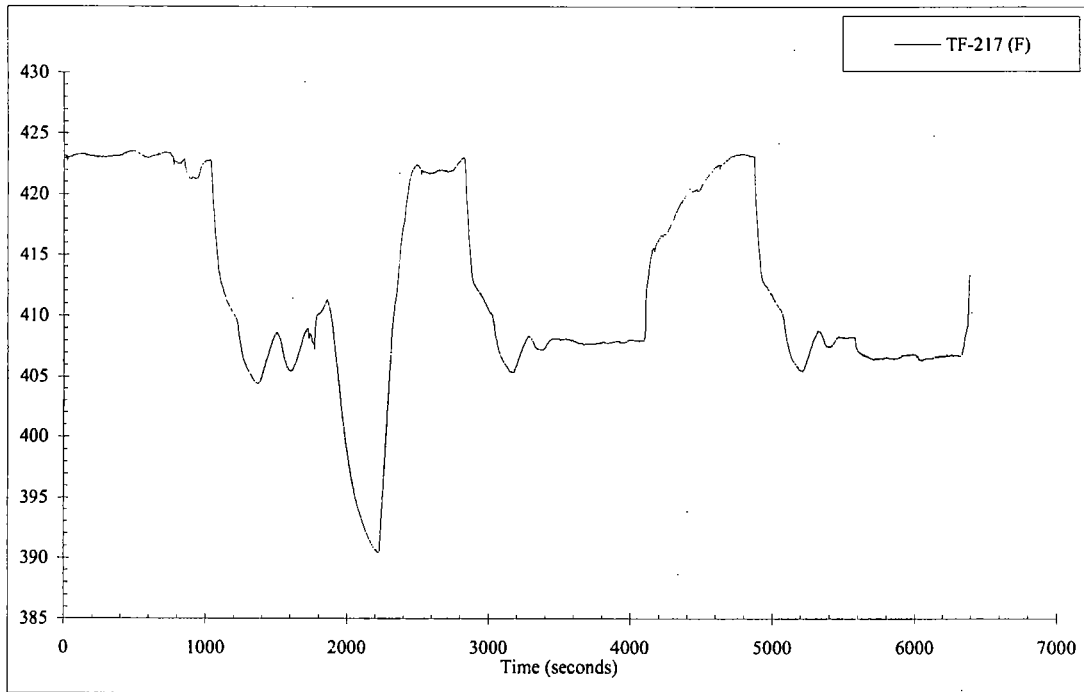
SG-1 Long Tube at Middle Outlet Temperature



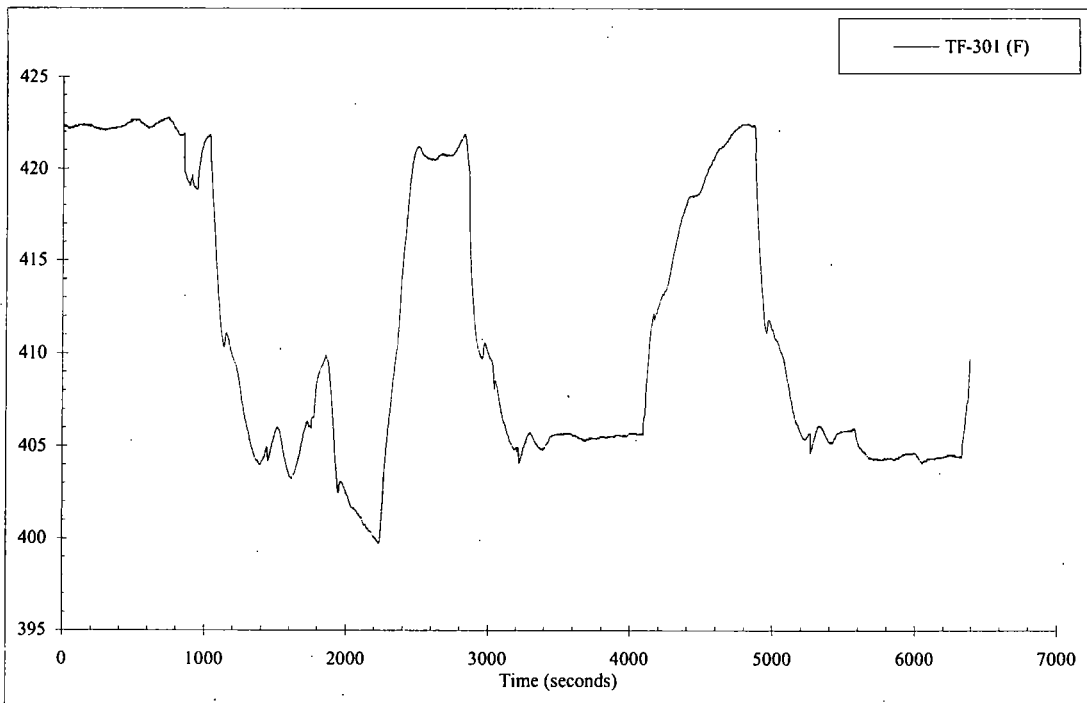
SG-1 Long Tube at Middle Inlet Temperature



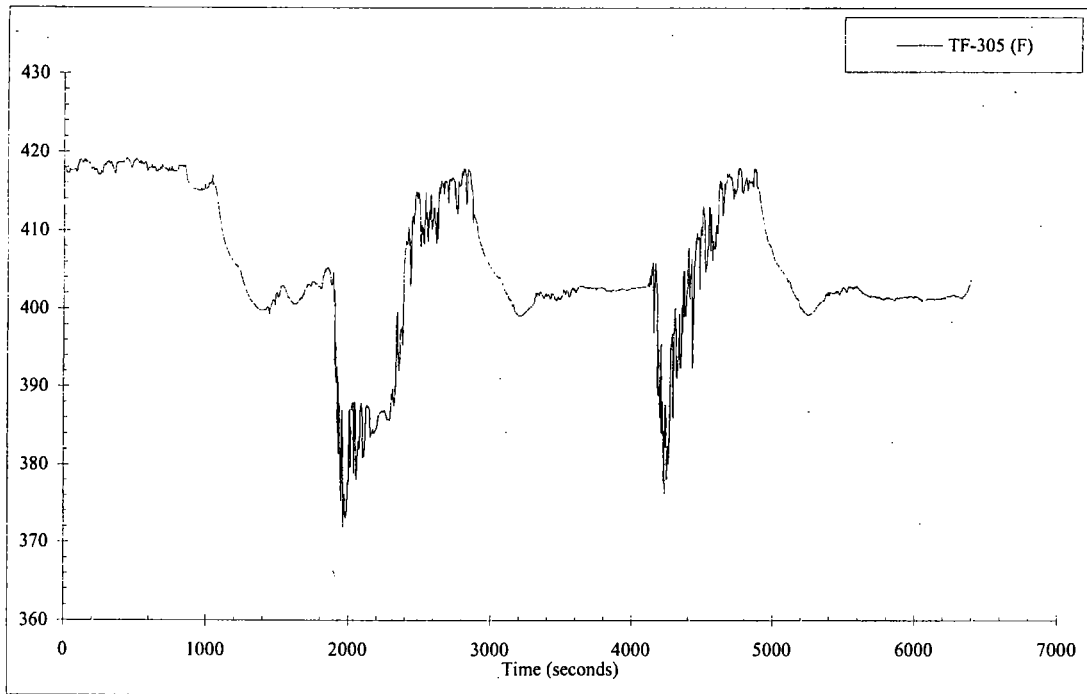
SG-1 Short Tube at Top Temperature



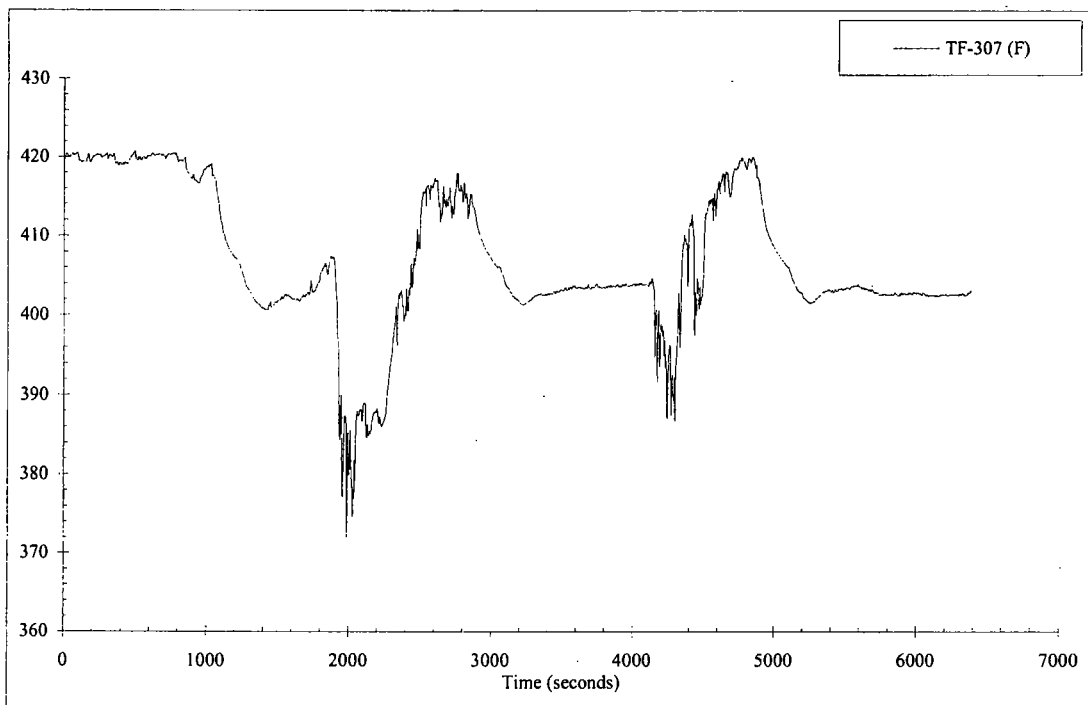
SG-1 Long Tube at Top Temperature



SG-1 Steam Temperature (SC-301)

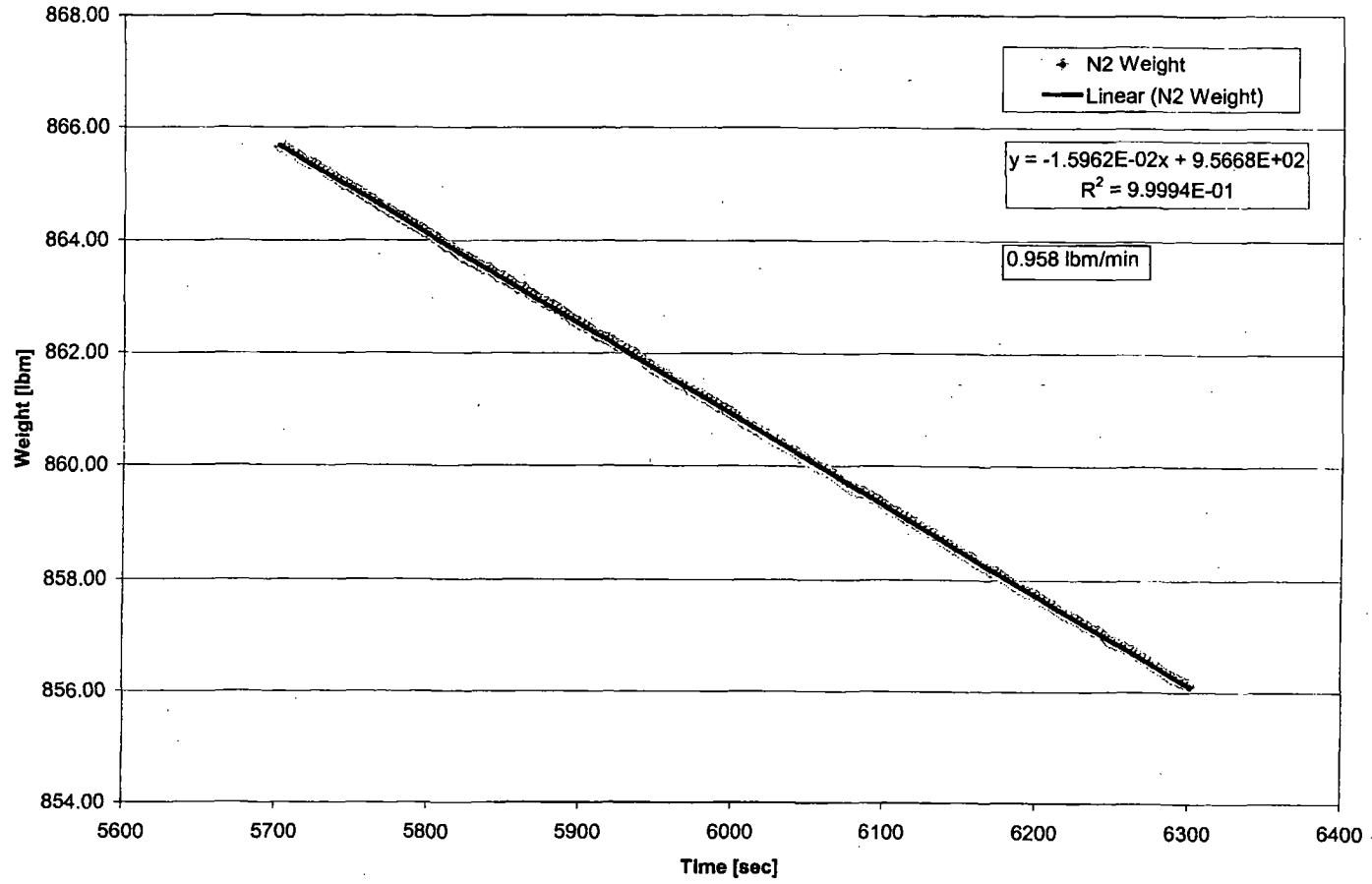


SG-1 Downcomer HL Side Temperature



SG-1 Downcomer CL Side Temperature

NRC-COND-07 N₂ Flow



NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:28:10	5521	867.75
13:28:11	5522	867.75
13:28:12	5523	867.75
13:28:13	5524	867.75
13:28:14	5525	867.75
13:28:15	5526	867.75
13:28:16	5527	867.75
13:28:17	5528	867.75
13:28:18	5529	867.75
13:28:19	5530	867.75
13:28:20	5531	867.70
13:28:21	5532	867.70
13:28:22	5533	867.75
13:28:23	5534	867.70
13:28:25	5536	867.70
13:28:26	5537	867.70
13:28:27	5538	867.70
13:28:28	5539	867.70
13:28:29	5540	867.75
13:28:30	5541	867.75
13:28:31	5542	867.75
13:28:32	5543	867.75
13:28:33	5544	867.75
13:28:34	5545	867.75
13:28:35	5546	867.75
13:28:36	5547	867.75
13:28:37	5548	867.75
13:28:38	5549	867.75
13:28:39	5550	867.75
13:28:40	5551	867.75
13:28:41	5552	867.75
13:28:42	5553	867.75
13:28:43	5554	867.75
13:28:44	5555	867.75
13:28:45	5556	867.75
13:28:46	5557	867.75
13:28:48	5559	867.75
13:28:49	5560	867.75
13:28:50	5561	867.70
13:28:51	5562	867.70
13:28:52	5563	867.70
13:28:53	5564	867.65
13:28:54	5565	867.65
13:28:55	5566	867.65
13:28:56	5567	867.60
13:28:57	5568	867.60
13:28:58	5569	867.60
13:28:59	5570	867.55
13:29:00	5571	867.55
13:29:01	5572	867.55
13:29:02	5573	867.55
13:29:03	5574	867.50
13:29:04	5575	867.50

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:29:05	5576	867.50
13:29:06	5577	867.45
13:29:07	5578	867.45
13:29:08	5579	867.45
13:29:10	5581	867.40
13:29:11	5582	867.40
13:29:12	5583	867.40
13:29:13	5584	867.35
13:29:14	5585	867.35
13:29:15	5586	867.35
13:29:16	5587	867.35
13:29:17	5588	867.30
13:29:18	5589	867.30
13:29:19	5590	867.30
13:29:20	5591	867.25
13:29:21	5592	867.25
13:29:22	5593	867.25
13:29:23	5594	867.20
13:29:24	5595	867.20
13:29:25	5596	867.20
13:29:26	5597	867.15
13:29:27	5598	867.15
13:29:28	5599	867.15
13:29:29	5600	867.10
13:29:30	5601	867.10
13:29:32	5603	867.10
13:29:33	5604	867.05
13:29:34	5605	867.05
13:29:35	5606	867.00
13:29:36	5607	867.00
13:29:37	5608	867.00
13:29:38	5609	867.00
13:29:39	5610	866.95
13:29:40	5611	866.95
13:29:41	5612	866.95
13:29:42	5613	866.90
13:29:43	5614	866.90
13:29:44	5615	866.90
13:29:45	5616	866.90
13:29:46	5617	866.85
13:29:47	5618	866.85
13:29:48	5619	866.80
13:29:49	5620	866.80
13:29:50	5621	866.80
13:29:51	5622	866.80
13:29:52	5623	866.75
13:29:53	5624	866.75
13:29:55	5626	866.70
13:29:56	5627	866.70
13:29:57	5628	866.70
13:29:58	5629	866.65
13:29:59	5630	866.65
13:30:00	5631	866.65

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:30:01	5632	866.65
13:30:02	5633	866.60
13:30:03	5634	866.60
13:30:04	5635	866.60
13:30:05	5636	866.55
13:30:06	5637	866.55
13:30:07	5638	866.55
13:30:08	5639	866.50
13:30:09	5640	866.50
13:30:10	5641	866.45
13:30:11	5642	866.45
13:30:12	5643	866.45
13:30:13	5644	866.45
13:30:14	5645	866.40
13:30:15	5646	866.40
13:30:17	5648	866.40
13:30:18	5649	866.35
13:30:19	5650	866.35
13:30:20	5651	866.35
13:30:21	5652	866.30
13:30:22	5653	866.30
13:30:23	5654	866.25
13:30:24	5655	866.25
13:30:25	5656	866.25
13:30:26	5657	866.25
13:30:27	5658	866.20
13:30:28	5659	866.20
13:30:29	5660	866.20
13:30:30	5661	866.15
13:30:31	5662	866.15
13:30:32	5663	866.15
13:30:33	5664	866.10
13:30:34	5665	866.10
13:30:35	5666	866.10
13:30:36	5667	866.10
13:30:37	5668	866.10
13:30:38	5669	866.05
13:30:40	5671	866.05
13:30:41	5672	866.00
13:30:42	5673	866.00
13:30:43	5674	865.95
13:30:44	5675	865.95
13:30:45	5676	865.90
13:30:46	5677	865.90
13:30:47	5678	865.90
13:30:48	5679	865.85
13:30:49	5680	865.85
13:30:50	5681	865.80
13:30:51	5682	865.80
13:30:52	5683	865.80
13:30:53	5684	865.75
13:30:54	5685	865.75
13:30:55	5686	865.75

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:30:56	5687	865.75
13:30:57	5688	865.75
13:30:58	5689	865.70
13:30:59	5690	865.70
13:31:00	5691	865.65
13:31:02	5693	865.65
13:31:03	5694	865.65
13:31:04	5695	865.60
13:31:05	5696	865.60
13:31:06	5697	865.60
13:31:07	5698	865.55
13:31:08	5699	865.55
13:31:09	5700	865.55
13:31:10	5701	865.50
13:31:11	5702	865.50
13:31:12	5703	865.50
13:31:13	5704	865.45
13:31:14	5705	865.45
13:31:15	5706	865.45
13:31:16	5707	865.40
13:31:17	5708	865.40
13:31:18	5709	865.40
13:31:19	5710	865.40
13:31:20	5711	865.35
13:31:21	5712	865.35
13:31:22	5713	865.35
13:31:24	5715	865.35
13:31:25	5716	865.30
13:31:26	5717	865.30
13:31:27	5718	865.25
13:31:28	5719	865.25
13:31:29	5720	865.25
13:31:30	5721	865.20
13:31:31	5722	865.20
13:31:32	5723	865.20
13:31:33	5724	865.15
13:31:34	5725	865.15
13:31:35	5726	865.15
13:31:36	5727	865.15
13:31:37	5728	865.10
13:31:38	5729	865.10
13:31:39	5730	865.05
13:31:40	5731	865.05
13:31:41	5732	865.00
13:31:42	5733	865.00
13:31:43	5734	865.00
13:31:44	5735	865.00
13:31:45	5736	864.95
13:31:47	5738	864.95
13:31:48	5739	864.90
13:31:49	5740	864.90
13:31:50	5741	864.90
13:31:51	5742	864.85

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:31:52	5743	864.85
13:31:53	5744	864.85
13:31:54	5745	864.80
13:31:55	5746	864.80
13:31:56	5747	864.80
13:31:57	5748	864.75
13:31:58	5749	864.75
13:31:59	5750	864.75
13:32:00	5751	864.70
13:32:01	5752	864.70
13:32:02	5753	864.70
13:32:03	5754	864.65
13:32:04	5755	864.65
13:32:05	5756	864.60
13:32:06	5757	864.60
13:32:07	5758	864.60
13:32:09	5760	864.55
13:32:10	5761	864.55
13:32:11	5762	864.55
13:32:12	5763	864.50
13:32:13	5764	864.50
13:32:14	5765	864.50
13:32:15	5766	864.45
13:32:16	5767	864.45
13:32:17	5768	864.45
13:32:18	5769	864.40
13:32:19	5770	864.40
13:32:20	5771	864.40
13:32:21	5772	864.40
13:32:22	5773	864.35
13:32:23	5774	864.35
13:32:24	5775	864.35
13:32:25	5776	864.30
13:32:26	5777	864.30
13:32:27	5778	864.30
13:32:28	5779	864.25
13:32:29	5780	864.25
13:32:30	5781	864.25
13:32:32	5783	864.20
13:32:33	5784	864.20
13:32:34	5785	864.20
13:32:35	5786	864.15
13:32:36	5787	864.15
13:32:37	5788	864.15
13:32:38	5789	864.10
13:32:39	5790	864.10
13:32:40	5791	864.10
13:32:41	5792	864.05
13:32:42	5793	864.05
13:32:43	5794	864.05
13:32:44	5795	864.05
13:32:45	5796	864.00
13:32:46	5797	864.00

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:32:47	5798	863.95
13:32:48	5799	863.95
13:32:49	5800	863.90
13:32:50	5801	863.90
13:32:51	5802	863.90
13:32:52	5803	863.90
13:32:54	5805	863.85
13:32:55	5806	863.85
13:32:56	5807	863.80
13:32:57	5808	863.80
13:32:58	5809	863.75
13:32:59	5810	863.75
13:33:00	5811	863.75
13:33:01	5812	863.70
13:33:02	5813	863.70
13:33:03	5814	863.70
13:33:04	5815	863.70
13:33:05	5816	863.65
13:33:06	5817	863.65
13:33:07	5818	863.65
13:33:08	5819	863.60
13:33:09	5820	863.60
13:33:10	5821	863.60
13:33:11	5822	863.55
13:33:12	5823	863.55
13:33:13	5824	863.55
13:33:14	5825	863.50
13:33:15	5826	863.50
13:33:17	5828	863.50
13:33:18	5829	863.50
13:33:19	5830	863.50
13:33:20	5831	863.45
13:33:21	5832	863.45
13:33:22	5833	863.40
13:33:23	5834	863.40
13:33:24	5835	863.35
13:33:25	5836	863.35
13:33:26	5837	863.35
13:33:27	5838	863.35
13:33:28	5839	863.35
13:33:29	5840	863.30
13:33:30	5841	863.30
13:33:31	5842	863.30
13:33:32	5843	863.25
13:33:33	5844	863.25
13:33:34	5845	863.25
13:33:35	5846	863.20
13:33:36	5847	863.20
13:33:37	5848	863.15
13:33:39	5850	863.15
13:33:40	5851	863.15
13:33:41	5852	863.15
13:33:42	5853	863.15

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:33:43	5854	863.10
13:33:44	5855	863.10
13:33:45	5856	863.05
13:33:46	5857	863.05
13:33:47	5858	863.05
13:33:48	5859	863.00
13:33:49	5860	863.00
13:33:50	5861	863.00
13:33:51	5862	862.95
13:33:52	5863	862.95
13:33:53	5864	862.95
13:33:54	5865	862.90
13:33:55	5866	862.90
13:33:56	5867	862.90
13:33:57	5868	862.90
13:33:58	5869	862.85
13:33:59	5870	862.85
13:34:01	5872	862.85
13:34:02	5873	862.80
13:34:03	5874	862.80
13:34:04	5875	862.80
13:34:05	5876	862.75
13:34:06	5877	862.75
13:34:07	5878	862.70
13:34:08	5879	862.70
13:34:09	5880	862.70
13:34:10	5881	862.65
13:34:11	5882	862.65
13:34:12	5883	862.60
13:34:13	5884	862.60
13:34:14	5885	862.60
13:34:15	5886	862.55
13:34:16	5887	862.55
13:34:17	5888	862.55
13:34:18	5889	862.50
13:34:19	5890	862.50
13:34:20	5891	862.50
13:34:21	5892	862.50
13:34:22	5893	862.45
13:34:24	5895	862.45
13:34:25	5896	862.40
13:34:26	5897	862.40
13:34:27	5898	862.35
13:34:28	5899	862.35
13:34:29	5900	862.30
13:34:30	5901	862.30
13:34:31	5902	862.30
13:34:32	5903	862.30
13:34:33	5904	862.30
13:34:34	5905	862.25
13:34:35	5906	862.25
13:34:36	5907	862.25
13:34:37	5908	862.25

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:34:38	5909	862.20
13:34:39	5910	862.20
13:34:40	5911	862.20
13:34:41	5912	862.15
13:34:42	5913	862.15
13:34:43	5914	862.15
13:34:44	5915	862.10
13:34:46	5917	862.10
13:34:47	5918	862.10
13:34:48	5919	862.10
13:34:49	5920	862.05
13:34:50	5921	862.05
13:34:51	5922	862.05
13:34:52	5923	862.00
13:34:53	5924	862.00
13:34:54	5925	862.00
13:34:55	5926	861.95
13:34:56	5927	861.95
13:34:57	5928	861.90
13:34:58	5929	861.90
13:34:59	5930	861.90
13:35:00	5931	861.85
13:35:01	5932	861.85
13:35:02	5933	861.80
13:35:03	5934	861.80
13:35:04	5935	861.80
13:35:05	5936	861.75
13:35:06	5937	861.75
13:35:07	5938	861.70
13:35:09	5940	861.70
13:35:10	5941	861.70
13:35:11	5942	861.65
13:35:12	5943	861.65
13:35:13	5944	861.65
13:35:14	5945	861.60
13:35:15	5946	861.60
13:35:16	5947	861.60
13:35:17	5948	861.55
13:35:18	5949	861.55
13:35:19	5950	861.55
13:35:20	5951	861.50
13:35:21	5952	861.50
13:35:22	5953	861.45
13:35:23	5954	861.45
13:35:24	5955	861.45
13:35:25	5956	861.45
13:35:26	5957	861.45
13:35:27	5958	861.40
13:35:28	5959	861.40
13:35:29	5960	861.35
13:35:31	5962	861.35
13:35:32	5963	861.35
13:35:33	5964	861.30

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:35:34	5965	861.30
13:35:35	5966	861.30
13:35:36	5967	861.25
13:35:37	5968	861.25
13:35:38	5969	861.25
13:35:39	5970	861.25
13:35:40	5971	861.20
13:35:41	5972	861.20
13:35:42	5973	861.20
13:35:43	5974	861.15
13:35:44	5975	861.15
13:35:45	5976	861.15
13:35:46	5977	861.10
13:35:47	5978	861.10
13:35:48	5979	861.10
13:35:49	5980	861.05
13:35:50	5981	861.05
13:35:51	5982	861.05
13:35:53	5984	861.00
13:35:54	5985	861.00
13:35:55	5986	861.00
13:35:56	5987	860.95
13:35:57	5988	860.95
13:35:58	5989	860.95
13:35:59	5990	860.90
13:36:00	5991	860.90
13:36:01	5992	860.90
13:36:02	5993	860.85
13:36:03	5994	860.85
13:36:04	5995	860.80
13:36:05	5996	860.80
13:36:06	5997	860.75
13:36:07	5998	860.75
13:36:08	5999	860.75
13:36:09	6000	860.75
13:36:10	6001	860.70
13:36:11	6002	860.70
13:36:12	6003	860.70
13:36:13	6004	860.65
13:36:14	6005	860.65
13:36:16	6007	860.60
13:36:17	6008	860.60
13:36:18	6009	860.60
13:36:19	6010	860.55
13:36:20	6011	860.55
13:36:21	6012	860.55
13:36:22	6013	860.55
13:36:23	6014	860.50
13:36:24	6015	860.50
13:36:25	6016	860.45
13:36:26	6017	860.45
13:36:27	6018	860.45
13:36:28	6019	860.45

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:36:29	6020	860.40
13:36:30	6021	860.40
13:36:31	6022	860.40
13:36:32	6023	860.35
13:36:33	6024	860.35
13:36:34	6025	860.35
13:36:35	6026	860.30
13:36:36	6027	860.30
13:36:38	6029	860.30
13:36:39	6030	860.25
13:36:40	6031	860.25
13:36:41	6032	860.25
13:36:42	6033	860.20
13:36:43	6034	860.15
13:36:44	6035	860.15
13:36:45	6036	860.15
13:36:46	6037	860.15
13:36:47	6038	860.10
13:36:48	6039	860.10
13:36:49	6040	860.10
13:36:50	6041	860.05
13:36:51	6042	860.05
13:36:52	6043	860.05
13:36:53	6044	860.00
13:36:54	6045	860.00
13:36:55	6046	860.00
13:36:56	6047	859.95
13:36:57	6048	859.95
13:36:58	6049	859.95
13:37:00	6051	859.95
13:37:01	6052	859.90
13:37:02	6053	859.90
13:37:03	6054	859.90
13:37:04	6055	859.85
13:37:05	6056	859.85
13:37:06	6057	859.85
13:37:07	6058	859.80
13:37:08	6059	859.80
13:37:09	6060	859.75
13:37:10	6061	859.75
13:37:11	6062	859.70
13:37:12	6063	859.70
13:37:13	6064	859.70
13:37:14	6065	859.65
13:37:15	6066	859.65
13:37:16	6067	859.65
13:37:17	6068	859.60
13:37:18	6069	859.60
13:37:19	6070	859.60
13:37:20	6071	859.60
13:37:21	6072	859.55
13:37:23	6074	859.55
13:37:24	6075	859.55

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:37:25	6076	859.55
13:37:26	6077	859.50
13:37:27	6078	859.50
13:37:28	6079	859.50
13:37:29	6080	859.50
13:37:30	6081	859.45
13:37:31	6082	859.45
13:37:32	6083	859.45
13:37:33	6084	859.40
13:37:34	6085	859.40
13:37:35	6086	859.40
13:37:36	6087	859.40
13:37:37	6088	859.35
13:37:38	6089	859.35
13:37:39	6090	859.30
13:37:40	6091	859.30
13:37:41	6092	859.25
13:37:42	6093	859.25
13:37:43	6094	859.25
13:37:45	6096	859.20
13:37:46	6097	859.20
13:37:47	6098	859.20
13:37:48	6099	859.20
13:37:49	6100	859.15
13:37:50	6101	859.15
13:37:51	6102	859.15
13:37:52	6103	859.10
13:37:53	6104	859.10
13:37:54	6105	859.10
13:37:55	6106	859.05
13:37:56	6107	859.05
13:37:57	6108	859.05
13:37:58	6109	859.00
13:37:59	6110	859.00
13:38:00	6111	859.00
13:38:01	6112	858.95
13:38:02	6113	858.95
13:38:03	6114	858.95
13:38:04	6115	858.90
13:38:05	6116	858.90
13:38:06	6117	858.90
13:38:08	6119	858.85
13:38:09	6120	858.85
13:38:10	6121	858.85
13:38:11	6122	858.80
13:38:12	6123	858.80
13:38:13	6124	858.80
13:38:14	6125	858.75
13:38:15	6126	858.75
13:38:16	6127	858.70
13:38:17	6128	858.70
13:38:18	6129	858.70
13:38:19	6130	858.65

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:38:20	6131	858.65
13:38:21	6132	858.65
13:38:22	6133	858.60
13:38:23	6134	858.60
13:38:24	6135	858.60
13:38:25	6136	858.55
13:38:26	6137	858.55
13:38:27	6138	858.55
13:38:28	6139	858.50
13:38:30	6141	858.50
13:38:31	6142	858.45
13:38:32	6143	858.45
13:38:33	6144	858.45
13:38:34	6145	858.45
13:38:35	6146	858.40
13:38:36	6147	858.40
13:38:37	6148	858.40
13:38:38	6149	858.35
13:38:39	6150	858.35
13:38:40	6151	858.30
13:38:41	6152	858.30
13:38:42	6153	858.30
13:38:43	6154	858.30
13:38:44	6155	858.25
13:38:45	6156	858.25
13:38:46	6157	858.25
13:38:47	6158	858.25
13:38:48	6159	858.20
13:38:49	6160	858.20
13:38:50	6161	858.15
13:38:51	6162	858.15
13:38:53	6164	858.15
13:38:54	6165	858.15
13:38:55	6166	858.10
13:38:56	6167	858.10
13:38:57	6168	858.05
13:38:58	6169	858.05
13:38:59	6170	858.05
13:39:00	6171	858.00
13:39:01	6172	858.00
13:39:02	6173	857.95
13:39:03	6174	857.95
13:39:04	6175	857.95
13:39:05	6176	857.90
13:39:06	6177	857.90
13:39:07	6178	857.90
13:39:08	6179	857.85
13:39:09	6180	857.85
13:39:10	6181	857.85
13:39:11	6182	857.80
13:39:12	6183	857.80
13:39:13	6184	857.80
13:39:15	6186	857.80

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:39:16	6187	857.75
13:39:17	6188	857.75
13:39:18	6189	857.75
13:39:19	6190	857.75
13:39:20	6191	857.70
13:39:21	6192	857.70
13:39:22	6193	857.65
13:39:23	6194	857.65
13:39:24	6195	857.65
13:39:25	6196	857.60
13:39:26	6197	857.60
13:39:27	6198	857.60
13:39:28	6199	857.60
13:39:29	6200	857.55
13:39:30	6201	857.55
13:39:31	6202	857.55
13:39:32	6203	857.50
13:39:33	6204	857.50
13:39:34	6205	857.45
13:39:35	6206	857.45
13:39:37	6208	857.40
13:39:38	6209	857.40
13:39:39	6210	857.40
13:39:40	6211	857.35
13:39:41	6212	857.35
13:39:42	6213	857.35
13:39:43	6214	857.35
13:39:44	6215	857.30
13:39:45	6216	857.30
13:39:46	6217	857.30
13:39:47	6218	857.30
13:39:48	6219	857.25
13:39:49	6220	857.25
13:39:50	6221	857.20
13:39:51	6222	857.20
13:39:52	6223	857.20
13:39:53	6224	857.20
13:39:54	6225	857.15
13:39:55	6226	857.15
13:39:56	6227	857.15
13:39:57	6228	857.10
13:39:58	6229	857.10
13:40:00	6231	857.10
13:40:01	6232	857.05
13:40:02	6233	857.05
13:40:03	6234	857.05
13:40:04	6235	857.00
13:40:05	6236	857.00
13:40:06	6237	856.95
13:40:07	6238	856.95
13:40:08	6239	856.90
13:40:09	6240	856.90
13:40:10	6241	856.90

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:40:11	6242	856.90
13:40:12	6243	856.85
13:40:13	6244	856.85
13:40:14	6245	856.85
13:40:15	6246	856.85
13:40:16	6247	856.85
13:40:17	6248	856.80
13:40:18	6249	856.80
13:40:19	6250	856.75
13:40:20	6251	856.75
13:40:22	6253	856.75
13:40:23	6254	856.75
13:40:24	6255	856.70
13:40:25	6256	856.70
13:40:26	6257	856.65
13:40:27	6258	856.65
13:40:28	6259	856.65
13:40:29	6260	856.60
13:40:30	6261	856.60
13:40:31	6262	856.60
13:40:32	6263	856.55
13:40:33	6264	856.55
13:40:34	6265	856.55
13:40:35	6266	856.50
13:40:36	6267	856.50
13:40:37	6268	856.45
13:40:38	6269	856.45
13:40:39	6270	856.45
13:40:40	6271	856.40
13:40:41	6272	856.40
13:40:42	6273	856.40
13:40:43	6274	856.35
13:40:45	6276	856.35
13:40:46	6277	856.30
13:40:47	6278	856.30
13:40:48	6279	856.30
13:40:49	6280	856.25
13:40:50	6281	856.25
13:40:51	6282	856.25
13:40:52	6283	856.25
13:40:53	6284	856.20
13:40:54	6285	856.20
13:40:55	6286	856.20
13:40:56	6287	856.20
13:40:57	6288	856.15
13:40:58	6289	856.15
13:40:59	6290	856.15
13:41:00	6291	856.10
13:41:01	6292	856.10
13:41:02	6293	856.10
13:41:03	6294	856.10
13:41:04	6295	856.05
13:41:05	6296	856.05

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:41:07	6298	856.00
13:41:08	6299	856.00
13:41:09	6300	856.00
13:41:10	6301	855.95
13:41:11	6302	855.95
13:41:12	6303	855.90
13:41:13	6304	855.90
13:41:14	6305	855.90
13:41:15	6306	855.85
13:41:16	6307	855.85
13:41:17	6308	855.85
13:41:18	6309	855.80
13:41:19	6310	855.80
13:41:20	6311	855.80
13:41:21	6312	855.75
13:41:22	6313	855.75
13:41:23	6314	855.75
13:41:24	6315	855.75
13:41:25	6316	855.70
13:41:26	6317	855.70
13:41:27	6318	855.70
13:41:29	6320	855.65
13:41:30	6321	855.65
13:41:31	6322	855.60
13:41:32	6323	855.60
13:41:33	6324	855.60
13:41:34	6325	855.55
13:41:35	6326	855.55
13:41:36	6327	855.55
13:41:37	6328	855.50
13:41:38	6329	855.50
13:41:39	6330	855.45
13:41:40	6331	855.45
13:41:41	6332	855.45
13:41:42	6333	855.45
13:41:43	6334	855.50
13:41:44	6335	855.50
13:41:45	6336	855.50
13:41:46	6337	855.45
13:41:47	6338	855.45
13:41:48	6339	855.45
13:41:49	6340	855.50
13:41:50	6341	855.50
13:41:52	6343	855.50
13:41:53	6344	855.50
13:41:54	6345	855.50
13:41:55	6346	855.50
13:41:56	6347	855.45
13:41:57	6348	855.50
13:41:58	6349	855.50
13:41:59	6350	855.50
13:42:00	6351	855.50
13:42:01	6352	855.50

NRC-COND-07

Nitrogen Precision Scale Data

Timestamp	Time (sec)	Weight (lbm.)
13:42:02	6353	855.50
13:42:03	6354	855.45
13:42:04	6355	855.50
13:42:05	6356	855.50
13:42:06	6357	855.50
13:42:07	6358	855.50
13:42:08	6359	855.45
13:42:09	6360	855.45
13:42:10	6361	855.50
13:42:11	6362	855.50
13:42:12	6363	855.50
13:42:14	6365	855.50
13:42:15	6366	855.50
13:42:16	6367	855.50
13:42:17	6368	855.50
13:42:18	6369	855.50
13:42:19	6370	855.50
13:42:20	6371	855.50
13:42:21	6372	855.50
13:42:22	6373	855.50
13:42:23	6374	855.50
13:42:24	6375	855.50
13:42:25	6376	855.50
13:42:26	6377	855.50
13:42:27	6378	855.50
13:42:28	6379	855.50
13:42:29	6380	855.50
13:42:30	6381	855.50
13:42:31	6382	855.50
13:42:32	6383	855.50
13:42:33	6384	855.50
13:42:34	6385	855.50

NRC-COND-07: Steam Generator U-Tube Condensation Test @ 300 psig w/ 2.5% Nitrogen
 Oregon State University
 Start time = 05/10/2007 11:55:59
 End time = 05/10/2007 13:42:29
 File created on 05/10/2007 14:07:10

Timestamp	Interval (sec)	Tagname	Description	Area	Value
5/10/2007 11:53	-119	TEST_SW	Facility Test Switch	Switches	In Test
5/10/2007 11:53	-119	dMuteSCR_Alarm	SCR Signal loss audible alarm	Status	ON
5/10/2007 12:00	292	MF_001	FST Fill Valve	Valves	Open
5/10/2007 12:03	459	MF_001	FST Fill Valve	Valves	Closed
5/10/2007 12:10	850	M001_HS_O	SG-1 Strm Stop HS	Switches	Open
5/10/2007 12:10	850	M001_STAT	SG-1 Steam Stop	Valves	Open
5/10/2007 12:11	945	M001_HS_O	SG-1 Strm Stop HS	Switches	Close
5/10/2007 12:11	946	M001_STAT	SG-1 Steam Stop	Valves	Closed
5/10/2007 12:13	1035	M001_HS_O	SG-1 Strm Stop HS	Switches	Open
5/10/2007 12:13	1035	M001_STAT	SG-1 Steam Stop	Valves	Open
5/10/2007 12:21	1527	MF_001	FST Fill Valve	Valves	Open
5/10/2007 12:25	1753	M001_HS_O	SG-1 Strm Stop HS	Switches	Close
5/10/2007 12:25	1753	M001_STAT	SG-1 Steam Stop	Valves	Closed
5/10/2007 12:26	1820	MF_001	FST Fill Valve	Valves	Closed
5/10/2007 12:27	1863	dMuteSCR_Alarm	SCR Signal loss audible alarm	Status	OFF
5/10/2007 12:27	1909	CVSP_HS_R	CVS Pump HS	Switches	Run
5/10/2007 12:27	1909	CVSP_X	CVS Pump	Pumps	Running
5/10/2007 12:29	2028	MFP_HS_R	Main Feed Pump HS	Switches	Off
5/10/2007 12:29	2028	MFP_X	Main Feed Pump	Pumps	Off
5/10/2007 12:31	2125	CVSP_HS_R	CVS Pump HS	Switches	Off
5/10/2007 12:31	2125	CVSP_X	CVS Pump	Pumps	Off
5/10/2007 12:37	2469	MFP_HS_R	Main Feed Pump HS	Switches	Run
5/10/2007 12:37	2469	MFP_X	Main Feed Pump	Pumps	Running
5/10/2007 12:41	2706	MF_001	FST Fill Valve	Valves	Open
5/10/2007 12:43	2860	M001_HS_O	SG-1 Strm Stop HS	Switches	Open
5/10/2007 12:43	2860	M001_STAT	SG-1 Steam Stop	Valves	Open
5/10/2007 12:43	2869	MF_001	FST Fill Valve	Valves	Closed
5/10/2007 12:51	3355	MF_001	FST Fill Valve	Valves	Open
5/10/2007 12:55	3600	MF_001	FST Fill Valve	Valves	Closed
5/10/2007 13:03	4042	MF_001	FST Fill Valve	Valves	Open
5/10/2007 13:04	4090	M001_HS_O	SG-1 Strm Stop HS	Switches	Close
5/10/2007 13:04	4090	M001_STAT	SG-1 Steam Stop	Valves	Closed
5/10/2007 13:08	4336	MF_001	FST Fill Valve	Valves	Closed
5/10/2007 13:17	4871	M001_HS_O	SG-1 Strm Stop HS	Switches	Open
5/10/2007 13:17	4871	M001_STAT	SG-1 Steam Stop	Valves	Open
5/10/2007 13:24	5305	MF_001	FST Fill Valve	Valves	Open
5/10/2007 13:28	5552	MF_001	FST Fill Valve	Valves	Closed
5/10/2007 13:36	6015	MF_001	FST Fill Valve	Valves	Open
5/10/2007 13:40	6258	MF_001	FST Fill Valve	Valves	Closed
5/10/2007 13:41	6331	M001_HS_O	SG-1 Strm Stop HS	Switches	Close
5/10/2007 13:41	6331	M001_STAT	SG-1 Steam Stop	Valves	Closed

NRC-COND-07 DAS Configuration

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
DP-111	DP across Upper Core Plate	4.9931	0.9963	30	-30	Differential Pressure (in h2o)
DP-114	DP across Upper Support Plate	4.9796	0.9934	375	-375	Differential Pressure (in h2o)
DP-121	DVI-1/CL-1 Differential Pressure	4.9563	0.989	25	-25	Differential Pressure (in h2o)
DP-122	DVI-2/CL-2 Differential Pressure	4.9591	0.9931	25	-25	Differential Pressure (in h2o)
DP-123	DVI-1/CL-3 Differential Pressure	4.9743	0.9957	25	-25	Differential Pressure (in h2o)
DP-124	DVI-2/CL-4 Differential Pressure	4.9561	0.9924	25	-25	Differential Pressure (in h2o)
DP-125	HL-1 entrance losses	4.97	0.9951	30	0	Differential Pressure (in h2o)
DP-126	HL-2 entrance losses	4.9707	0.9949	30	0	Differential Pressure (in h2o)
DP-128	DVI-1 entrance losses	4.9709	0.9959	25	-25	Differential Pressure (in h2o)
DP-129	DVI-2 entrance losses	4.9736	0.9958	25	-25	Differential Pressure (in h2o)
DP-130	Upper Head Differential Pressure	4.9622	0.9941	50	-50	Differential Pressure (in h2o)
DP-201	CL-1 Differential Pressure	4.9689	0.9939	25	-25	Differential Pressure (in h2o)
DP-202	RCP-2 Differential Pressure	4.9588	0.9916	200	0	Differential Pressure (in h2o)
DP-203	RCP-1 Differential Pressure	4.9692	0.9946	27	0	Differential Pressure (psid)
DP-204	CL-2 Differential Pressure	4.9814	0.9969	25	-25	Differential Pressure (in h2o)
DP-205	RCP-3 Differential Pressure	4.978	0.995	200	0	Differential Pressure (in h2o)
DP-206	RCP-4 Differential Pressure	4.984	0.9959	200	0	Differential Pressure (in h2o)
DP-207	CL-3 Differential Pressure	4.9817	0.9967	25	-25	Differential Pressure (in h2o)
DP-208	CL-4 Differential Pressure	4.9905	0.9984	25	-25	Differential Pressure (in h2o)
DP-209	HL-1 Differential Pressure	4.9858	0.998	25	-25	Differential Pressure (in h2o)
DP-210	HL-2 Differential Pressure	4.9649	0.9933	25	-25	Differential Pressure (in h2o)
DP-211	SG-1 Short Tube Entrance Losses	4.9849	0.9979	25	0	Differential Pressure (in h2o)
DP-212	SG-2 Long Tube Exit Losses	4.9838	0.9979	25	0	Differential Pressure (in h2o)
DP-213	SG-1 Long Tube Exit Losses	4.9788	0.9965	15	-15	Differential Pressure (in h2o)
DP-214	SG-2 Long Tube Entrance Losses	4.981	0.9973	15	0	Differential Pressure (in h2o)
DP-215	Break Differential Pressure	4.9807	0.9981	500	0	Differential Pressure (psid)
DP-216	Break Differential Pressure	4.9729	0.9964	500	0	Differential Pressure (psid)
DP-217	HL-1 to CL1 Differential Pressure at SG1	4.9835	0.9981	46.83	0	Differential Pressure (in h2o)
DP-218	HL-2 to CL2 Differential Pressure at SG2	4.9889	0.9992	150	0	Differential Pressure (in h2o)
DP-219	HL-1 to CL3 Differential Pressure at SG1	4.9686	0.9949	30.95	0	Differential Pressure (in h2o)
DP-220	HL-2 to CL4 Differential Pressure at SG2	4.9627	0.9936	150	0	Differential Pressure (in h2o)
DP-221	HL-1 to CL1 Differential Pressure at Rx	4.9677	0.9951	150	0	Differential Pressure (in h2o)
DP-222	HL-2 to CL2 Differential Pressure at Rx	4.983	0.9975	150	0	Differential Pressure (in h2o)
DP-223	HL-1 to CL3 Differential Pressure at Rx	4.9915	0.9987	150	0	Differential Pressure (in h2o)
DP-224	HL-2 to CL4 Differential Pressure at Rx	4.9665	0.9944	150	0	Differential Pressure (in h2o)
DP-401	ACC-1 Injection Differential Pressure	4.979	0.9975	400	0	Differential Pressure (in h2o)
DP-402	ACC-2 Injection Differential Pressure	4.9736	0.9958	400	0	Differential Pressure (in h2o)
DP-501	CMT-1 Injection Differential Pressure	4.9675	0.9948	150	-150	Differential Pressure (in h2o)
DP-502	CMT-2 Injection Differential Pressure	4.9645	0.9947	150	-150	Differential Pressure (in h2o)
DP-503	CMT-1 Balance Line Differential Pressure	4.9858	0.998	150	-150	Differential Pressure (in h2o)
DP-504	CMT-2 Balance Line Differential Pressure	4.9955	1.0007	100	-100	Differential Pressure (in h2o)
DP-601	HL-1 to ADS4-1 Differential Pressure	4.9969	1.0008	10	0	Differential Pressure (psid)
DP-602	HL-2 to ADS4-2 Differential Pressure	4.967	0.9948	10	0	Differential Pressure (psid)
DP-603	ADS4-1 Venturi	4.9847	0.9985	100	0	Differential Pressure (in h2o)
DP-604	ADS4-2 Venturi	4.964	0.9941	100	0	Differential Pressure (in h2o)
DP-605	ADS4-1 Venturi outlet to Enlarger inlet	4.9881	0.9993	50	0	Differential Pressure (in h2o)
DP-606	ADS4-2 Venturi outlet to Enlarger inlet	4.9857	0.9991	50	0	Differential Pressure (in h2o)
DP-611	PZR Surge Line Differential Pressure	4.9773	0.9967	25	-25	Differential Pressure (in h2o)
DP-701	IRWST-1 Injection Differential Pressure	4.9872	0.9982	30	0	Differential Pressure (psid)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
DP-702	IRWST-2 Injection Differential Pressure	4.9871	0.9981	30	0	Differential Pressure (psid)
DP-905	Break Separator Entrance Differential Pressure	4.9905	0.9994	100	0	Differential Pressure (psid)
DP-604	ADS-2 Flow Differential Pressure	4.9738	0.9961	100	0	Differential Pressure (psid)
DP-605	ADS-1 Flow Differential Pressure	4.9896	0.9993	250	0	Differential Pressure (psid)
DP-606	ADS-3 Flow Differential Pressure	5.0051	1.0023	100	0	Differential Pressure (psid)
MM-001	SG-1 Feed Flow	4.9838	0.9961	6	0	Volumetric Flow Rate (gpm)
MM-002	SG-2 Feed Flow	4.9642	0.9925	6	0	Volumetric Flow Rate (gpm)
MM-201	CL-1 Loop Flow	4.9607	0.9921	100	-100	Volumetric Flow Rate (gpm)
MM-202	CL-2 Loop Flow	4.9754	0.9943	100	-100	Volumetric Flow Rate (gpm)
MM-203	CL-3 Loop Flow	4.9853	0.9974	100	-100	Volumetric Flow Rate (gpm)
MM-204	CL-4 Loop Flow	4.9729	0.9936	100	-100	Volumetric Flow Rate (gpm)
MM-205	DVI-1 Flow	4.9706	0.996	75	0	Volumetric Flow Rate (gpm)
MM-206	DVI-2 Flow	4.9767	0.9969	75	0	Volumetric Flow Rate (gpm)
MM-401	ACC-1 Injection Flow	4.9516	0.9932	40	0	Volumetric Flow Rate (gpm)
MM-402	ACC-2 Injection Flow	4.9772	0.9965	40	0	Volumetric Flow Rate (gpm)
MM-501	CMT-1 Injection Flow	4.9959	1.0006	75	0	Volumetric Flow Rate (gpm)
MM-502	CMT-2 CL Balance Line Flow	4.9742	0.9994	70	0	Volumetric Flow Rate (gpm)
MM-503	CMT-1 CL Balance Line Flow	4.9717	0.9985	75	0	Volumetric Flow Rate (gpm)
MM-504	CMT-2 Injection Flow	4.9523	0.9925	20	0	Volumetric Flow Rate (gpm)
MM-601	ADS1-3 Loop Seal Flow	5.0168	1.004	200	0	Volumetric Flow Rate (gpm)
MM-602	ADS4-2 Loop Seal Flow	5.0507	1.0117	60	0	Volumetric Flow Rate (gpm)
MM-603	ADS4-1 Loop Seal Flow	5.0571	1.0129	60	0	Volumetric Flow Rate (gpm)
MM-701	IRWST/DVI-1 Injection Flow	4.9738	0.9954	40	0	Volumetric Flow Rate (gpm)
MM-702	IRWST/DVI-2 Injection Flow	4.9724	0.9955	40	0	Volumetric Flow Rate (gpm)
MM-703	IRWST Overflow	4.9663	0.9966	10	0	Volumetric Flow Rate (gpm)
MM-801	CVSP Discharge Flow	4.9876	0.9998	8	0	Volumetric Flow Rate (gpm)
MM-802	PRHR Inlet Flow	4.9656	0.9966	40	0	Volumetric Flow Rate (gpm)
MM-803	RNSP to DVI-2 Flow	4.9629	0.9942	30	0	Volumetric Flow Rate (gpm)
MM-804	PRHR Outlet Flow	4.9612	0.9963	40	0	Volumetric Flow Rate (gpm)
MM-805	RNSP Discharge Flow	4.9711	0.9936	40	0	Volumetric Flow Rate (gpm)
MM-901	Primary Sump-1 Recirculation Injection Flow	4.9673	0.9936	40	-40	Volumetric Flow Rate (gpm)
MM-902	Primary Sump-2 Recirculation Injection Flow	4.9726	0.9948	40	-40	Volumetric Flow Rate (gpm)
MM-905	Break Separator Loop Seal Flow	5.1224	1.0902	90	-90	Volumetric Flow Rate (gpm)
VM-001	SG-1 Main Steam Flow	5.0223	1.005	200	0	Steam Flow Rate (cfm)
VM-002	SG-2 Main Steam Flow	4.9878	0.9982	200	0	Steam Flow Rate (cfm)
VM-003	Main Steam Total Flow	4.9815	0.9978	70	0	Steam Flow Rate (cfm)
VM-009	SG-1 PORV Blowdown Steam Flow	4.9836	0.9967	381	0	Steam Flow Rate (cfm)
VM-010	SG-2 PORV Blowdown Steam Flow	4.9817	0.9971	381	0	Steam Flow Rate (cfm)
VM-601	ADS1-3 Separator Steam Flow	4.9995	1.0017	2000	0	Steam Flow Rate (cfm)
VM-602	ADS4-2 Separator 6-inch Line Steam Flow	5.006	1.0018	2000	0	Steam Flow Rate (cfm)
VM-603	ADS4-1 Separator 6-inch Line Steam Flow	5.0062	1.0024	1600	0	Steam Flow Rate (cfm)
VM-604	ADS4-2 Separator 2-inch Line Steam Flow	5.0034	1.0026	348	0	Steam Flow Rate (cfm)
VM-605	ADS4-1 Separator 2-inch Line Steam Flow	5.0037	1.0028	348	0	Steam Flow Rate (cfm)
VM-901	BAMS HDR 6-inch Line Steam Flow	5.0021	1.0023	5000	0	Steam Flow Rate (cfm)
VM-902	BAMS HDR 10-inch Line Steam Flow	5.01	1.0027	12500	0	Steam Flow Rate (cfm)
VM-903	Primary Sump Steam Exhaust Flow	4.9879	0.9949	22	0	Steam Flow Rate (cfm)
VM-904	Break Separator 3-inch Line Steam Flow	4.9986	0.9979	400	0	Steam Flow Rate (cfm)
VM-905	Break Separator 6-inch Line Steam Flow	5.0036	1.004	6000	0	Steam Flow Rate (cfm)
VM-906	Break Separator 8-inch Line Steam Flow	5.0048	1.0025	4000	0	Steam Flow Rate (cfm)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
-IPS-201-1	CL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-201-2	CL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-201-3	CL-1 Fluid temperature	10	0	10	0	Voltage (V)
-IPS-202-1	CL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-202-2	CL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-202-3	CL-2 Fluid temperature	10	0	10	0	Voltage (V)
-IPS-203-1	CL-3 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-203-2	CL-3 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-203-3	CL-3 Fluid temperature	10	0	10	0	Voltage (V)
-IPS-204-1	CL-4 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-204-2	CL-4 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-204-3	CL-4 Fluid temperature	10	0	10	0	Voltage (V)
-IPS-205-1	HL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-205-2	HL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-205-3	HL-1 Fluid temperature	10	0	10	0	Voltage (V)
-IPS-206-1	HL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-206-2	HL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-206-3	HL-2 Fluid temperature	10	0	10	0	Voltage (V)
-IPS-509-1	CMT-1 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-509-2	CMT-1 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-509-3	CMT-1 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
-IPS-512-1	CMT-2 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-512-2	CMT-2 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-512-3	CMT-2 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
-IPS-604-1	Lower PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-604-2	Lower PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-604-3	Lower PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
-IPS-606-1	ADS1-3 Common Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-606-2	ADS1-3 Common Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-606-3	ADS1-3 Common Inlet Fluid temperature	10	0	10	0	Voltage (V)
-IPS-607-1	Upper PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-607-2	Upper PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-607-3	Upper PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
-IPS-801-1	PRHR HX Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
-IPS-801-2	PRHR HX Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
-IPS-801-3	PRHR HX Inlet Fluid temperature	10	0	10	0	Voltage (V)
W-101	Rx Heater Group 1 Power	4.3222	1.1171	472	0	Power (kW)
W-102	Rx Heater Group 2 Power	4.1621	1.0045	486	0	Power (kW)
W-103	Rx Heater Group 1 Power	4.8931	0.9786	496	0	Power (kW)
W-104	Rx Heater Group 2 Power	4.912	0.9946	492	0	Power (kW)
W-601	PZR Heater Power	4.9435	0.982	24.3	0	Power (kW)
_CT-701	IRWST Weight	4.9831	0.9976	40000	0	Mass (lbm)
_CT-901	Primary Sump Weight	4.977	0.9969	28800	0	Mass (lbm)
_CT-902	Secondary Sump Weight	4.9845	0.9983	16700	0	Mass (lbm)
_DP-001	FST Uncompensated Water Level	5.0056	1.0017	91.88	0	Water Level (in)
_DP-101	CL to Bypass Holes Uncompensated Water Level (270)	4.9645	0.9945	5.561	0	Water Level (in)
_DP-102	CL to Bypass Holes Uncompensated Water Level (180)	4.9725	0.9963	5.938	0	Water Level (in)
_DP-103	DVI to CL Uncompensated Water Level (270)	4.9807	0.9982	11.692	0	Water Level (in)
_DP-104	DVI to CL Uncompensated Water Level (180)	4.9748	0.9992	12.376	0	Water Level (in)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
.DP-105	Upper Core Plate to DVI Uncompensated Water Level (270)	5.0076	1.0058	11.929	0	Water Level (in)
.DP-106	Bottom of Core to Lower Core Plate Uncompensated Water Level (180)	4.9732	0.9985	8.198	0	Water Level (in)
.DP-107	Bottom of Core to Lower Core Plate Uncompensated Water Level (270)	4.9713	0.9958	8.223	0	Water Level (in)
.DP-108	Bottom of Core to Lower Core Plate Uncompensated Water Level (0)	4.9683	0.9953	8.562	0	Water Level (in)
.DP-109	Lower Core Plate to Mid-Core Spacer Grid Uncompensated Water Level (0)	4.984	0.9988	19.763	0	Water Level (in)
.DP-110	Mid-Core Spacer Grid to Upper-Core Spacer Grid Uncompensated Water Level (0)	4.9909	0.9991	20.02	0	Water Level (in)
.DP-112	Upper Core Plate to DVI Uncompensated Water Level (0)	4.9755	0.9963	4.896	0	Water Level (in)
.DP-113	DVI to Bottom of Upper Support Plate Uncompensated Water Level (0)	4.9849	0.9986	15.614	0	Water Level (in)
.DP-115	Upper Support Plate to Top of Rx Uncompensated Water Level (0)	4.9896	0.9996	24.28	0	Water Level (in)
.DP-116	Bottom of Rx to Bottom of Bypass Holes Uncompensated Water Level (270)	4.9638	0.9949	77.59	0	Water Level (in)
.DP-117	Upper Core Spacer Grid to DVI Uncompensated Water Level (180)	4.9838	0.9983	11.383	0	Water Level (in)
.DP-118	Lower Core Plate to Upper Core Plate Uncompensated Water Level (270)	4.9848	0.9988	39.98	0	Water Level (in)
.DP-119	Lower Core Plate to Upper Core Support Grid Uncompensated Water Level (180)	4.988	0.9996	40.26	0	Water Level (in)
.DP-127	Rx Wide Range Uncompensated Water Level	4.999	1.0007	98.97	0	Water Level (in)
.DP-138	Upper Core Spacer Grid to Bottom of Upper Support Plate Uncompensated Water Level (180)	4.9639	0.9946	39.3	0	Water Level (in)
.DP-139	Top of Lower Core Plate to Upper Core Spacer Grid Uncompensated Water Level	4.9837	0.9982	24.166	0	Water Level (in)
.DP-140	Bottom of Rx to Bottom of Flow Holes (180) Uncompensated Water Level	4.9981	1.0014	78.02	0	Water Level (in)
.DP-141	Upper Core Plate to Lower Support Plate Uncompensated Water Level	4.9843	0.9994	20.135	0	Water Level (in)
.DP-201	CL-1 Uncompensated Water Level	4.9961	1.0002	2.496	0	Water Level (in)
.DP-202	CL-2 Uncompensated Water Level	4.9924	0.9994	2.223	0	Water Level (in)
.DP-203	CL-3 Uncompensated Water Level	4.9923	0.9994	2.532	0	Water Level (in)
.DP-204	CL-4 Uncompensated Water Level	4.9594	0.9927	2.47	0	Water Level (in)
.DP-205	HL-1 Uncompensated Water Level	4.9663	0.9945	4.415	0	Water Level (in)
.DP-206	HL-2 Uncompensated Water Level	4.9653	0.9944	4.013	0	Water Level (in)
.DP-207	SG-1 to HL-1 Elbow Plenum Uncompensated Water Level	4.9779	0.9972	18.3	0	Water Level (in)
.DP-208	SG-2 to HL-2 Elbow Plenum Uncompensated Water Level	4.9825	0.9969	19.247	0	Water Level (in)
.DP-209	SG-1 to HL-1 Plenum Uncompensated Water Level	4.9954	1.0002	10.939	0	Water Level (in)
.DP-210	SG-2 to CL-4 Plenum Uncompensated Water Level	4.9677	0.9943	16.988	0	Water Level (in)
.DP-211	SG-1 to CL-3 Plenum Uncompensated Water Level	4.9613	0.993	16.793	0	Water Level (in)
.DP-212	SG-2 to CL-2 Plenum Uncompensated Water Level	4.9836	0.9982	16.772	0	Water Level (in)
.DP-213	SG-1 to CL-1 Plenum Uncompensated Water Level	4.9864	0.9978	16.747	0	Water Level (in)
.DP-214	SG-2 to HL-2 Plenum Uncompensated Water Level	4.9953	1.0002	11.571	0	Water Level (in)
.DP-215	SG-1 Long Tube to HL Uncompensated Water Level	4.99	0.9992	102.06	0	Water Level (in)
.DP-216	SG-2 Short Tube to HL Uncompensated Water Level	4.9717	0.9955	95.55	0	Water Level (in)
.DP-217	SG-1 Short Tube to HL Uncompensated Water Level	4.9618	0.9932	96.25	0	Water Level (in)
.DP-218	SG-2 Long Tube to HL Uncompensated Water Level	4.9658	0.9943	103.14	0	Water Level (in)
.DP-219	SG-1 Long Tube to CL Uncompensated Water Level	4.9867	0.9992	102.45	0	Water Level (in)
.DP-220	SG-2 Short Tube to CL Uncompensated Water Level	4.9786	0.9971	96	0	Water Level (in)
.DP-221	SG-1 Short Tube to CL Uncompensated Water Level	4.985	0.9986	95.98	0	Water Level (in)
.DP-222	SG-2 Long Tube to CL Uncompensated Water Level	4.9628	0.9947	102.71	0	Water Level (in)
.DP-301	SG-1 WR Uncompensated Water Level	5.0022	1.0006	119.25	0	Water Level (in)
.DP-302	SG-2 WR Uncompensated Water Level	4.9995	1.0003	119.02	0	Water Level (in)
.DP-303	SG-1 NR Uncompensated Water Level	4.9699	0.9934	31.81	0	Water Level (in)
.DP-304	SG-2 NR Uncompensated Water Level	4.9748	0.995	31.52	0	Water Level (in)
.DP-401	ACC-1 Uncompensated Water Level	4.987	0.9951	38.26	0	Water Level (in)
.DP-402	ACC-2 Uncompensated Water Level	5.166	1.0332	38.34	0	Water Level (in)
.DP-501	CMT-1 NR Uncompensated Water Level (Bottom)	4.9834	0.9986	5.31	0	Water Level (in)
.DP-502	CMT-2 WR Uncompensated Water Level	5.1958	1.0396	57.5	0	Water Level (in)
.DP-503	CMT-1 NR Uncompensated Water Level (Middle)	4.984	0.9979	46.77	0	Water Level (in)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
..DP-504	CMT-2 NR Uncompensated Water Level (Bottom)	4.9793	0.9972	5.226	0	Water Level (in)
..DP-505	CMT-1 NR Uncompensated Water Level (Top)	4.994	1	5.486	0	Water Level (in)
..DP-506	CMT-2 NR Uncompensated Water Level (Middle)	4.9823	0.9975	46.96	0	Water Level (in)
..DP-507	CMT-1 WR Uncompensated Water Level	5.1887	1.0383	57.5	0	Water Level (in)
..DP-508	CMT-2 NR Uncompensated Water Level (Top)	4.9913	0.9994	5.309	0	Water Level (in)
..DP-509	CL-3 to CMT-1 Balance Line Uncompensated Water Level	4.9772	0.9968	78.84	0	Water Level (in)
..DP-510	CL-1 to CMT-2 Balance Line Uncompensated Water Level	4.9653	0.9942	78.28	0	Water Level (in)
..DP-601	PZR WR Uncompensated Water Level	5.0006	0.9991	140.47	0	Water Level (in)
..DP-602	PZR Surge Line Uncompensated Water Level	4.9777	0.997	47.5	0	Water Level (in)
..DP-605	PZR Upper Surge Line Pipe Uncompensated Water Level	4.9735	0.9963	3.533	0	Water Level (in)
..DP-606	PZR Surge Line Pipe Level at PZR Inlet Uncompensated Water Level	4.9724	0.9958	18.696	0	Water Level (in)
..DP-607	PZR Middle Surge Line Pipe Uncompensated Water Level	4.9737	0.996	4.127	0	Water Level (in)
..DP-608	PZR Lower Surge Line Pipe Uncompensated Water Level	4.9731	0.9964	3.82	0	Water Level (in)
..DP-609	PZR Surge Line Pipe Uncompensated Water Level at HL-2	4.996	1.0011	14.717	0	Water Level (in)
..DP-610	ADS1-3 Separator Uncompensated Water Level	5.193	1.0399	45.24	0	Water Level (in)
..DP-611	ADS4-1 Separator Uncompensated Water Level	5.1628	1.0342	55.97	0	Water Level (in)
..DP-612	ADS4-2 Separator Uncompensated Water Level	5.1859	1.0386	56.6	0	Water Level (in)
..DP-701	IRWST Uncompensated Water Level	5.0202	1.0048	115.8	0	Water Level (in)
..DP-801	PRHR HX Inlet Head Uncompensated Water Level	4.9945	1.0013	6.971	0	Water Level (in)
..DP-802	PRHR HX WR Uncompensated Water Level	4.9871	0.9998	57.08	0	Water Level (in)
..DP-901	Primary Sump Uncompensated Water Level	5.0016	1.0015	104.36	0	Water Level (in)
..DP-902	Secondary Sump Uncompensated Water Level	5.0018	1.0007	102.56	0	Water Level (in)
..DP-903	CRT Uncompensated Water Level	5.1669	1.0346	32.358	0	Water Level (in)
..DP-905	Break Separator Uncompensated Water Level	5.1788	1.0378	130.68	0	Water Level (in)
..T-120	Rx Vessel Capacitance Probe Water Level	5.0053	1.0042	99	50	Water Level (in)
>T-001	MFP Discharge Pressure	5.0658	1.0121	600	0	Pressure (psig)
>T-002	MS Header Pressure	4.9759	0.9962	500	0	Pressure (psig)
>T-003	Lab Barometer	4.9656	0.9944	20	10	Pressure (psia)
>T-009	SG-1 PORV Blowdown Pressure	4.9816	0.9983	300	0	Pressure (psig)
>T-010	SG-2 PORV Blowdown Pressure	4.9924	1.0004	300	0	Pressure (psig)
>T-101	CL-1 Pressure at Rx Flange	4.9877	0.9986	500	0	Pressure (psig)
>T-102	CL-2 Pressure at Rx Flange	4.9706	0.9958	10	0	Pressure (psig)
>T-103	CL-3 Pressure at Rx Flange	4.9646	0.9946	10	0	Pressure (psig)
>T-104	CL-4 Pressure at Rx Flange	4.9882	0.9988	500	0	Pressure (psig)
>T-107	Rx Upper Head Pressure	5.0478	1.0096	500	0	Pressure (psig)
>T-108	Bottom of Rx Pressure	4.9637	0.9938	500	0	Pressure (psig)
>T-109	DVI-1 Pressure at Rx Flange	4.9874	0.998	500	0	Pressure (psig)
>T-110	DVI-2 Pressure at Rx Flange	4.9825	0.9984	10	0	Pressure (psig)
>T-111	Rx Annular Pressure at Flow Bypass Holes	4.9886	0.9982	500	0	Pressure (psig)
>T-112	Rx Annular Pressure at Bottom of Rx	4.977	0.9958	10	0	Pressure (psig)
>T-113	Rx Pressure Below Mid-Core Spacer Grid	4.9616	0.9921	500	0	Pressure (psig)
>T-201	SG-1 Long Tube Pressure (Top)	4.9935	1.0008	500	0	Pressure (psig)
>T-202	HL-2 Pressure at SG-2 Flange	4.9841	0.9978	500	0	Pressure (psig)
>T-203	CL Break Pressure at Break Valve	4.988	0.9982	500	0	Pressure (psig)
>T-204	SG-2 Long Tube Pressure (Top)	4.9974	1.0005	500	0	Pressure (psig)
>T-205	HL-1 Pressure at SG-1 Flange	4.9838	0.9988	400	0	Pressure (psig)
>T-206	HL Break Pressure at Break Valve	4.9869	0.9982	500	0	Pressure (psig)
>T-301	SG-1 Pressure	5.0617	1.0123	500	0	Pressure (psig)
>T-302	SG-2 Pressure	5.1023	1.0219	500	0	Pressure (psig)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
PT-401	ACC-1 Pressure	4.9908	0.9993	300	0	Pressure (psig)
PT-402	ACC-2 Pressure	4.9802	0.9975	300	0	Pressure (psig)
PT-501	CMT-1 Pressure	4.982	0.9979	300	0	Pressure (psig)
PT-502	CMT-2 Pressure	4.9869	0.998	500	0	Pressure (psig)
PT-602	PZR NR Pressure	4.9747	0.9988	400	300	Pressure (psig)
PT-603	PZR NR Pressure	4.9616	0.9944	10	0	Pressure (psig)
PT-604	PZR WR Pressure	4.9794	0.9942	500	0	Pressure (psig)
PT-605	ADS1-3 Separator Pressure	4.9725	0.9966	100	0	Pressure (psig)
PT-606	IRWST Sparger Line Pressure	4.9653	0.995	100	0	Pressure (psig)
PT-610	ADS4-2 Separator Pressure	4.9845	0.9983	10	0	Pressure (psig)
PT-611	ADS4-1 Separator Pressure	4.9806	0.9977	10	0	Pressure (psig)
PT-701	IRWST Pressure	5.0436	1.0087	15	0	Pressure (psig)
PT-801	CVSP Discharge Pressure	4.9909	0.9993	500	0	Pressure (psig)
PT-802	RNSP Discharge Pressure	4.9768	0.9962	250	0	Pressure (psig)
PT-901	Primary Sump Pressure	4.9659	0.9947	10	0	Pressure (psig)
PT-902	BAMS Header Pressure	4.9988	1.0013	16	0	Pressure (psig)
PT-905	Break Separator Pressure	5.0265	1.0067	20	0	Pressure (psig)
TF-005	Lab Ambient Temperature at Ground Level	1000	0	1000	0	Fluid Temperature (F)
TF-006	Lab Ambient Temperature at Second Level	1000	0	1000	0	Fluid Temperature (F)
TF-007	Lab Ambient Temperature at Third Level	1000	0	1000	0	Fluid Temperature (F)
TF-009	SG-1 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-010	SG-2 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-101	CL-3 Temperature (SC-101)	450	40	450	40	Fluid Temperature (F)
TF-101-1.3D-2	CL-1 Downcomer Temperature at 1.3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-1	CL-1 Downcomer Temperature at 2D, 120 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-2	CL-1 Downcomer Temperature at 2D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-3	CL-1 Downcomer Temperature at 2D, 150 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-1	CL-1 Downcomer Temperature at 3D, 104 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-2	CL-1 Downcomer Temperature at 3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-3	CL-1 Downcomer Temperature at 3D, 166 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-1	CL-1 Downcomer Temperature at 4D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-2	CL-1 Downcomer Temperature at 4D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-1	CL-1 Downcomer Temperature at 8D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-2	CL-1 Downcomer Temperature at 8D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102	CL-4 Temperature (SC-102)	450	40	450	40	Fluid Temperature (F)
TF-102-1.3D-2	CL-2 Downcomer Temperature at 1.3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-1	CL-2 Downcomer Temperature at 2D, 210 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-2	CL-2 Downcomer Temperature at 2D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-3	CL-2 Downcomer Temperature at 2D, 240 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-1	CL-2 Downcomer Temperature at 3D, 194 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-2	CL-2 Downcomer Temperature at 3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-3	CL-2 Downcomer Temperature at 3D, 256 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-4D-2	CL-2 Downcomer Temperature at 4D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-1	CL-2 Downcomer Temperature at 8D, 180 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-2	CL-2 Downcomer Temperature at 8D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-1.3D-2	CL-3 Downcomer Temperature at 1.3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-1	CL-3 Downcomer Temperature at 2D, 30 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-2	CL-3 Downcomer Temperature at 2D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-3	CL-3 Downcomer Temperature at 2D, 60 degrees	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-103-3D-1	CL-3 Downcomer Temperature at 3D, 14 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-2	CL-3 Downcomer Temperature at 3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-3	CL-3 Downcomer Temperature at 3D, 76 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-4D-2	CL-3 Downcomer Temperature at 4D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-1	CL-3 Downcomer Temperature at 8D, 0 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-2	CL-3 Downcomer Temperature at 8D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-1.3D-2	CL-4 Downcomer Temperature at 1.3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-1	CL-4 Downcomer Temperature at 2D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-2	CL-4 Downcomer Temperature at 2D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-3	CL-4 Downcomer Temperature at 2D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1	CL-4 Downcomer Temperature at 3D, 284 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1.5	CL-4 Downcomer Temperature at 3D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2	CL-4 Downcomer Temperature at 3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2.5	CL-4 Downcomer Temperature at 3D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-3	CL-4 Downcomer Temperature at 3D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1	CL-4 Downcomer Temperature at 4D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.3	CL-4 Downcomer Temperature at 4D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.6	CL-4 Downcomer Temperature at 4D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2	CL-4 Downcomer Temperature at 4D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.3	CL-4 Downcomer Temperature at 4D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.6	CL-4 Downcomer Temperature at 4D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1	CL-4 Downcomer Temperature at 8D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.3	CL-4 Downcomer Temperature at 8D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.6	CL-4 Downcomer Temperature at 8D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2	CL-4 Downcomer Temperature at 8D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.3	CL-4 Downcomer Temperature at 8D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.6	CL-4 Downcomer Temperature at 8D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-105	CL-1 Temperature (SC-105)	450	40	450	40	Fluid Temperature (F)
TF-106	CL-2 Temperature (SC-106)	450	40	450	40	Fluid Temperature (F)
TF-107	CL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-108	CL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-113	DVI-1/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-114	DVI-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-115	DVI-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-116	DVI-2/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-118	Lower Rx Vessel Layer Y-Y at 30 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-120	Top of Rx at 8.5 inches & 350 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-126	Lower Rx Vessel Layer A-A at 225 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-127	Lower Rx Vessel Layer A-A at 315 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-128	Lower Rx Vessel Layer C-C at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-129	Lower Rx Vessel Layer C-C at 32 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-130	Lower Rx Vessel Layer G-G at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-131	Lower Rx Vessel Layer G-G at 11.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-132	Upper Rx Vessel Layer F-F at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-133	Upper Rx Vessel Layer F-F at 8 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-134	Upper Rx Vessel Layer E-E at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-135	Upper Rx Vessel Layer E-E at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-140	HL-2 Temperature at Rx Flange (SC-140)	450	40	450	40	Fluid Temperature (F)
TF-141	HL-1 Temperature at Rx Flange (SC-141)	450	40	450	40	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
IF-142	HL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-143	HL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-147	Upper Rx Vessel Layer I-I at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-148	Upper Rx Vessel Layer I-I at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-149	Upper Rx Vessel Layer H-H at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-150	Upper Rx Vessel Layer H-H at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-151	Upper Rx Vessel Layer E-E at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-152	Upper Rx Vessel Layer E-E at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-153	Upper Rx Vessel Layer F-F at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-154	Upper Rx Vessel Layer F-F at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-155	Lower Rx Vessel Layer G-G at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-156	Lower Rx Vessel Layer G-G at 191.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-157	Lower Rx Vessel Layer C-C at 212 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-158	Lower Rx Vessel Layer C-C at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-162	Lower Rx Vessel Layer A-A at 45 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-163	Lower Rx Vessel Layer A-A at 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-164	Upper Rx Vessel Layer H-H at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-165	Upper Rx Vessel Layer H-H at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-166	Upper Rx Vessel Layer I-I at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-167	Rx Heater Rod B2-319 at 40.13 Inches	1000	0	1000	0	Fluid Temperature (F)
IF-168	Upper Rx Vessel Layer K-K at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-169	Upper Rx Vessel Layer M-M at 90 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-170	Upper Rx Vessel Layer M-M at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-171	Top of Rx Down to within 0.50 inches of Upper Support Plate Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-172	Lower Rx Vessel Layer AA-AA at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-173	Lower Rx Vessel Layer AA-AA at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-201	CL-1 at RCP-1 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-202	CL-2 at RCP-2 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-203	CL-3 at RCP-3 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-204	CL-4 at RCP-4 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-205	HL-1 Temperature at SG-1 Head (SC-205)	450	40	450	40	Fluid Temperature (F)
IF-206	HL-2 Temperature at SG-2 Head (SC-206)	450	40	450	40	Fluid Temperature (F)
IF-207	SG-1 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-208	SG-2 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-209	SG-1 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-210	SG-2 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-211	SG-1 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-212	SG-2 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-213	SG-1 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-214	SG-2 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-215	SG-1 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-216	SG-2 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-217	SG-1 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-218	SG-2 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-221	CL-3 T/C Rod at 3.25 Inches Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-222	CL-4 T/C Rod at 3.25 Inches Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-223	CL-3 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-224	CL-4 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
IF-225	CL-3 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-226	CL-4 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-227	CL-3 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-228	CL-4 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-229	CL-3 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-230	CL-4 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-231	CL-3 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-232	CL-4 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-1	CL-1 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-2	CL-1 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-3	CL-1 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-1	CL-2 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-2	CL-2 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-3	CL-2 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-1	CL-3 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-2	CL-3 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-3	CL-3 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-1	CL-4 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-2	CL-4 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-3	CL-4 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-255	CL-1 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-256	CL-2 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-257	CL-3 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-258	CL-4 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-301	SG-1 Steam Temperature (SC-301)	450	40	450	40	Fluid Temperature (F)
TF-305	SG-1 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-306	SG-2 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-307	SG-1 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-308	SG-2 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-310	SG-2 Steam Temperature (SC-310)	450	40	450	40	Fluid Temperature (F)
TF-311	SG-1 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-312	SG-2 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-401	ACC-1 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-402	ACC-2 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-403	ACC-1 N2Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-404	ACC-2 N2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-405	ACC-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-406	ACC-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-501	CMT-1 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-502	CMT-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-503	CMT-1 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-504	CMT-2 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-505	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-506	CMT-2 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-507	CMT-1 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-508	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-509	CMT-1 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-510	CMT-2 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-511	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-512	CMT-2 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-513	CMT-1 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-514	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-515	CMT-1 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-516	CMT-2 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-517	CMT-1 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-518	CMT-2 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-519	CMT-1 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-520	CMT-2 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-521	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-522	CMT-2 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-523	CMT-1 Long T/C Rod at 49.05 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-524	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-525	CMT-1 at 1/2 Upper-Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-526	CMT-2 SPARGER 2/3 TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-527	CMT-1 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-528	CMT 2/3 HEAD TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-529	CMT-1 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-530	CMT-2 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-531	CMT-1 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-532	CMT-2 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-533	CMT-1 CL Balance Line at CL-3 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-535	CMT-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-536	CMT-2 CL Balance Line at CL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-537	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-538	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-539	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-540	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-541	CMT-1 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-542	CMT-2 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-543	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-544	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-546	CMT-2 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-547	CMT-1 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-548	CMT-2 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-549	CMT-1 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-550	CMT-2 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-551	CMT-1 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-552	CMT-2 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-553	CMT-1 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-554	CMT-2 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-555	CMT-1 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-556	CMT-2 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-557	CMT-1 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-558	CMT-2 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-559	CMT-1 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-560	CMT-2 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-561	CMT-1 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-562	CMT-2 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-563	CMT-1 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)

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NRC-COND-07 DAS Configuration

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-564	CMT-2 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-601	PZR Surge Line at PZR Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-602	ADS1-3 Common Line at PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-603	PZR Surge Line at HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-605	PZR Water Space Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-608	PZR Temperature (SC-608)	450	40	450	40	Fluid Temperature (F)
TF-609	ADS4-1 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-610	ADS4-2 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-614	PZR Steam Vent Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-615	ADS1-3 Common Line From PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-616	ADS1-3 Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-617	ADS1-3 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-618	ADS4-2 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-619	ADS4-1 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-620	ADS4-2 Inlet From HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-621	ADS4-1 Inlet From HL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-622	ADS4-2 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-623	ADS4-1 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-701	IRWST/PRHR T/C Rod at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-702	IRWST/PRHR T/C Rod at 7.98 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-703	IRWST/PRHR T/C Rod at 15.97 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-704	IRWST/PRHR T/C Rod at 25.85 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-705	IRWST/PRHR T/C Rod at 35.73 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-706	IRWST/PRHR T/C Rod at 45.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-707	IRWST/PRHR T/C Rod at 55.49 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-708	IRWST/PRHR T/C Rod at 65.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-709	IRWST/PRHR T/C Rod at 75.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-710	IRWST/PRHR T/C Rod at 86.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-711	IRWST/PRHR T/C Rod at 97.47 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-712	IRWST/PRHR T/C Rod at 108.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-713	IRWST Discharge to DVI-01 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-714	IRWST Discharge to DVI-02 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-715	IRWST Sparger T/C Rod at 8.97 inches Temperature (SC-715)	1000	0	1000	0	Fluid Temperature (F)
TF-716	IRWST Sparger T/C Rod at 36.63 inches Temperature	240	40	240	40	Fluid Temperature (F)
TF-717	IRWST Sparger T/C Rod at 66.34 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-718	IRWST Sparger T/C Rod at 98.45 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-719	IRWST Sparger Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-720	IRWST/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-721	IRWST/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-722	IRWST Steam Exhaust Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-723	IRWST/Primary Sump Overflow Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-801	CVSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-802	RNSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-803	PRHR HX Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-804	PRHR HX Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-805	PRHR HX Long Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-806	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-808	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-809	PRHR HX Long Tube at Center Temperature	1000	0	1000	0	Fluid Temperature (F)

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NRC-COND-07 DAS Configuration

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-810	PRHR HX Short Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-811	PRHR HX Long Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-812	PRHR HX Outlet Head Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-813	RNSP Discharge to DVI-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-814	RNSP Discharge to DVI-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-901	Primary Sump Inlet from Fill Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-902	Secondary Sump Temperature (SC-902)	240	40	240	40	Fluid Temperature (F)
TF-903	Primary Sump Temperature (SC-903)	240	40	240	40	Fluid Temperature (F)
TF-904	Primary Sump/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-905	Primary Sump at Secondary Sump Crossover Level Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-906	Primary Sump Exhaust Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-907	Primary Sump at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-908	Break Separator Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-909	Primary Sump/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-910	CRP Discharge to Primary Sump Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-911	CRP Discharge to IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-912	Break Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-913	Break Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-914	Condensate Return Tank Temperature (SC-914)	200	40	200	40	Fluid Temperature (F)
TF-915	Break Separator 6-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-916	BAMS Header 10-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-917	BAMS Header Temperature (SC-917)	240	40	240	40	Fluid Temperature (F)
TF-918	Break Separator 8-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TH-103	Rx Heater Rod Temperature (SCTH-101-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-211	Rx Heater Rod Temperature (SCTH-103-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-305	Rx Heater Rod Temperature (SCTH-304-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-309	Rx Heater Rod Temperature (SCTH-102-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-401	Rx Heater Rod Temperature (SCTH-104-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-507	Rx Heater Rod Temperature (SCTH-314-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-601	PZR Heater Rod #1	1000	0	1000	0	Internal Rod Temperature (F)
TH-602	PZR Heater Rod #2	1000	0	1000	0	Internal Rod Temperature (F)
TH-603	PZR Heater Rod #3	1000	0	1000	0	Internal Rod Temperature (F)
TH-604	PZR Heater Rod #4	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-1	Core Thermocouple Rod D-001 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-2	Core Thermocouple Rod D-001 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-3	Core Thermocouple Rod D-001 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-4	Core Thermocouple Rod D-001 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-5	Core Thermocouple Rod D-001 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-6	Core Thermocouple Rod D-001 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-1	Core Thermocouple Rod D-303 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-2	Core Thermocouple Rod D-303 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-3	Core Thermocouple Rod D-303 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-4	Core Thermocouple Rod D-303 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-5	Core Thermocouple Rod D-303 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-6	Core Thermocouple Rod D-303 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-1	Core Thermocouple Rod E-308 at 22.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-2	Core Thermocouple Rod E-308 at 34.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-3	Core Thermocouple Rod E-308 at 46.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-4	Core Thermocouple Rod D-001 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)

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NRC-COND-07 DAS Configuration

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TR-308-5	Core Thermocouple Rod D-001 at 51.13 Inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-6	Core Thermocouple Rod D-303 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-1	Core Thermocouple Rod D-313 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-2	Core Thermocouple Rod D-313 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-3	Core Thermocouple Rod D-313 at 25.13 Inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-4	Core Thermocouple Rod D-313 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-5	Core Thermocouple Rod D-313 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-6	Core Thermocouple Rod D-313 at 43.13 Inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-1	Core Thermocouple Rod F-318 at 28.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-2	Core Thermocouple Rod F-318 at 40.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-3	Core Thermocouple Rod F-318 at 51.86 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-4	Core Thermocouple Rod D-303 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-5	Core Thermocouple Rod D-313 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-6	Core Thermocouple Rod D-313 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TW-104-1.5D-2	CL-4 Downcomer Wall Temperature at 1.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-2	CL-4 Downcomer Wall Temperature at 3.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-3	CL-4 Downcomer Wall Temperature at 3.5D, 345 degrees	1000	0	1000	0	Wall Temperature (F)
TW-201	SG-1 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-202	SG-2 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-203	SG-1 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-204	SG-2 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-205	SG-1 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-206	SG-2 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-208	SG-2 Long Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-209	SG-1 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-210	SG-2 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-601	ADS1-3 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-602	ADS4-2 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-603	ADS4-1 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-801	PRHR HX Long Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-802	PRHR HX Short Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-803	PRHR HX Long Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-804	PRHR HX Short Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-805	PRHR HX Short Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-806	PRHR HX Long Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-807	PRHR HX Short Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-808	PRHR HX Long Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-905	Break Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
DASRunning	DSC Engine is running, but not necessarily logging data	N/A	N/A	N/A	N/A	
DASLogging	DSC Engine is logging data to the Citadel database	N/A	N/A	N/A	N/A	
FVM-004	Catch Tank Steam Flow Rate	4.9885	1.001	70	0	Steam Flow Rate (cfm)
PT-004	Temp Steam Pressure for FVM-002	5.0026	1.0016	400	0	Pressure (psig)

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N/A
N/A




DEPARTMENT OF NUCLEAR ENGINEERING &
RADIATION HEALTH PHYSICS


**ADVANCED THERMAL HYDRAULIC
RESEARCH LABORATORY**

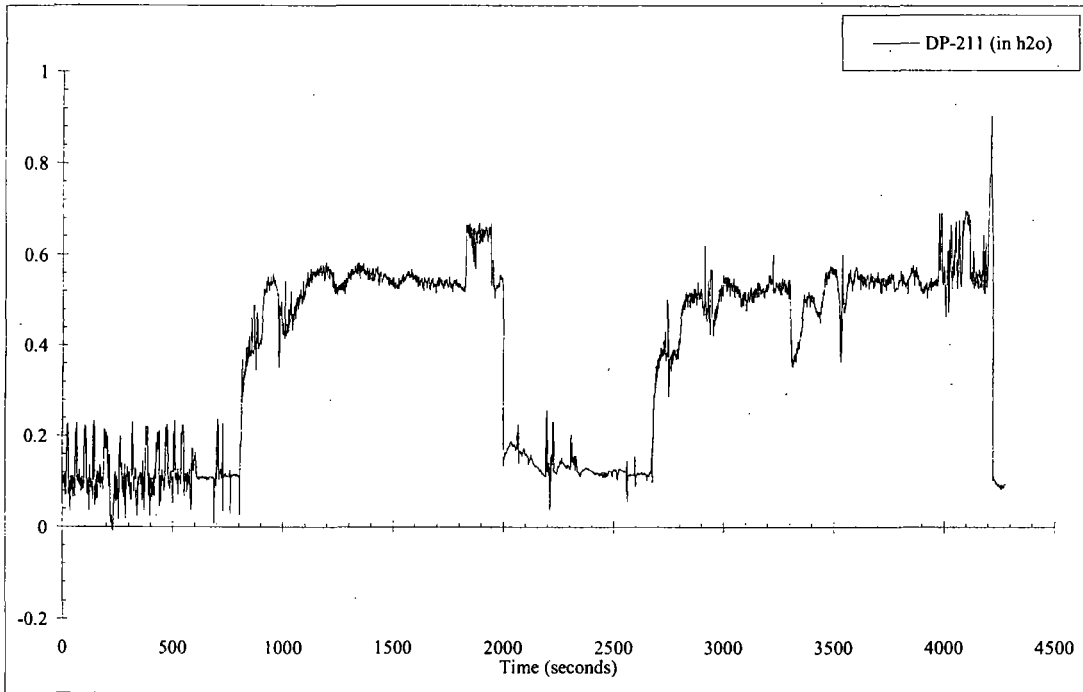
**STEAM GENERATOR U-TUBE CONDENSATION
TEST @ 300 PSIG WITH 10% NITROGEN**

NRC-COND-08

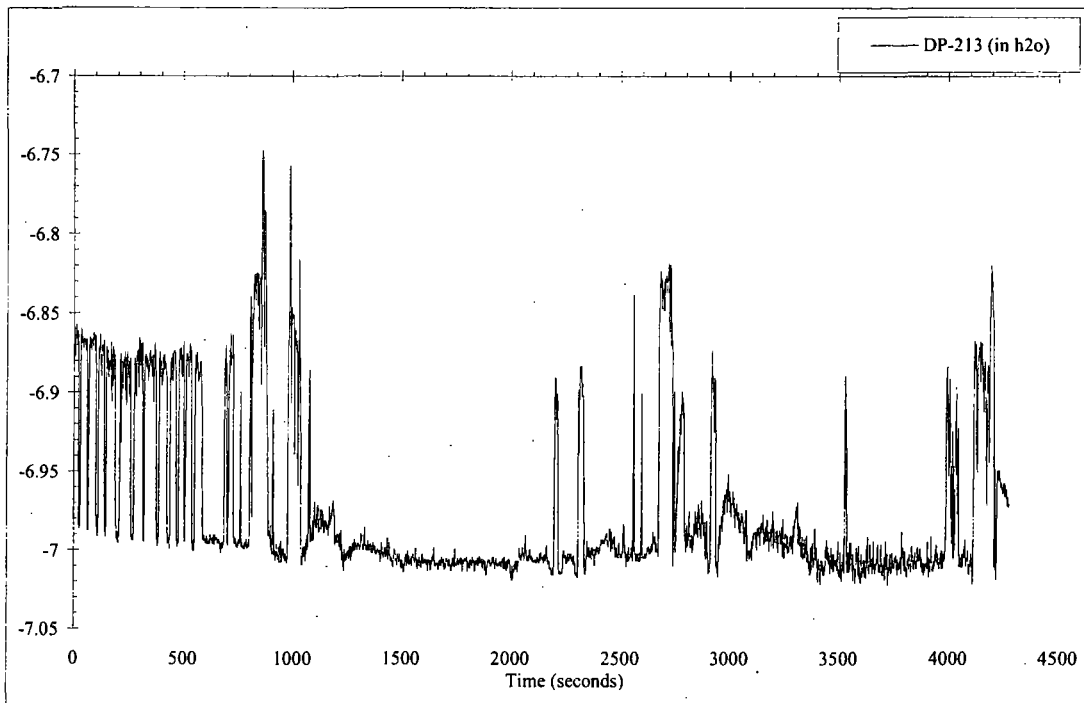
Revision 0

 5/17/2007
John Groome, Originator Date
Facility Operations Manager
Research Assistant

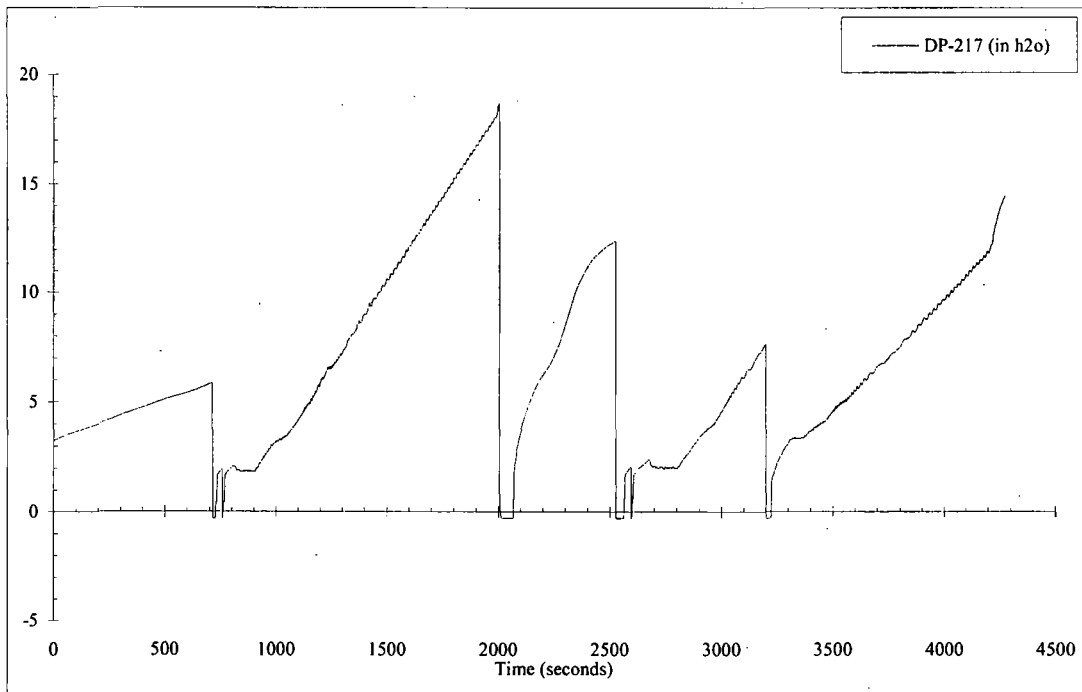
 5/17/2007
Brian Woods, Approval Date
Program Manager
Assistant Professor



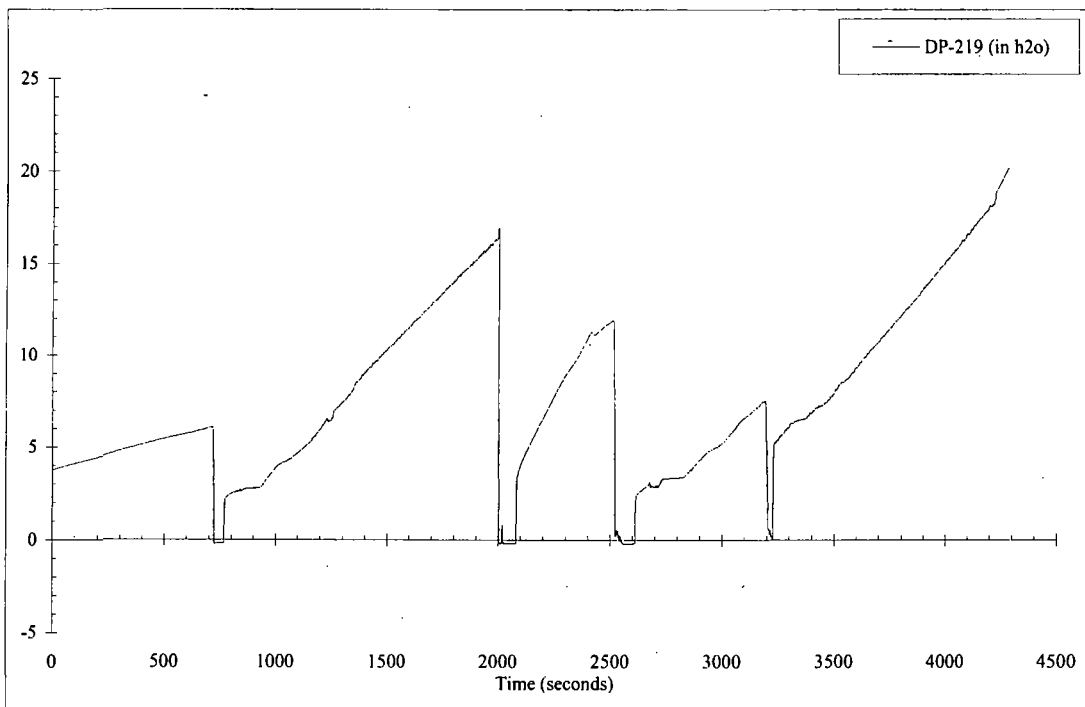
SG-1 Short Tube Entrance Losses



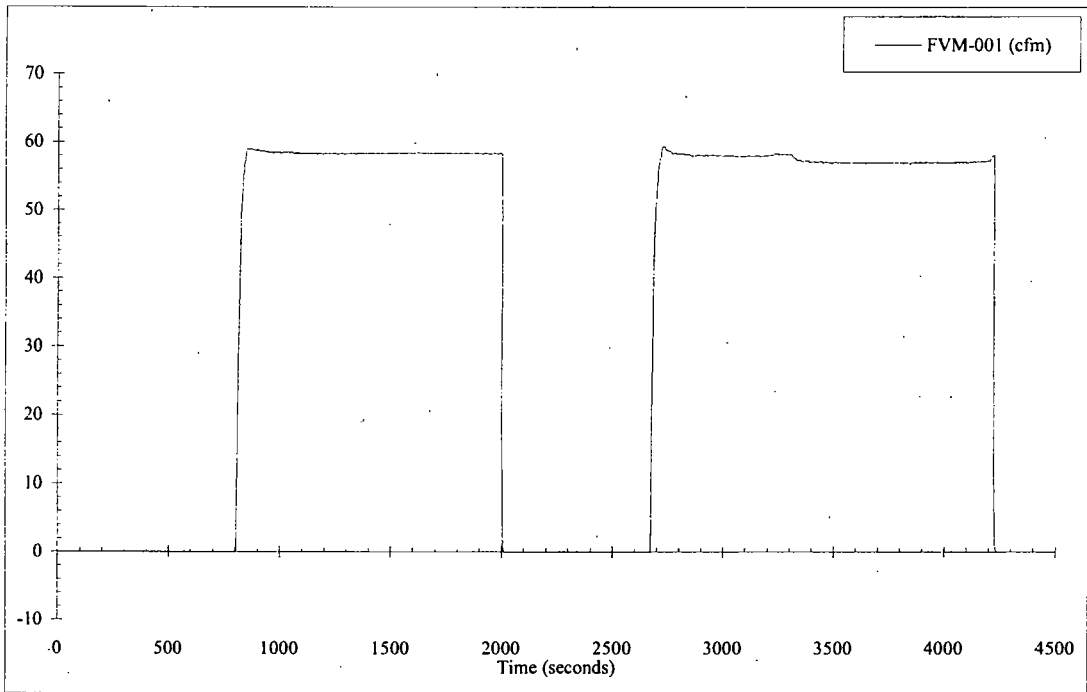
SG-1 Long Tube Exit Losses



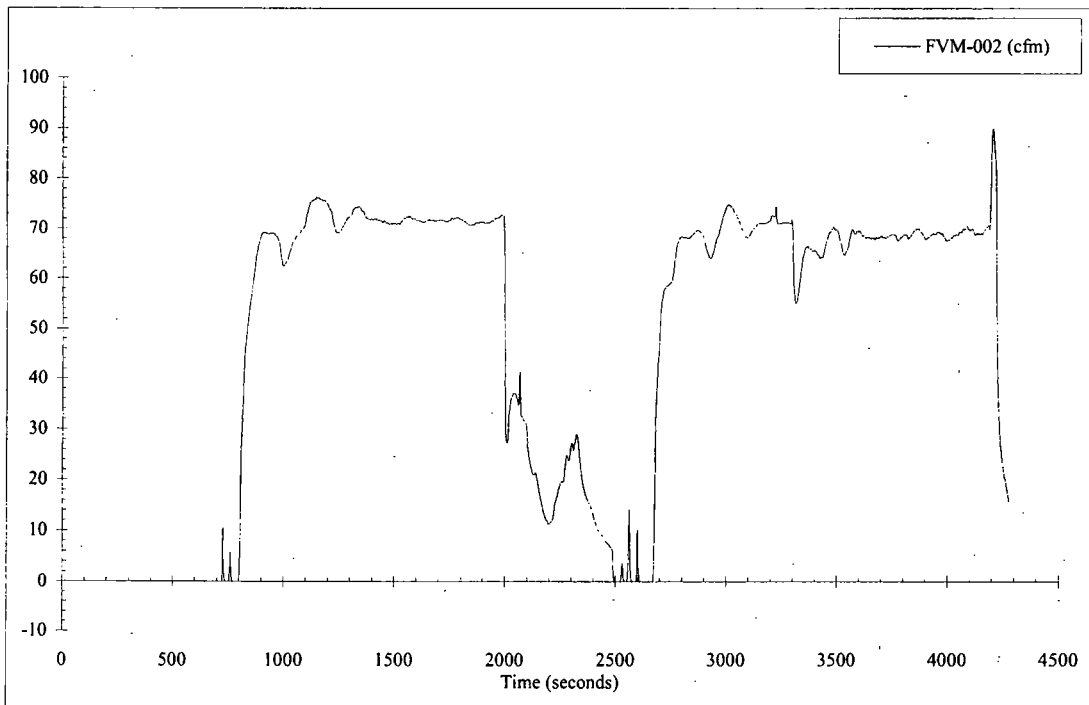
Separator Uncompensated Water Level



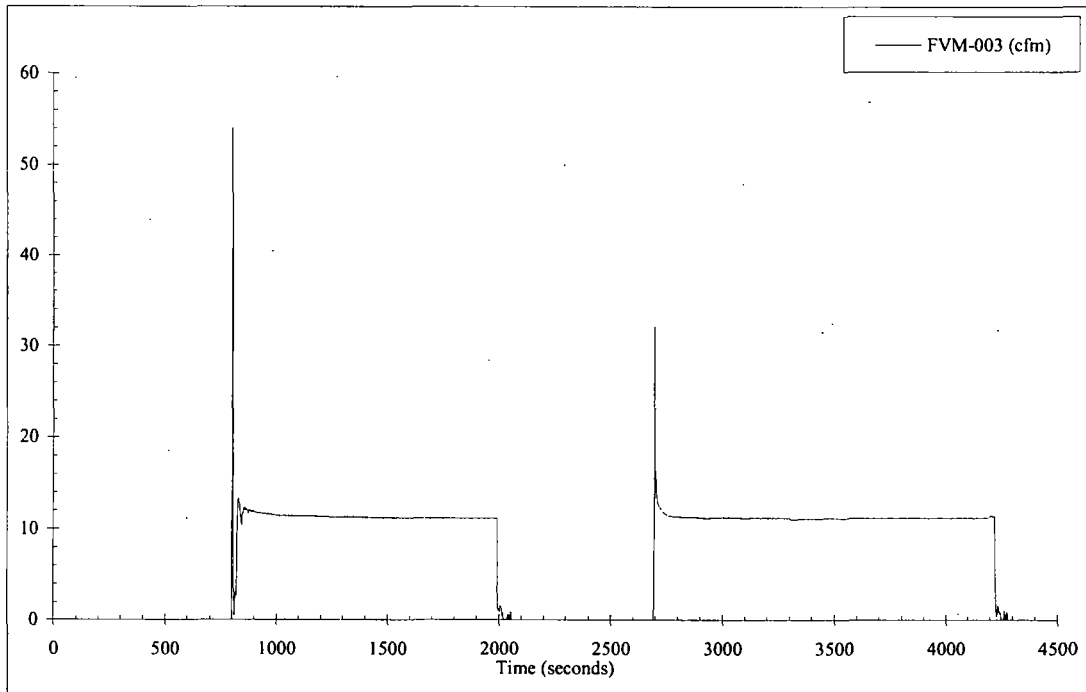
Catch Tank Uncompensated Water Level



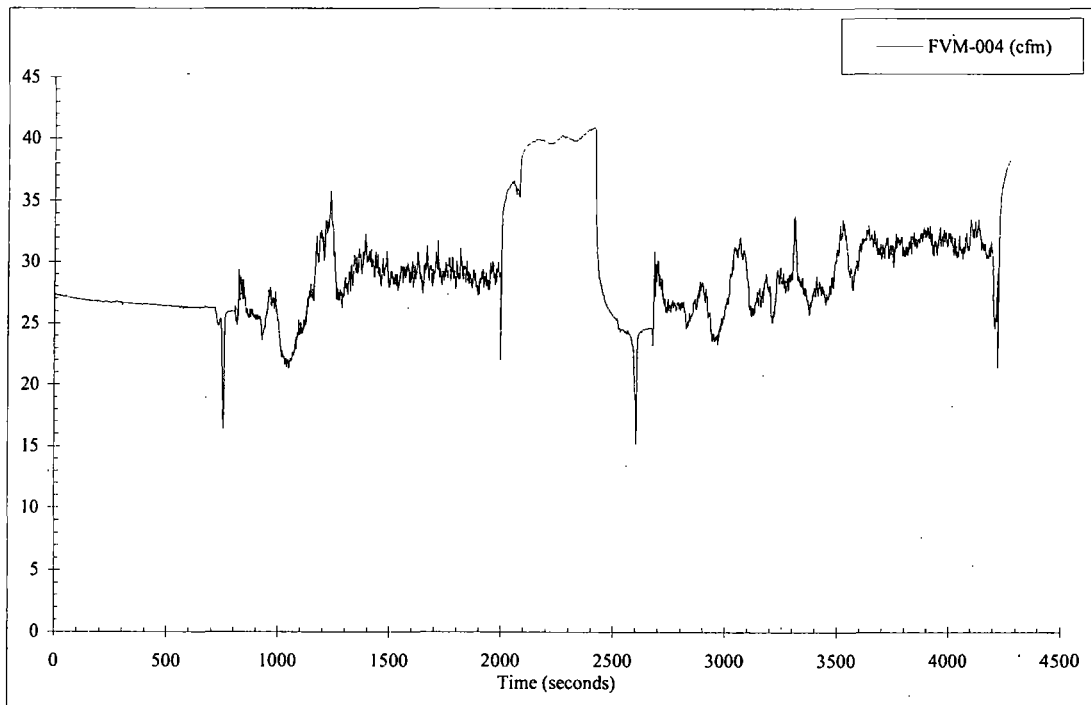
Separator Outlet Steam Flowrate



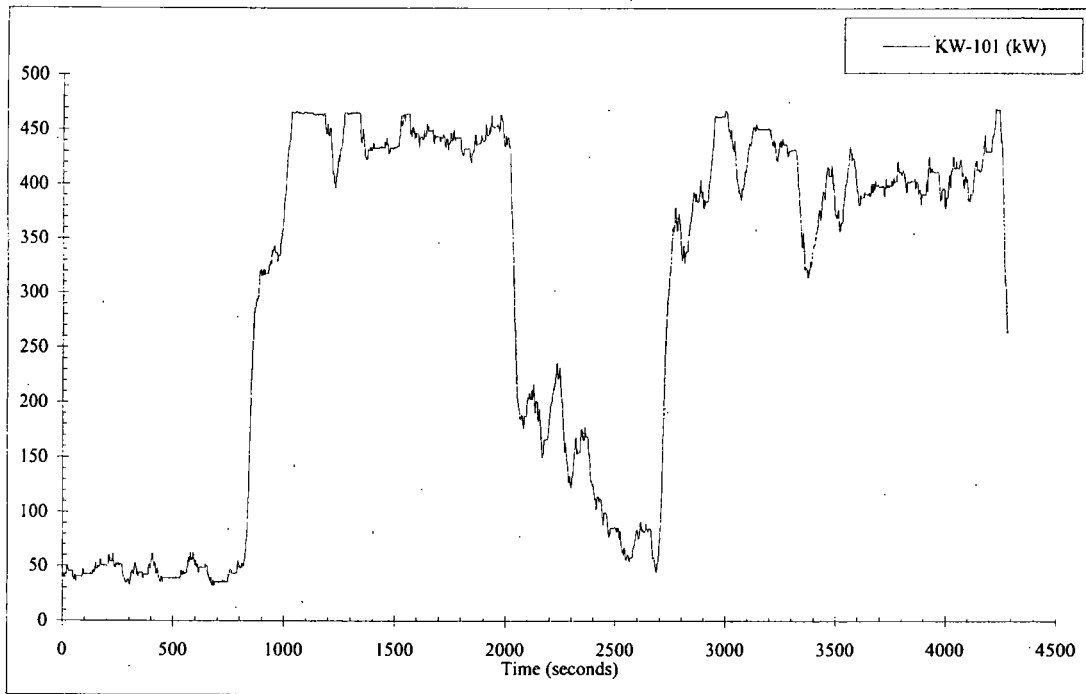
SG-2 Main Steam Flow



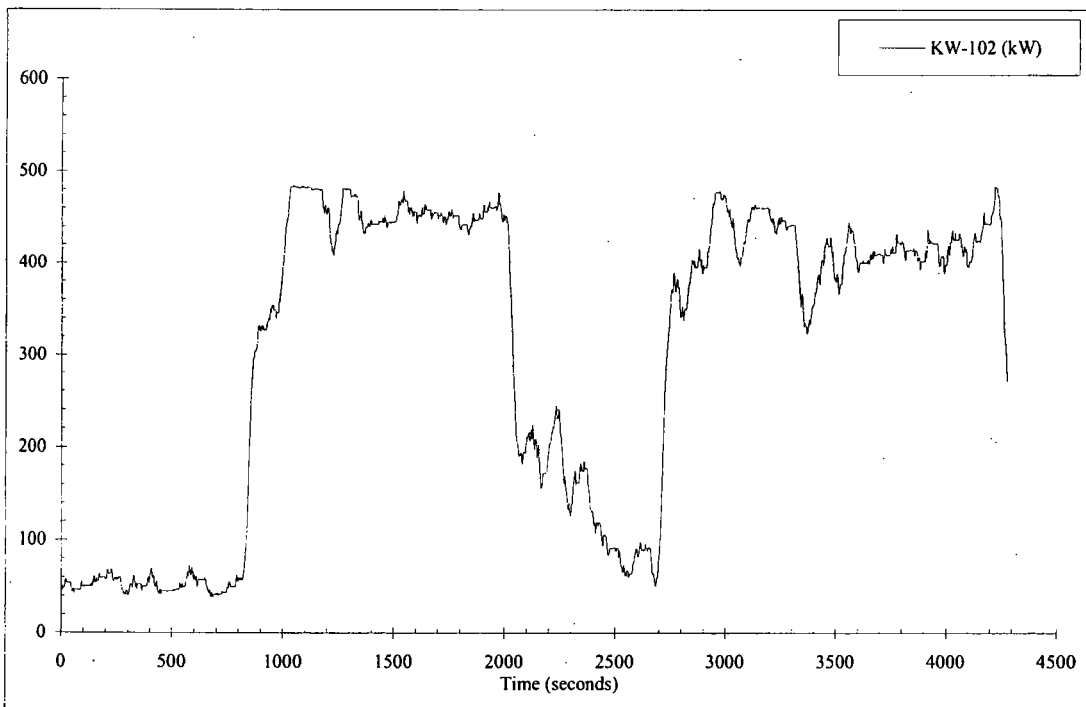
Main Steam Total Flow



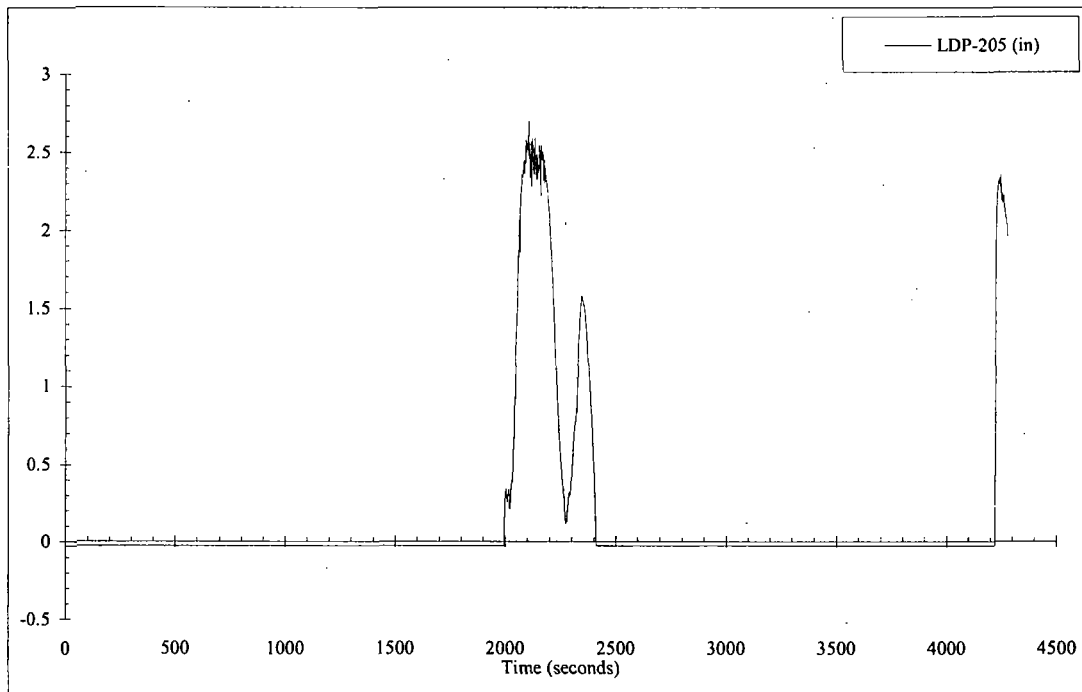
Catch Tank Steam Flow Rate



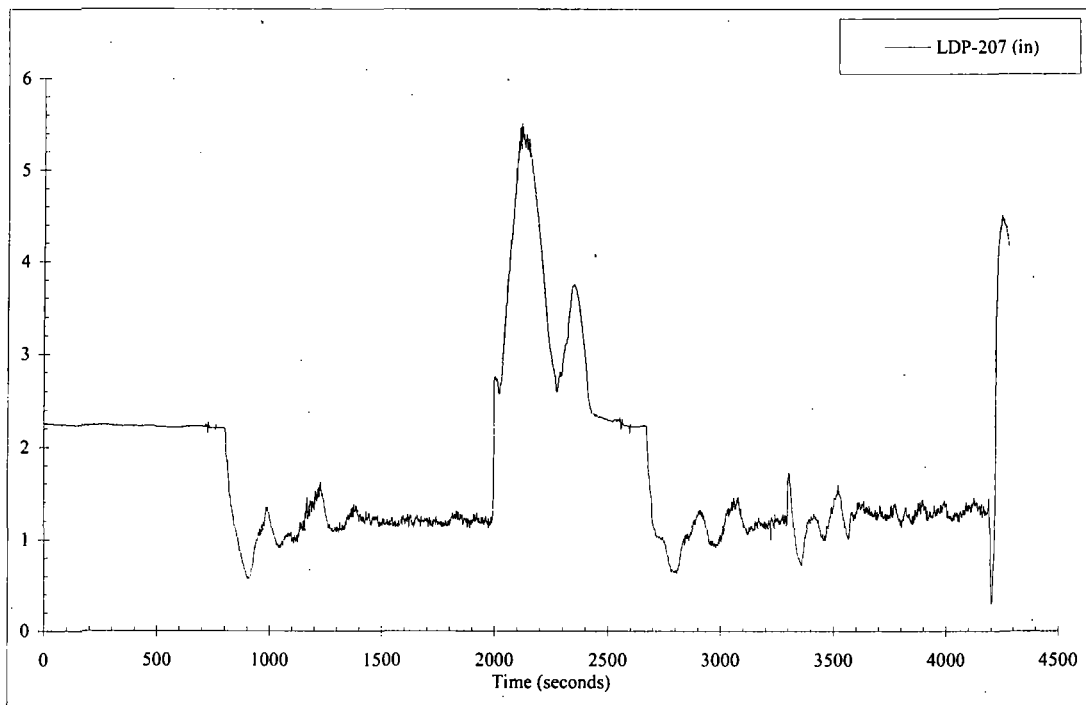
Rx Heater Group 1 Power



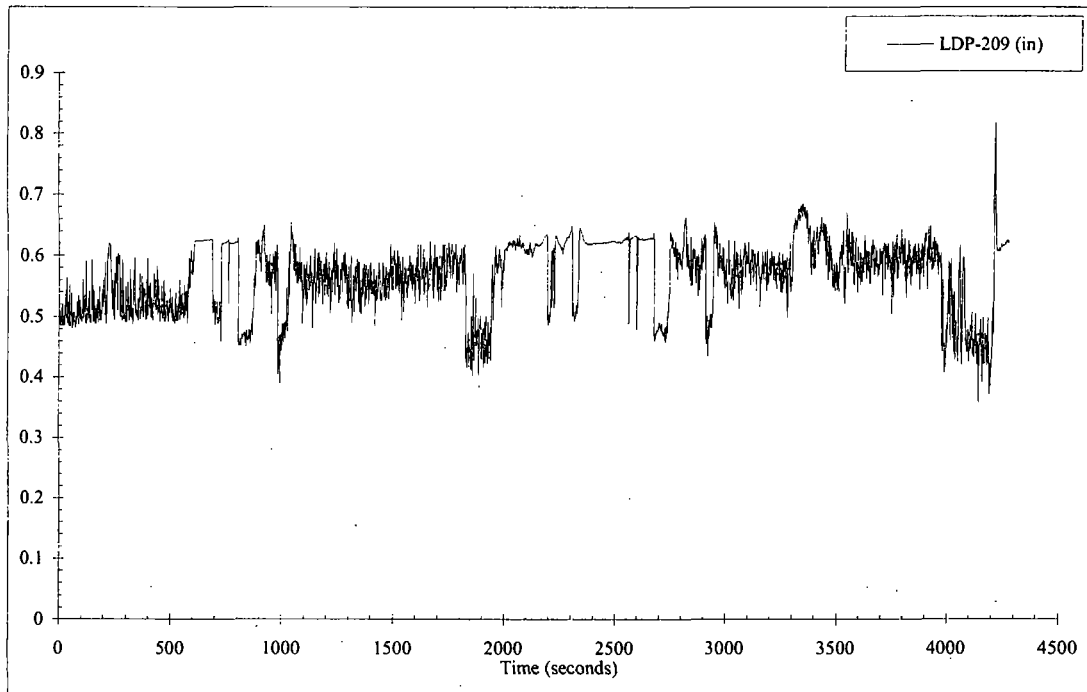
Rx Heater Group 2 Power



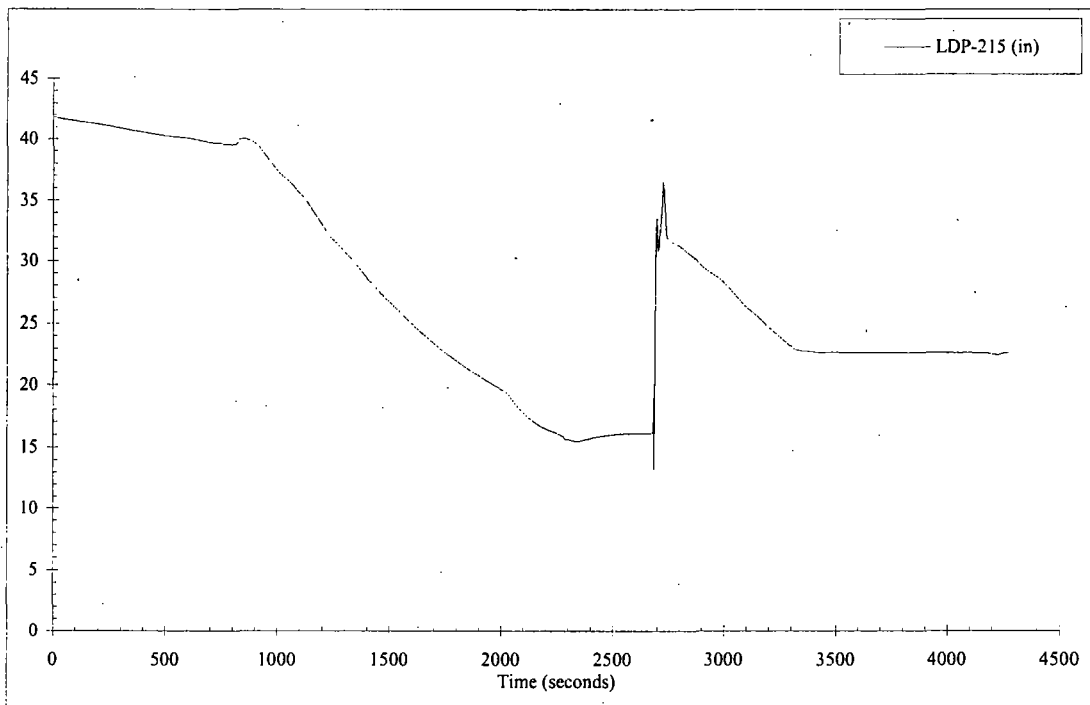
HL-1 Uncompensated Water Level



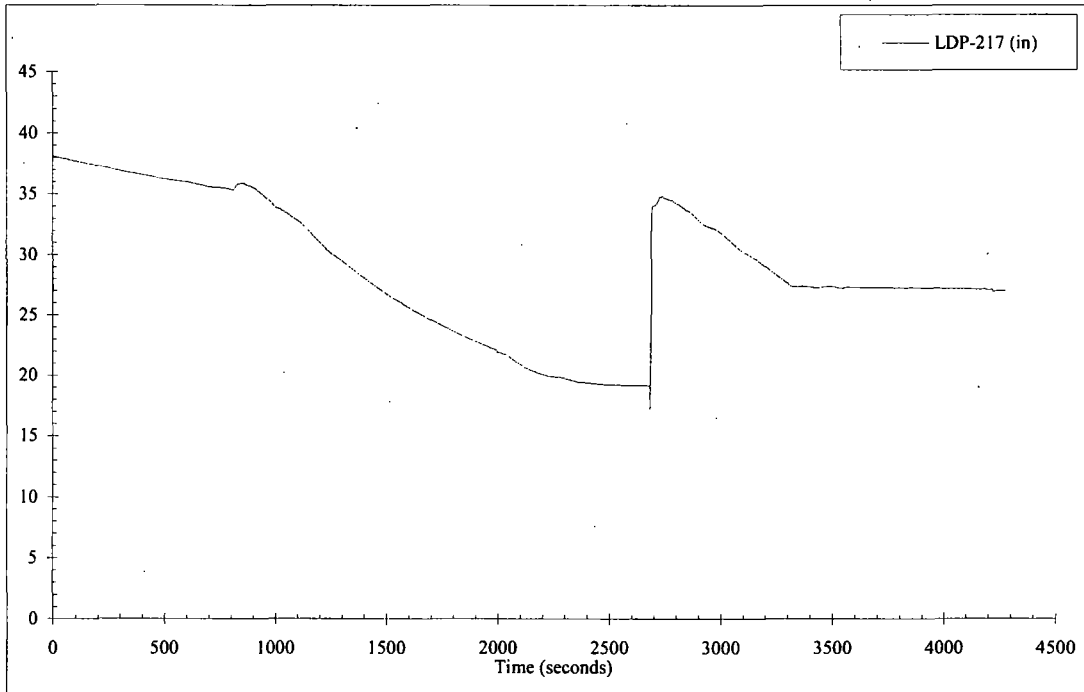
SG-1 to HL-1 Elbow Plenum Uncompensated Water Level



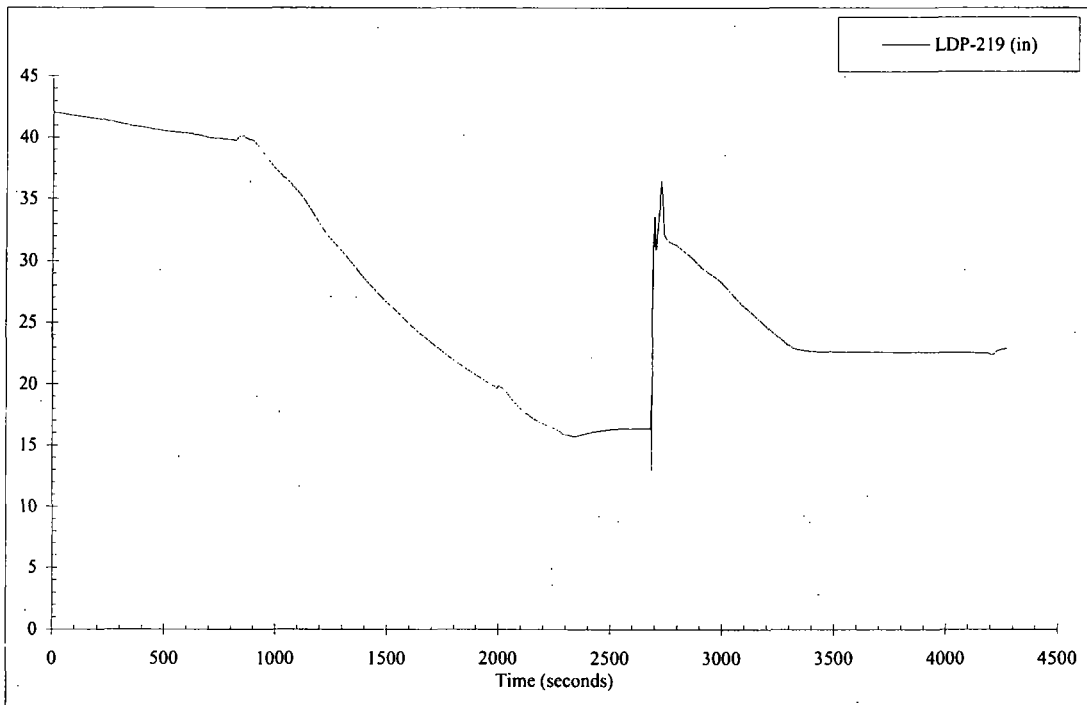
SG-1 to HL-1 Plenum Uncompensated Water Level



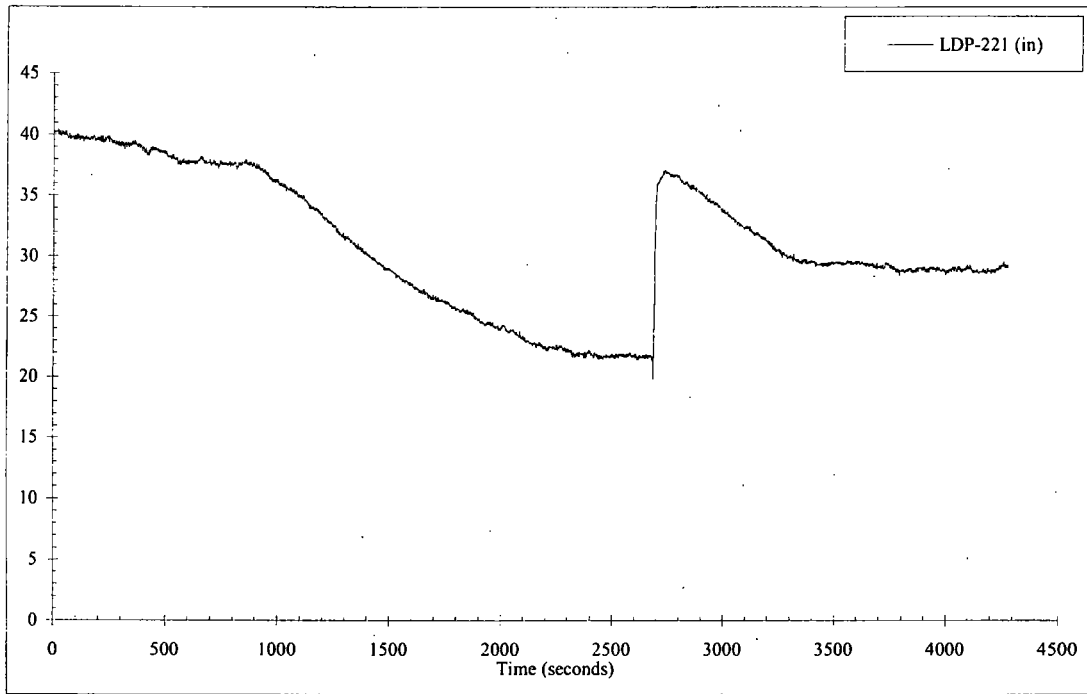
SG-1 Long Tube to HL Uncompensated Water Level



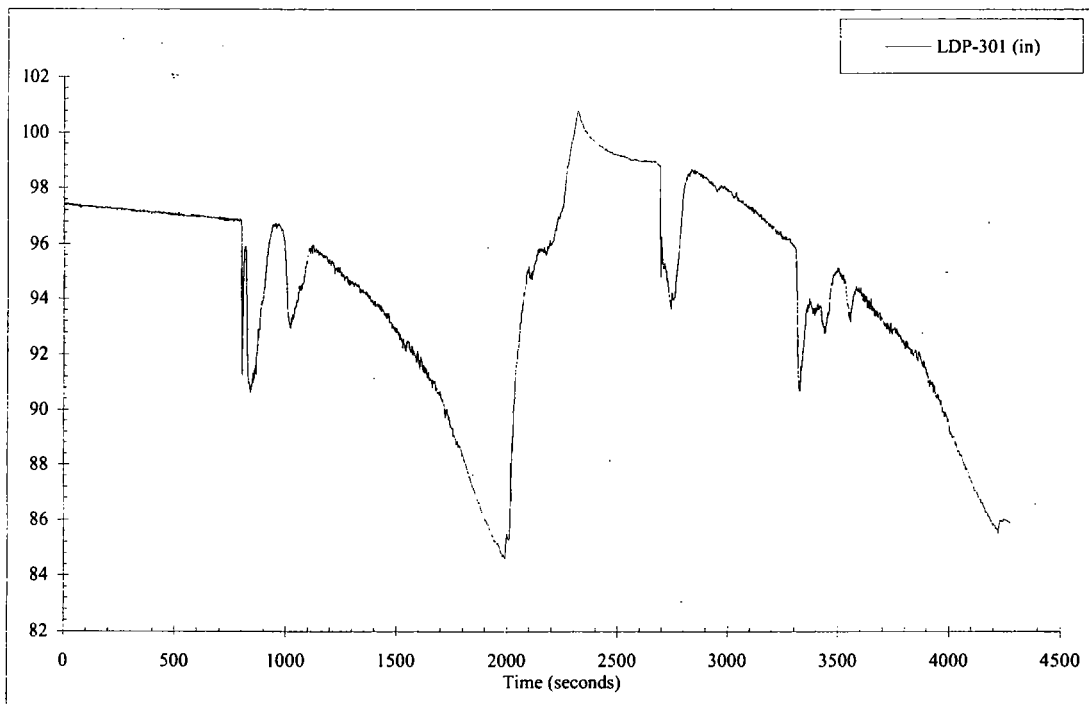
SG-1 Short Tube to HL Uncompensated Water Level



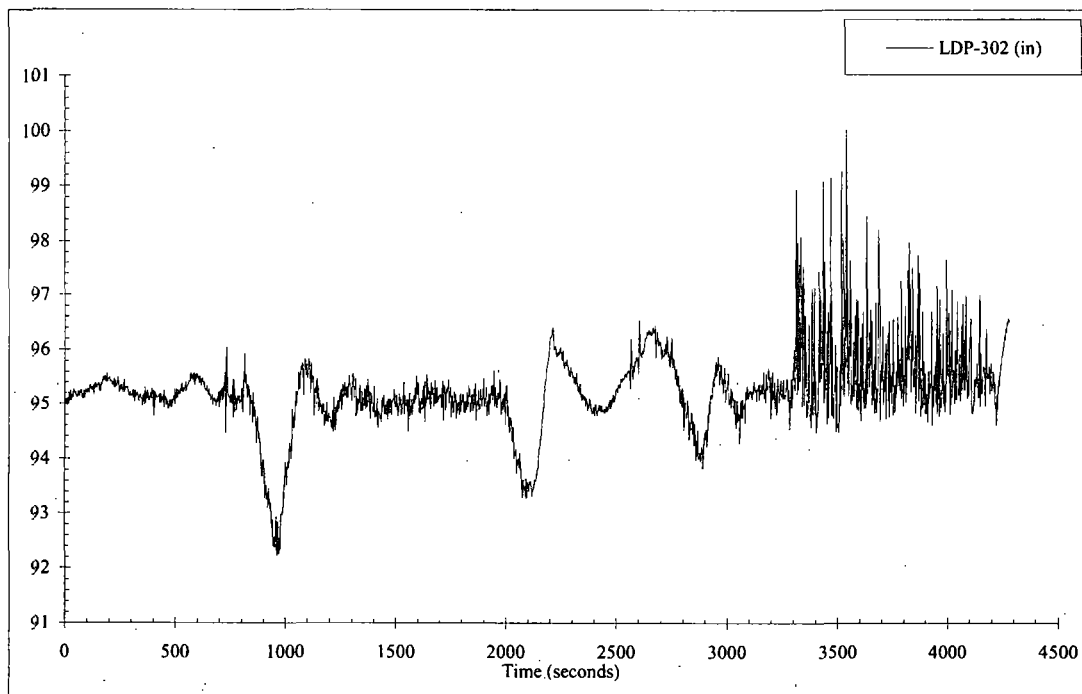
SG-1 Long Tube to CL Uncompensated Water Level



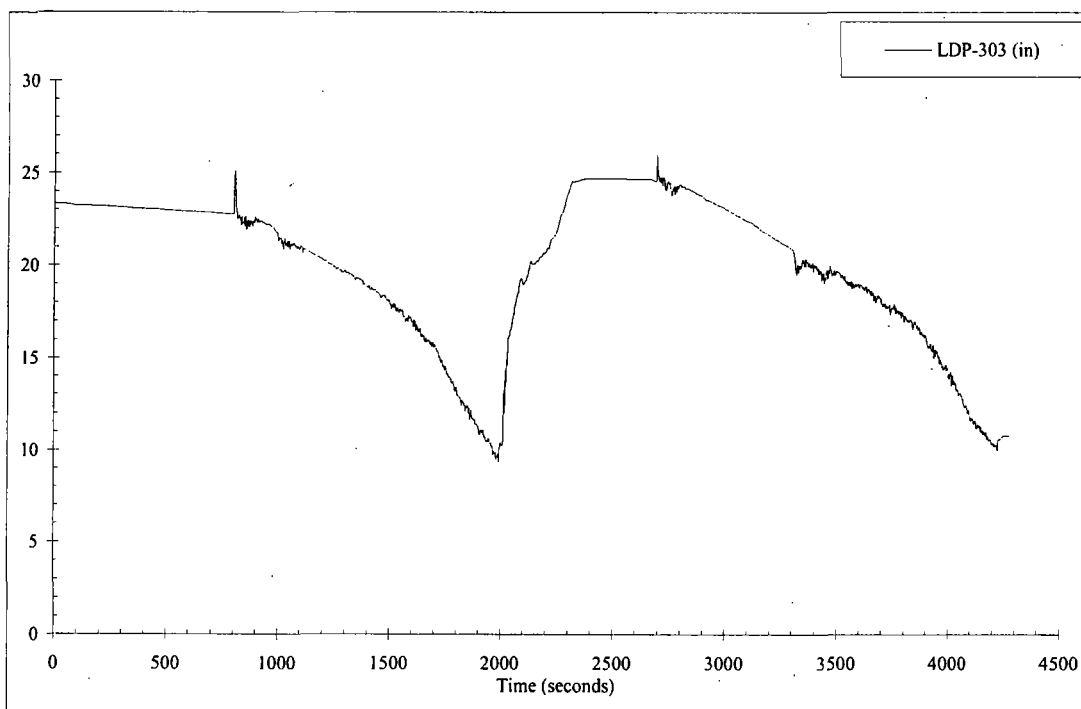
SG-1 Short Tube to CL Uncompensated Water Level



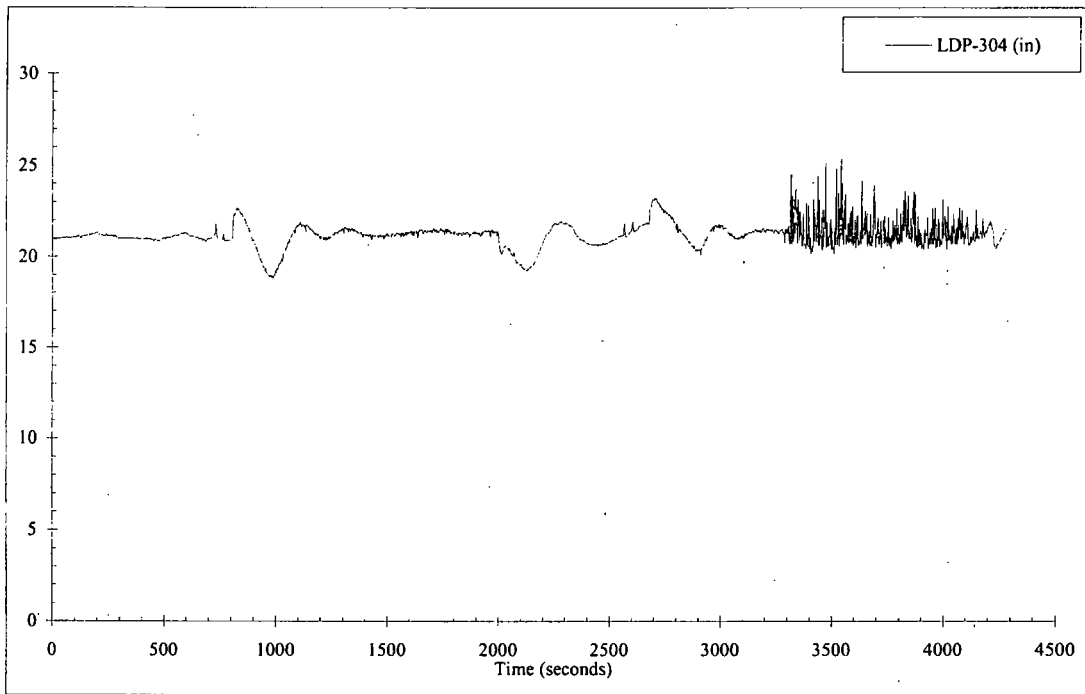
SG-1 WR Uncompensated Water Level



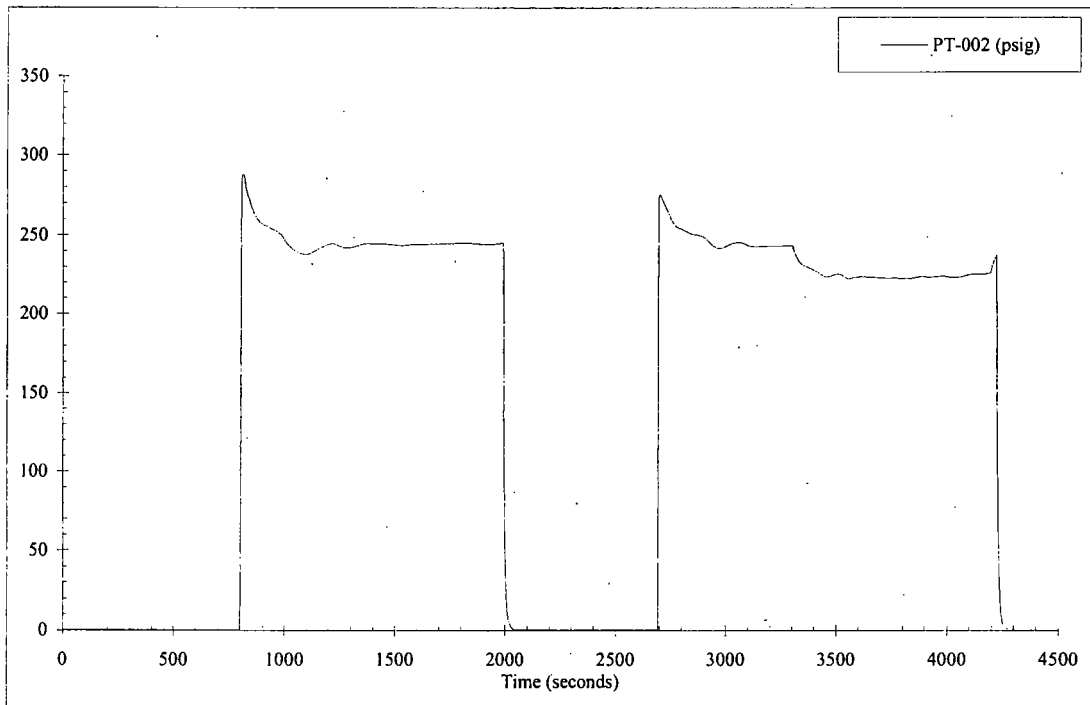
SG-2 WR Uncompensated Water Level



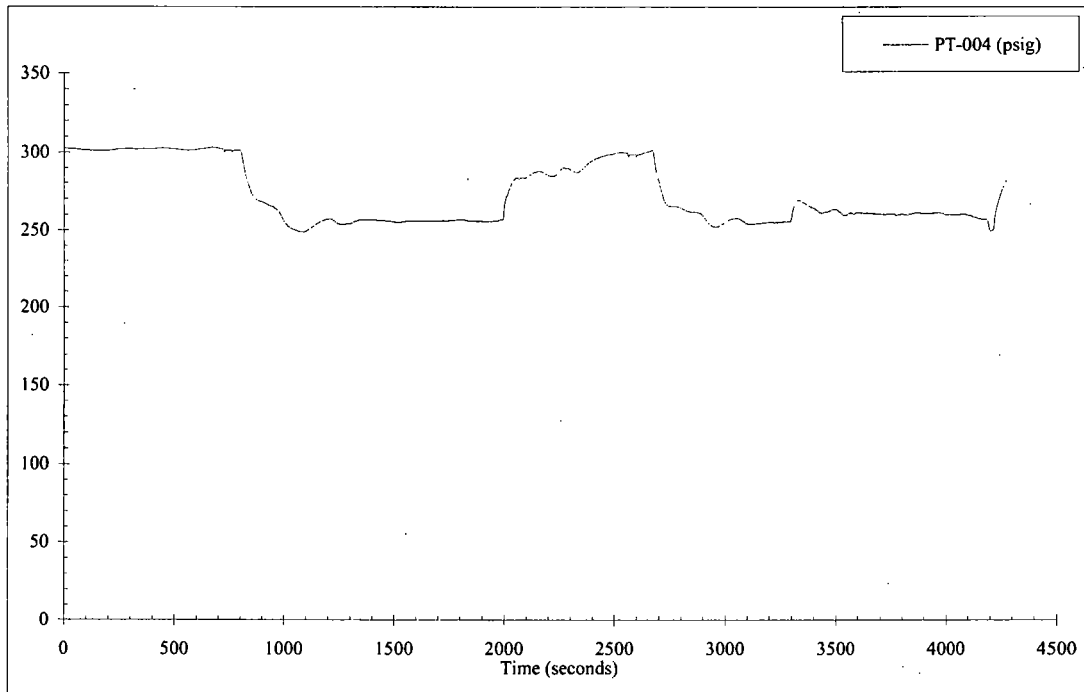
SG-1 NR Uncompensated Water Level



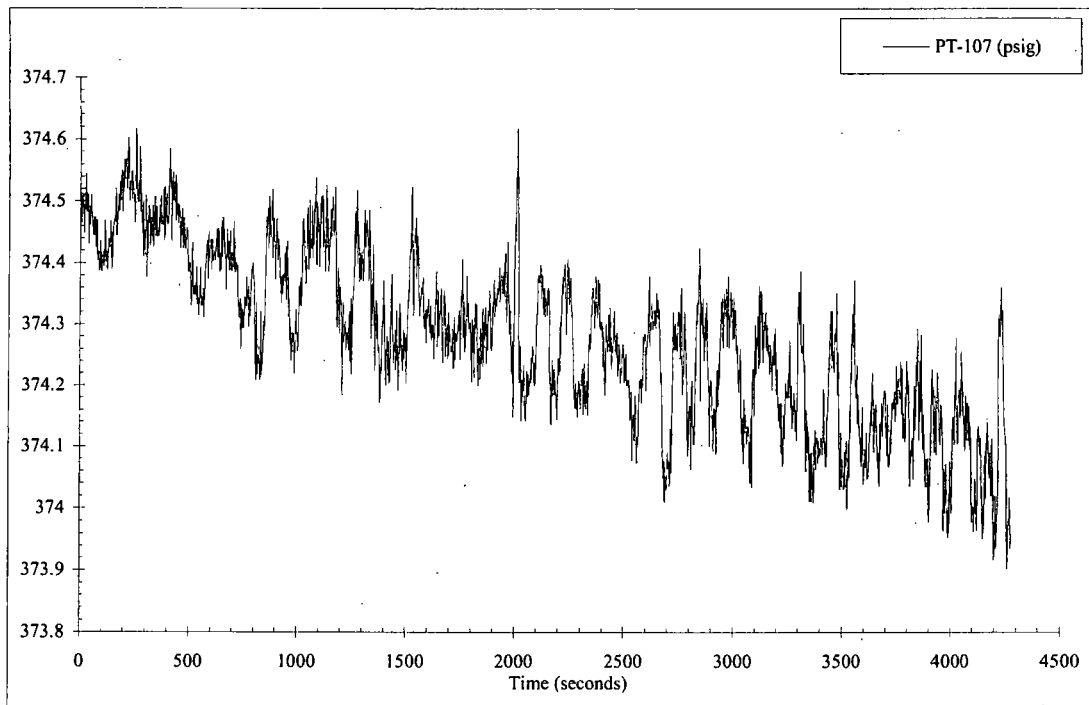
SG-2 NR Uncompensated Water Level



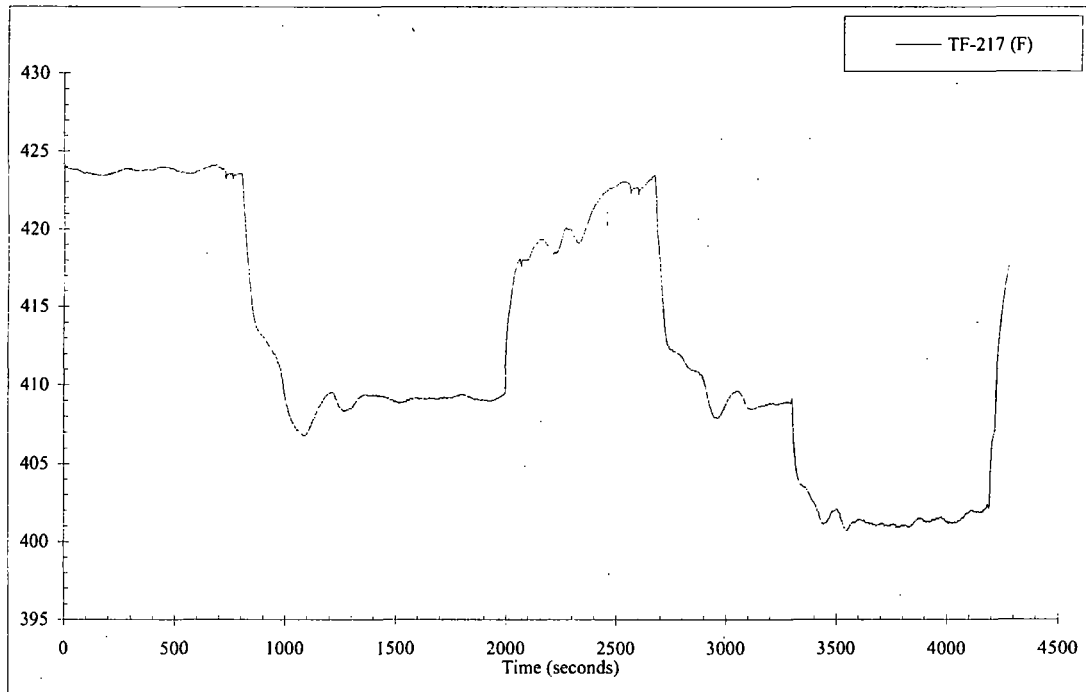
MS Header Pressure



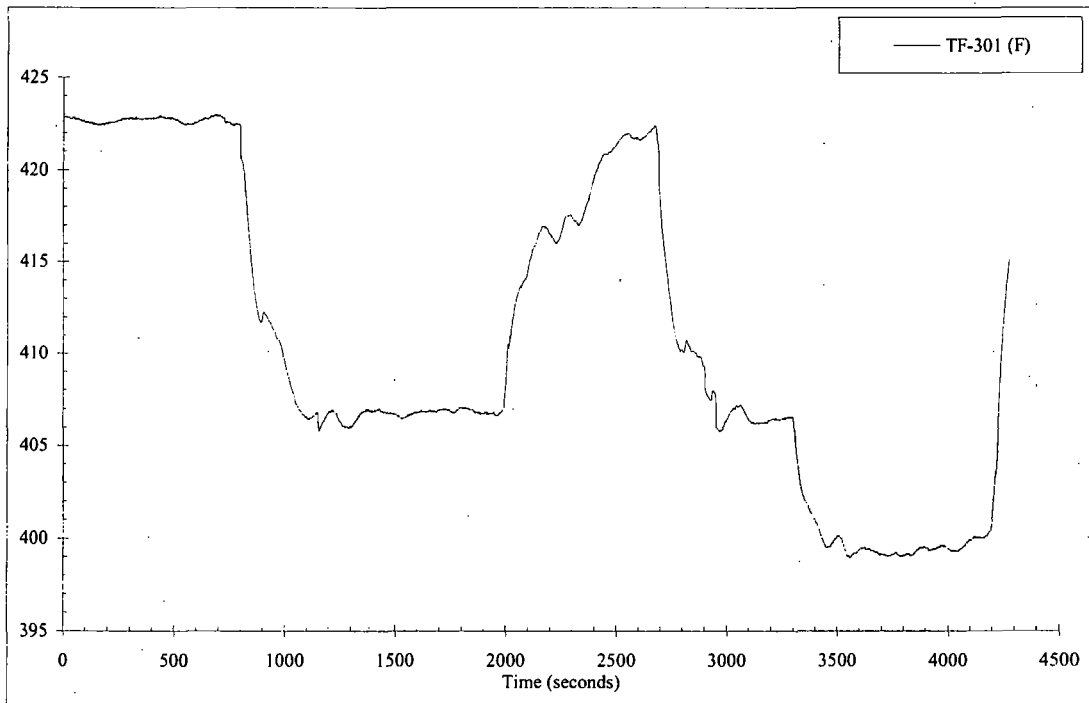
Temp Steam Pressure for FVM-002



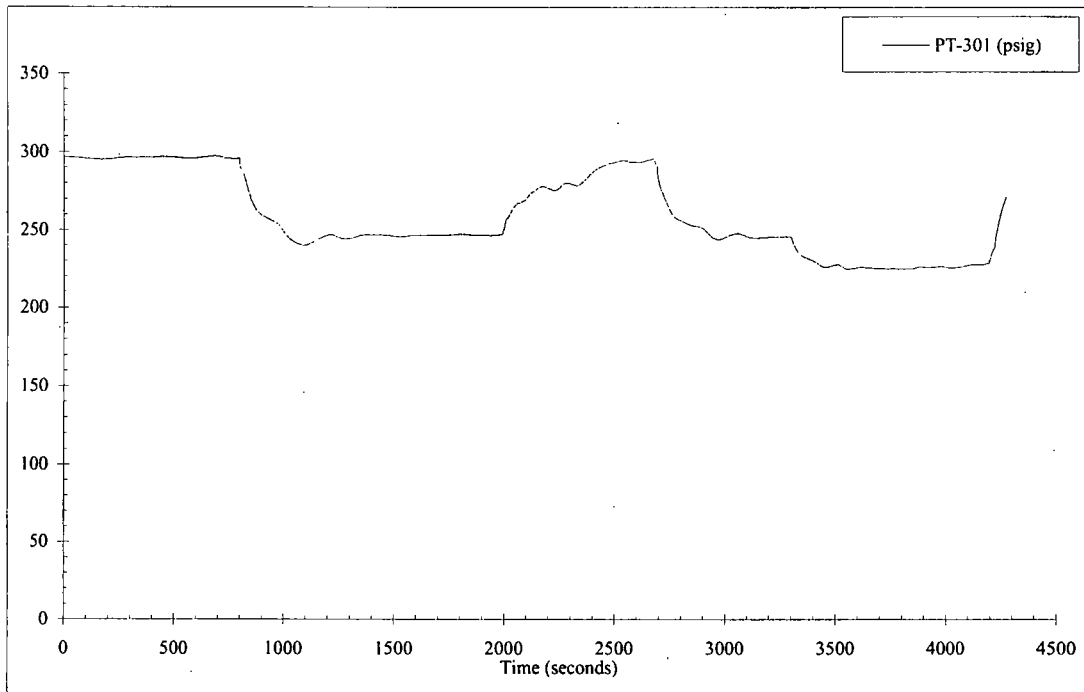
Rx Upper Head Pressure



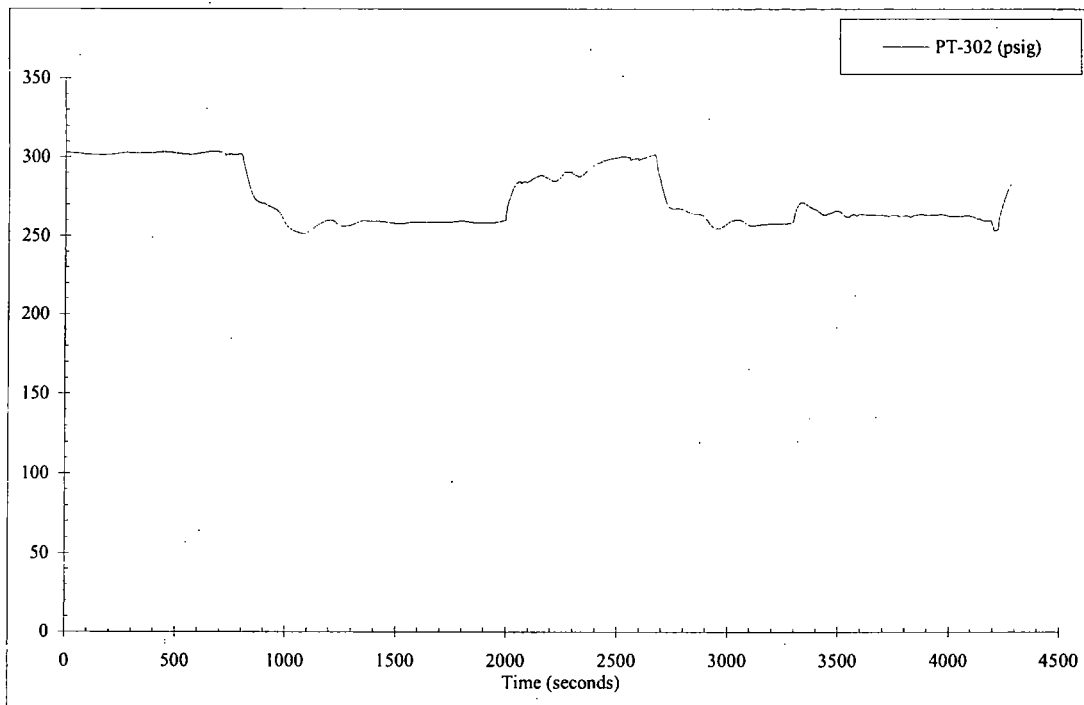
SG-1 Long Tube at Top Temperature



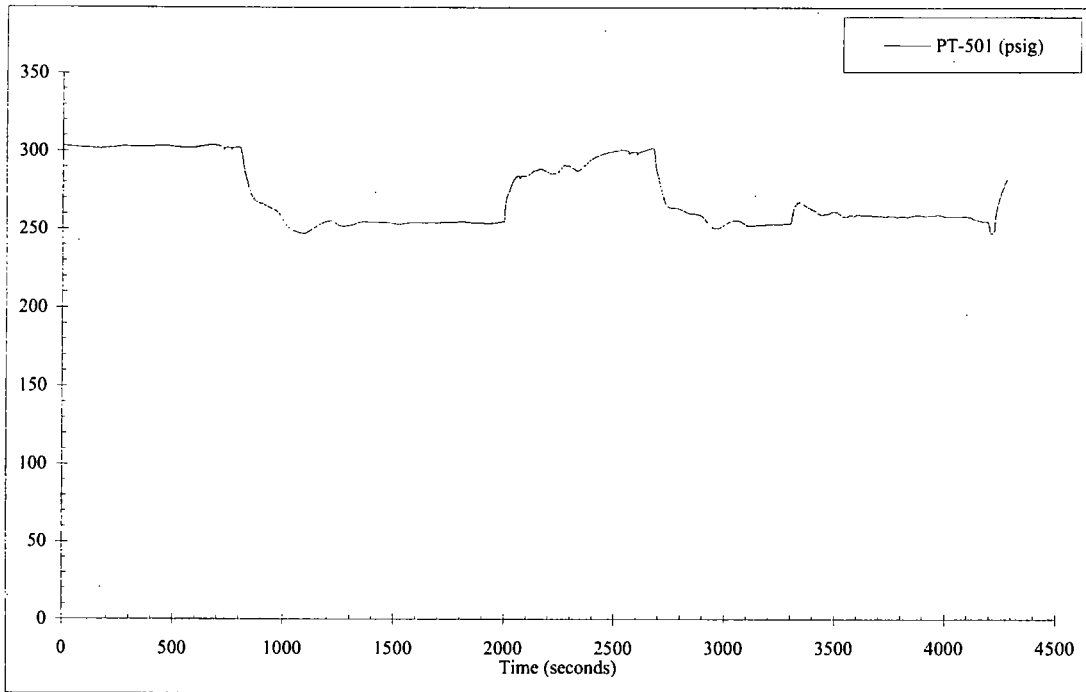
SG-1 Steam Temperature (SC-301)



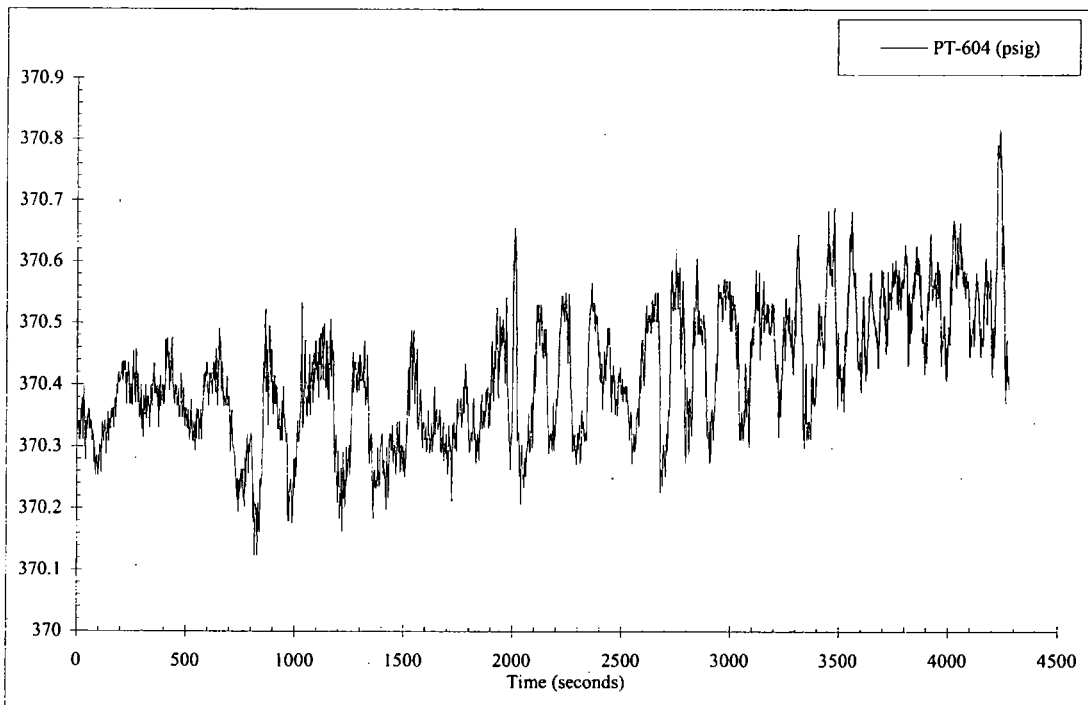
SG-1 Pressure



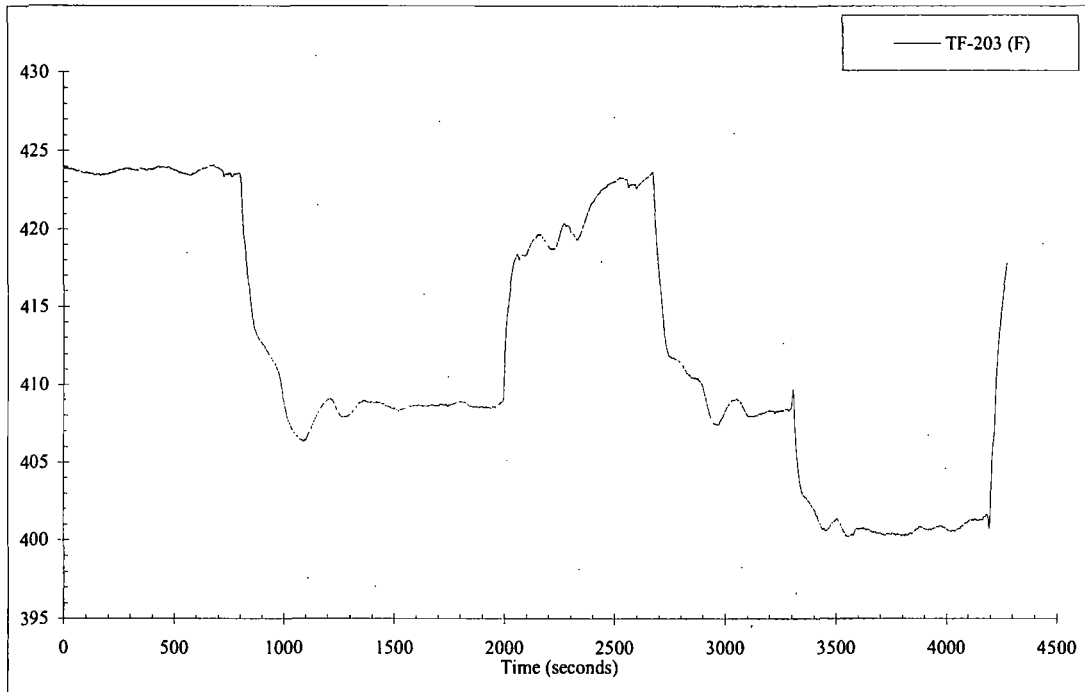
SG-2 Pressure



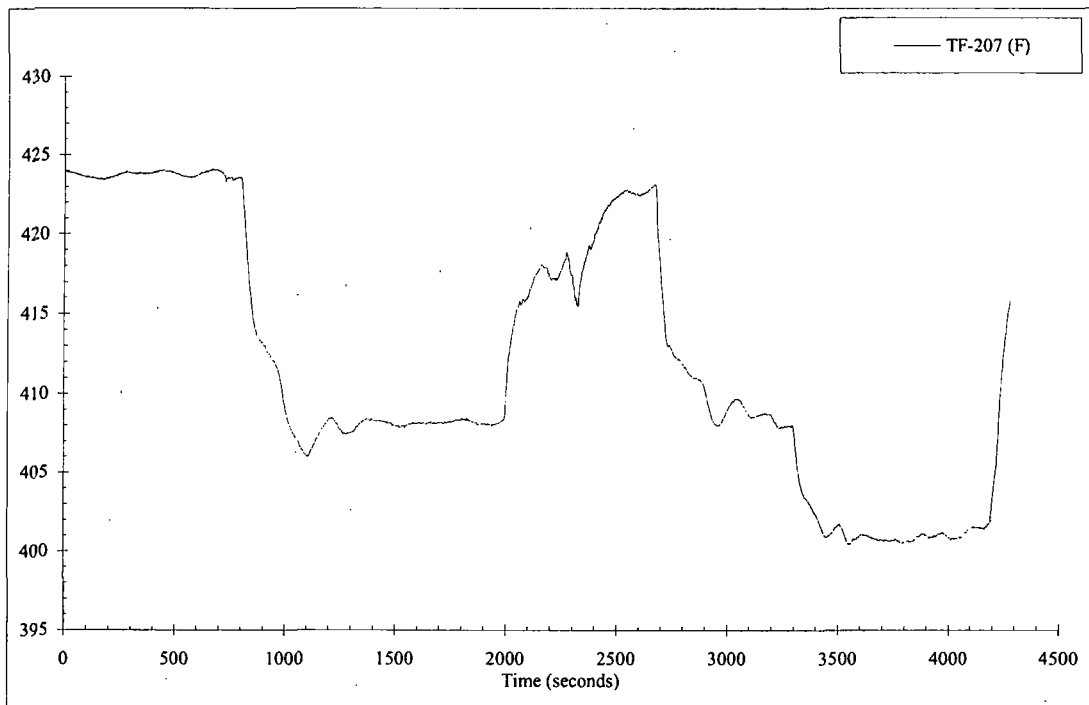
Separator Outlet Steam Pressure



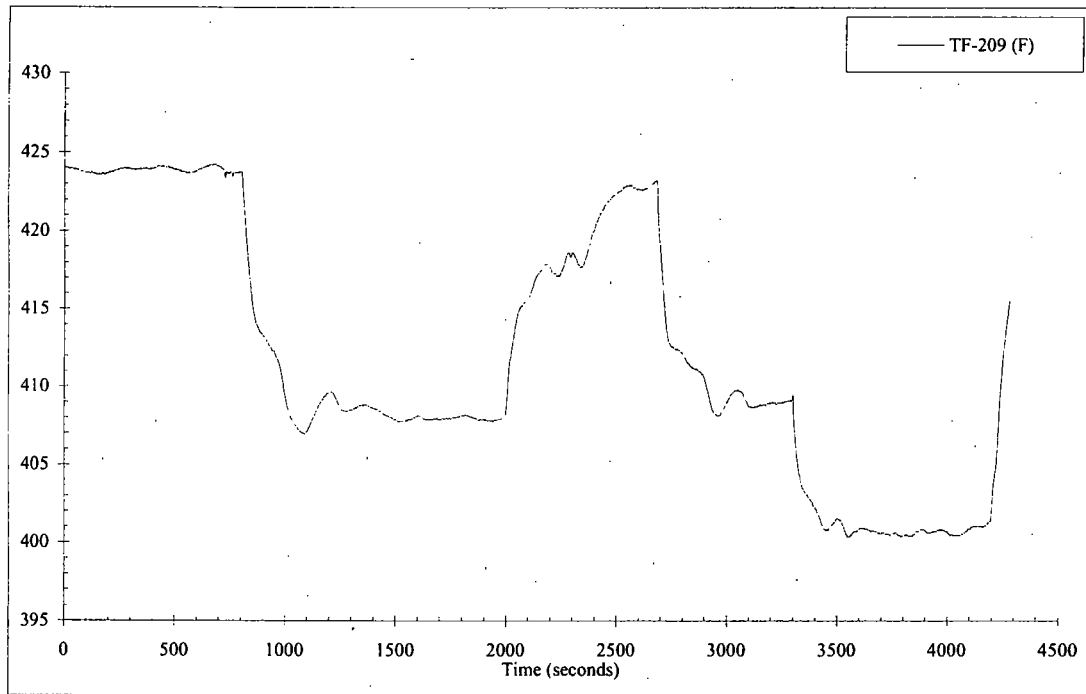
PZR WR Pressure



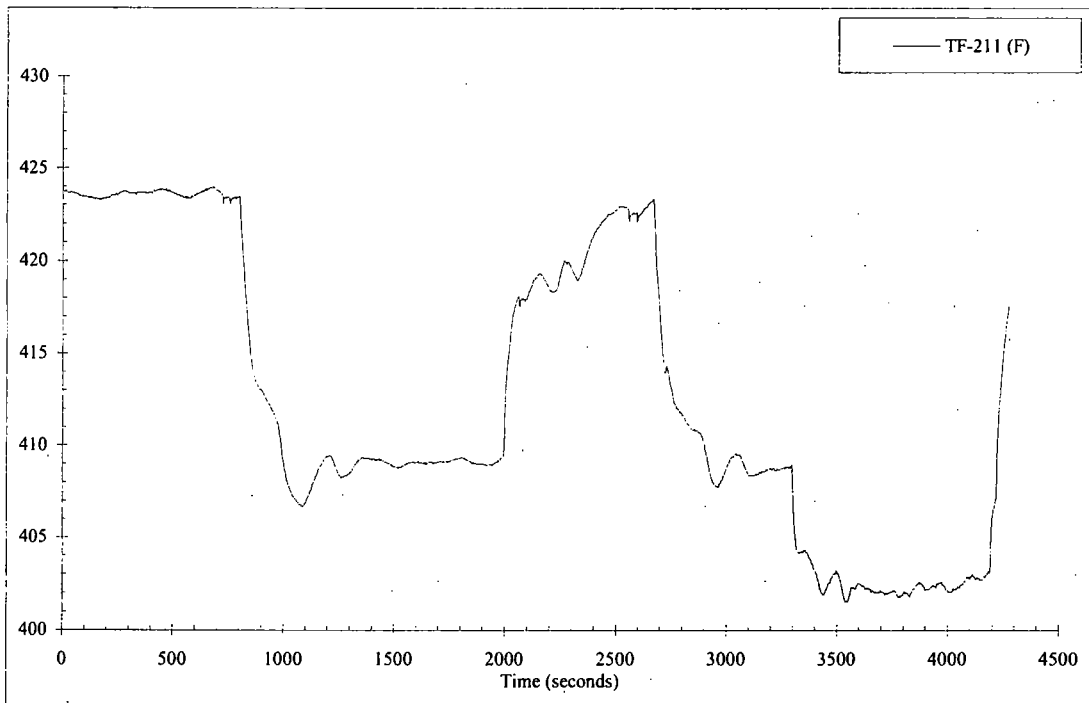
Separator Outlet Steam Temperature



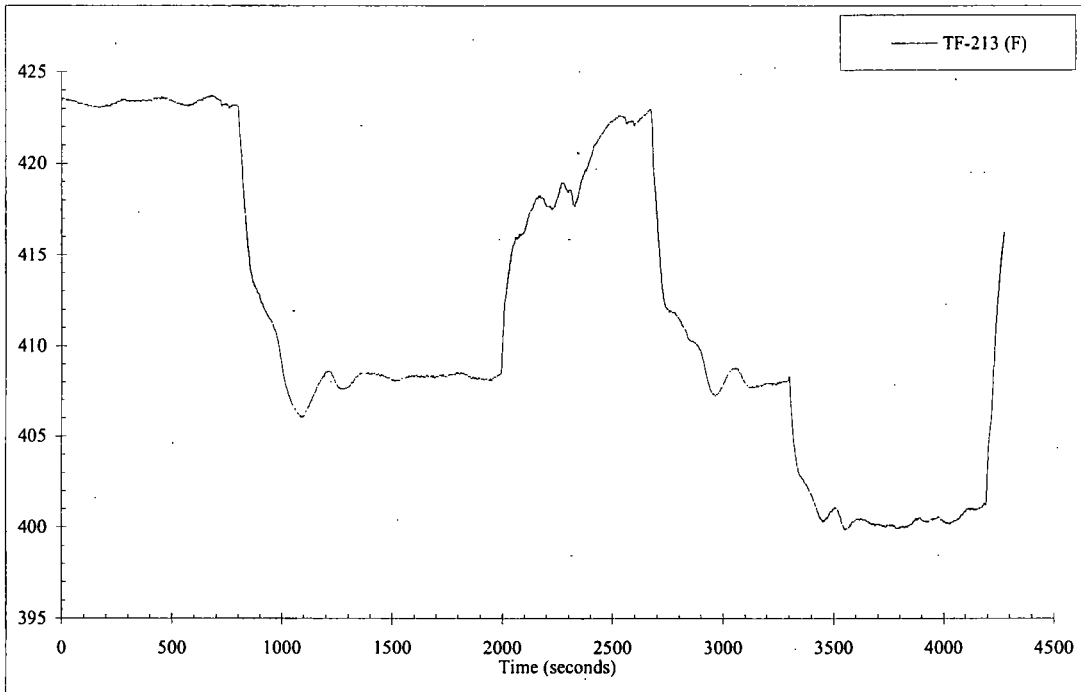
SG-1 Short Tube at Middle Outlet Side Temperature



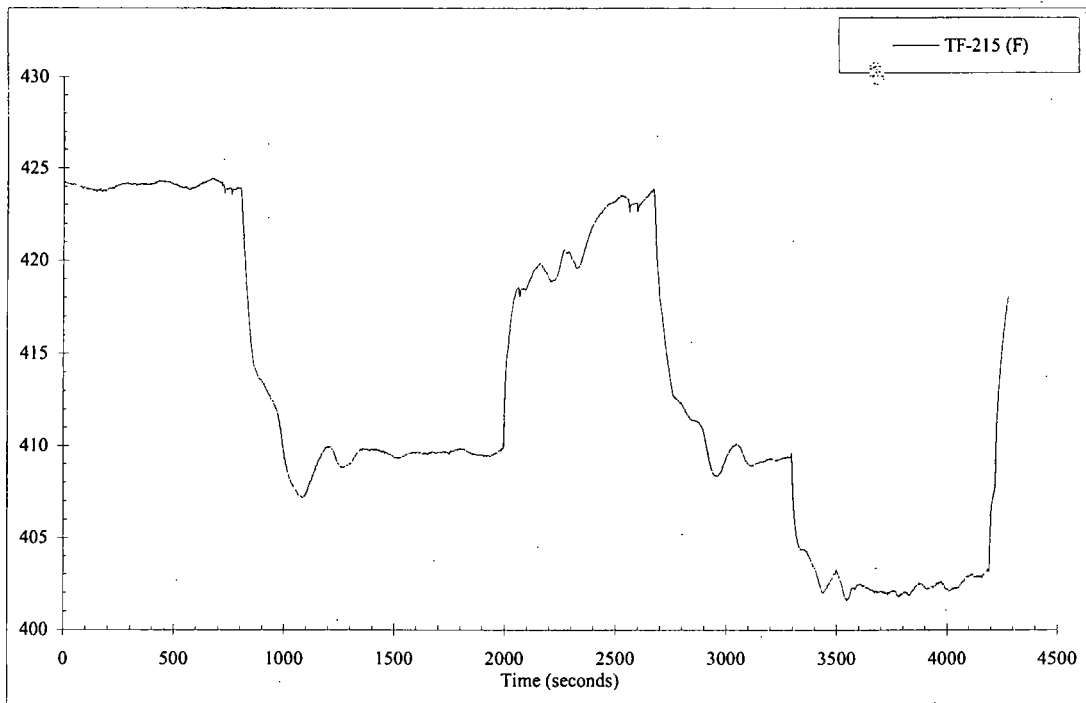
SG-1 Short Tube at Middle Inlet Side Temperature



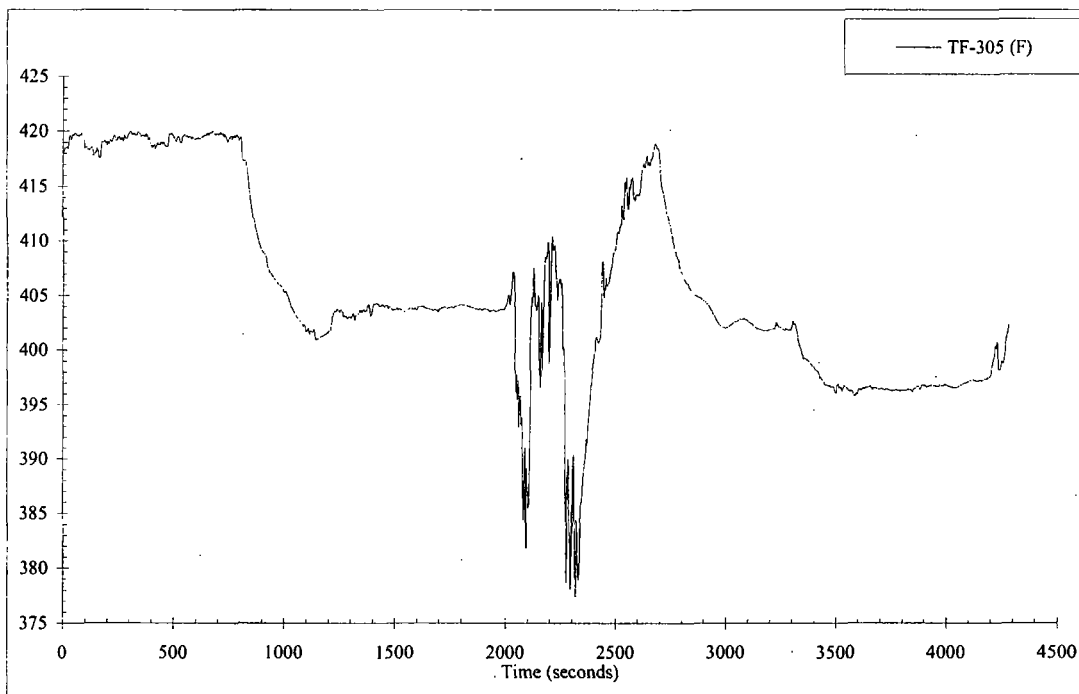
SG-1 Long Tube at Middle Outlet Temperature



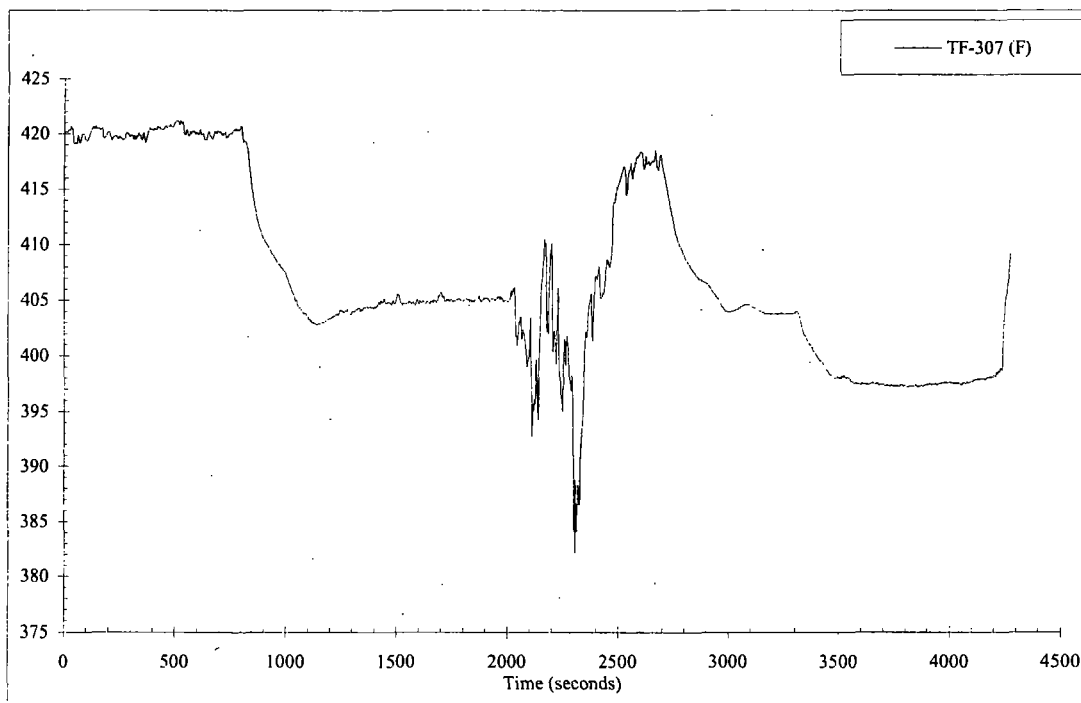
SG-1 Long Tube at Middle Inlet Temperature



SG-1 Short Tube at Top Temperature

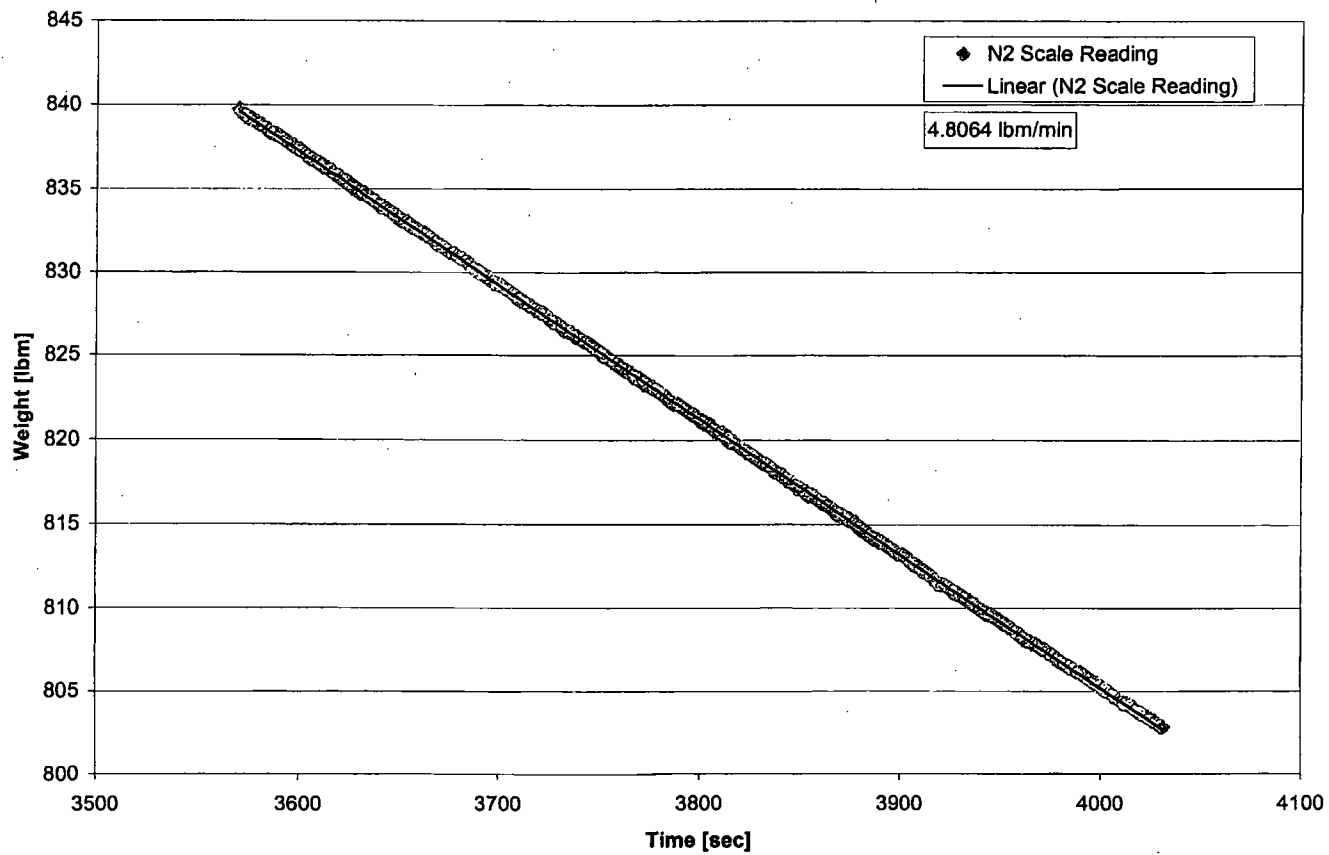


SG-1 Downcomer HL Side Temperature



SG-1 Downcomer CL Side Temperature

NRC-COND-08 Nitrogen Mass Flowrate



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NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:21:23	3263	848.55
13:21:24	3264	848.55
13:21:25	3265	848.55
13:21:26	3266	848.55
13:21:27	3267	848.55
13:21:28	3268	848.55
13:21:29	3269	848.55
13:21:30	3270	848.55
13:21:31	3271	848.55
13:21:33	3273	848.55
13:21:34	3274	848.55
13:21:35	3275	848.55
13:21:36	3276	848.55
13:21:37	3277	848.55
13:21:38	3278	848.55
13:21:39	3279	848.55
13:21:40	3280	848.55
13:21:41	3281	848.55
13:21:42	3282	848.55
13:21:43	3283	848.55
13:21:44	3284	848.55
13:21:45	3285	848.55
13:21:46	3286	848.55
13:21:47	3287	848.55
13:21:48	3288	848.55
13:21:49	3289	848.55
13:21:50	3290	848.55
13:21:51	3291	848.55
13:21:52	3292	848.55
13:21:53	3293	848.55
13:21:54	3294	848.55
13:21:56	3296	848.55
13:21:57	3297	848.55
13:21:58	3298	848.55
13:21:59	3299	848.55
13:22:00	3300	848.55
13:22:01	3301	848.55
13:22:02	3302	848.55
13:22:03	3303	848.55
13:22:04	3304	848.55
13:22:05	3305	848.55
13:22:06	3306	848.55
13:22:07	3307	848.55
13:22:08	3308	848.55
13:22:09	3309	848.55
13:22:10	3310	848.55
13:22:11	3311	848.55
13:22:12	3312	848.55
13:22:13	3313	848.55
13:22:14	3314	848.55
13:22:15	3315	848.55
13:22:16	3316	848.55
13:22:18	3318	848.55
13:22:19	3319	848.55
13:22:20	3320	848.55

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:22:21	3321	848.55
13:22:22	3322	848.60
13:22:23	3323	848.60
13:22:24	3324	848.60
13:22:25	3325	848.60
13:22:26	3326	848.60
13:22:27	3327	848.60
13:22:28	3328	848.60
13:22:29	3329	848.60
13:22:30	3330	848.60
13:22:31	3331	848.60
13:22:32	3332	848.55
13:22:33	3333	848.55
13:22:34	3334	848.55
13:22:35	3335	848.55
13:22:36	3336	848.55
13:22:37	3337	848.55
13:22:38	3338	848.55
13:22:39	3339	848.55
13:22:41	3341	848.55
13:22:42	3342	848.55
13:22:43	3343	848.55
13:22:44	3344	848.55
13:22:45	3345	848.55
13:22:46	3346	848.55
13:22:47	3347	848.55
13:22:48	3348	848.55
13:22:49	3349	848.60
13:22:50	3350	848.60
13:22:51	3351	848.60
13:22:52	3352	848.60
13:22:53	3353	848.60
13:22:54	3354	848.60
13:22:55	3355	848.60
13:22:56	3356	848.60
13:22:57	3357	848.60
13:22:58	3358	848.60
13:22:59	3359	848.60
13:23:00	3360	848.60
13:23:01	3361	848.60
13:23:03	3363	848.55
13:23:04	3364	848.55
13:23:05	3365	848.55
13:23:06	3366	848.55
13:23:07	3367	848.55
13:23:08	3368	848.55
13:23:09	3369	848.55
13:23:10	3370	848.55
13:23:11	3371	848.55
13:23:12	3372	848.60
13:23:13	3373	848.60
13:23:14	3374	848.60
13:23:15	3375	848.60
13:23:16	3376	848.55
13:23:17	3377	848.55

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:23:18	3378	848.55
13:23:19	3379	848.55
13:23:20	3380	848.55
13:23:21	3381	848.55
13:23:22	3382	848.55
13:23:23	3383	848.55
13:23:24	3384	848.55
13:23:26	3386	848.60
13:23:27	3387	848.60
13:23:28	3388	848.60
13:23:29	3389	848.55
13:23:30	3390	848.60
13:23:31	3391	848.55
13:23:32	3392	848.55
13:23:33	3393	848.60
13:23:34	3394	848.55
13:23:35	3395	848.60
13:23:36	3396	848.55
13:23:37	3397	848.55
13:23:38	3398	848.55
13:23:39	3399	848.55
13:23:40	3400	848.55
13:23:41	3401	848.55
13:23:42	3402	848.55
13:23:43	3403	848.55
13:23:44	3404	848.55
13:23:45	3405	848.55
13:23:46	3406	848.60
13:23:48	3408	848.60
13:23:49	3409	848.60
13:23:50	3410	848.60
13:23:51	3411	848.55
13:23:52	3412	848.55
13:23:53	3413	848.55
13:23:54	3414	848.55
13:23:55	3415	848.55
13:23:56	3416	848.55
13:23:57	3417	848.55
13:23:58	3418	848.55
13:23:59	3419	848.55
13:24:00	3420	848.55
13:24:01	3421	848.55
13:24:02	3422	848.55
13:24:03	3423	848.55
13:24:04	3424	848.55
13:24:05	3425	848.55
13:24:06	3426	848.55
13:24:07	3427	848.55
13:24:08	3428	848.55
13:24:10	3430	848.55
13:24:11	3431	848.55
13:24:12	3432	848.55
13:24:13	3433	848.55
13:24:14	3434	848.55
13:24:15	3435	848.55

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:24:16	3436	848.55
13:24:17	3437	848.55
13:24:18	3438	848.55
13:24:19	3439	848.55
13:24:20	3440	848.55
13:24:21	3441	848.60
13:24:22	3442	848.55
13:24:23	3443	848.60
13:24:24	3444	848.60
13:24:25	3445	848.55
13:24:26	3446	848.55
13:24:27	3447	848.55
13:24:28	3448	848.55
13:24:29	3449	848.55
13:24:30	3450	848.55
13:24:31	3451	848.60
13:24:33	3453	849.10
13:24:34	3454	850.40
13:24:35	3455	852.95
13:24:36	3456	854.10
13:24:37	3457	850.60
13:24:38	3458	851.70
13:24:39	3459	850.95
13:24:40	3460	849.95
13:24:41	3461	848.40
13:24:42	3462	848.35
13:24:43	3463	848.30
13:24:44	3464	848.25
13:24:45	3465	848.05
13:24:46	3466	848.00
13:24:47	3467	847.95
13:24:48	3468	847.90
13:24:49	3469	847.85
13:24:50	3470	847.60
13:24:51	3471	847.55
13:24:52	3472	847.55
13:24:53	3473	847.50
13:24:54	3474	847.30
13:24:56	3476	847.25
13:24:57	3477	847.20
13:24:58	3478	847.15
13:24:59	3479	847.05
13:25:00	3480	847.00
13:25:01	3481	846.90
13:25:02	3482	846.80
13:25:03	3483	846.70
13:25:04	3484	846.65
13:25:05	3485	846.45
13:25:06	3486	846.35
13:25:07	3487	846.30
13:25:08	3488	846.25
13:25:09	3489	846.20
13:25:10	3490	846.10
13:25:11	3491	846.05
13:25:12	3492	845.95

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:25:13	3493	845.85
13:25:14	3494	845.80
13:25:15	3495	845.70
13:25:16	3496	845.50
13:25:18	3498	845.45
13:25:19	3499	845.40
13:25:20	3500	845.35
13:25:21	3501	845.25
13:25:22	3502	845.05
13:25:23	3503	845.05
13:25:24	3504	845.00
13:25:25	3505	844.90
13:25:26	3506	844.85
13:25:27	3507	844.75
13:25:28	3508	844.65
13:25:29	3509	844.60
13:25:30	3510	844.50
13:25:31	3511	844.40
13:25:32	3512	844.30
13:25:33	3513	844.25
13:25:34	3514	844.15
13:25:35	3515	844.10
13:25:36	3516	844.00
13:25:37	3517	843.90
13:25:38	3518	843.75
13:25:40	3520	843.70
13:25:41	3521	843.65
13:25:42	3522	843.60
13:25:43	3523	843.50
13:25:44	3524	843.40
13:25:45	3525	843.35
13:25:46	3526	843.25
13:25:47	3527	843.20
13:25:48	3528	843.10
13:25:49	3529	842.90
13:25:50	3530	842.85
13:25:51	3531	842.80
13:25:52	3532	842.75
13:25:53	3533	842.65
13:25:54	3534	842.60
13:25:55	3535	842.50
13:25:56	3536	842.45
13:25:57	3537	842.35
13:25:58	3538	842.25
13:25:59	3539	842.05
13:26:00	3540	842.00
13:26:02	3542	842.00
13:26:03	3543	841.90
13:26:04	3544	841.80
13:26:05	3545	841.60
13:26:06	3546	841.55
13:26:07	3547	841.50
13:26:08	3548	841.45
13:26:09	3549	841.40
13:26:10	3550	841.30

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:26:11	3551	841.25
13:26:12	3552	841.15
13:26:13	3553	840.95
13:26:14	3554	840.90
13:26:15	3555	840.85
13:26:16	3556	840.80
13:26:17	3557	840.75
13:26:18	3558	840.65
13:26:19	3559	840.55
13:26:20	3560	840.45
13:26:21	3561	840.40
13:26:22	3562	840.20
13:26:23	3563	840.15
13:26:25	3565	840.10
13:26:26	3566	839.90
13:26:27	3567	839.85
13:26:28	3568	839.80
13:26:29	3569	839.75
13:26:30	3570	839.70
13:26:31	3571	839.60
13:26:32	3572	839.50
13:26:33	3573	839.30
13:26:34	3574	839.25
13:26:35	3575	839.20
13:26:36	3576	839.15
13:26:37	3577	839.10
13:26:38	3578	839.00
13:26:39	3579	838.95
13:26:40	3580	838.85
13:26:41	3581	838.80
13:26:42	3582	838.70
13:26:43	3583	838.60
13:26:44	3584	838.55
13:26:45	3585	838.35
13:26:47	3587	838.30
13:26:48	3588	838.25
13:26:49	3589	838.20
13:26:50	3590	838.10
13:26:51	3591	838.05
13:26:52	3592	837.95
13:26:53	3593	837.85
13:26:54	3594	837.80
13:26:55	3595	837.70
13:26:56	3596	837.60
13:26:57	3597	837.55
13:26:58	3598	837.45
13:26:59	3599	837.35
13:27:00	3600	837.30
13:27:01	3601	837.20
13:27:02	3602	837.15
13:27:03	3603	837.05
13:27:04	3604	836.85
13:27:05	3605	836.80
13:27:06	3606	836.75
13:27:07	3607	836.70

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:27:08	3608	836.60
13:27:10	3610	836.55
13:27:11	3611	836.30
13:27:12	3612	836.30
13:27:13	3613	836.25
13:27:14	3614	836.20
13:27:15	3615	836.10
13:27:16	3616	836.05
13:27:17	3617	835.85
13:27:18	3618	835.80
13:27:19	3619	835.75
13:27:20	3620	835.70
13:27:21	3621	835.50
13:27:22	3622	835.45
13:27:23	3623	835.45
13:27:24	3624	835.35
13:27:25	3625	835.30
13:27:26	3626	835.05
13:27:27	3627	835.00
13:27:28	3628	834.95
13:27:29	3629	834.95
13:27:30	3630	834.75
13:27:32	3632	834.70
13:27:33	3633	834.65
13:27:34	3634	834.55
13:27:35	3635	834.45
13:27:36	3636	834.40
13:27:37	3637	834.30
13:27:38	3638	834.25
13:27:39	3639	834.15
13:27:40	3640	833.95
13:27:41	3641	833.95
13:27:42	3642	833.90
13:27:43	3643	833.80
13:27:44	3644	833.75
13:27:45	3645	833.65
13:27:46	3646	833.55
13:27:47	3647	833.50
13:27:48	3648	833.40
13:27:49	3649	833.35
13:27:50	3650	833.10
13:27:51	3651	833.10
13:27:52	3652	833.05
13:27:54	3654	833.00
13:27:55	3655	832.75
13:27:56	3656	832.70
13:27:57	3657	832.65
13:27:58	3658	832.60
13:27:59	3659	832.55
13:28:00	3660	832.45
13:28:01	3661	832.35
13:28:02	3662	832.30
13:28:03	3663	832.20
13:28:04	3664	832.15
13:28:05	3665	832.05

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:28:06	3666	832.00
13:28:07	3667	831.90
13:28:08	3668	831.70
13:28:09	3669	831.65
13:28:10	3670	831.60
13:28:11	3671	831.55
13:28:12	3672	831.45
13:28:13	3673	831.40
13:28:14	3674	831.30
13:28:15	3675	831.20
13:28:17	3677	831.10
13:28:18	3678	831.05
13:28:19	3679	830.95
13:28:20	3680	830.85
13:28:21	3681	830.80
13:28:22	3682	830.70
13:28:23	3683	830.60
13:28:24	3684	830.55
13:28:25	3685	830.45
13:28:26	3686	830.35
13:28:27	3687	830.15
13:28:28	3688	830.10
13:28:29	3689	830.05
13:28:30	3690	830.05
13:28:31	3691	829.95
13:28:32	3692	829.85
13:28:33	3693	829.80
13:28:34	3694	829.70
13:28:35	3695	829.65
13:28:36	3696	829.55
13:28:37	3697	829.35
13:28:39	3699	829.30
13:28:40	3700	829.25
13:28:41	3701	829.20
13:28:42	3702	829.10
13:28:43	3703	829.05
13:28:44	3704	828.95
13:28:45	3705	828.85
13:28:46	3706	828.80
13:28:47	3707	828.70
13:28:48	3708	828.60
13:28:49	3709	828.55
13:28:50	3710	828.30
13:28:51	3711	828.30
13:28:52	3712	828.25
13:28:53	3713	828.20
13:28:54	3714	828.10
13:28:55	3715	828.00
13:28:56	3716	827.95
13:28:57	3717	827.85
13:28:58	3718	827.75
13:28:59	3719	827.70
13:29:00	3720	827.60
13:29:02	3722	827.55
13:29:03	3723	827.45

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:29:04	3724	827.35
13:29:05	3725	827.25
13:29:06	3726	827.05
13:29:07	3727	827.00
13:29:08	3728	827.00
13:29:09	3729	826.95
13:29:10	3730	826.85
13:29:11	3731	826.75
13:29:12	3732	826.55
13:29:13	3733	826.50
13:29:14	3734	826.45
13:29:15	3735	826.40
13:29:16	3736	826.35
13:29:17	3737	826.25
13:29:18	3738	826.15
13:29:19	3739	826.10
13:29:20	3740	826.00
13:29:21	3741	825.90
13:29:22	3742	825.85
13:29:24	3744	825.75
13:29:25	3745	825.65
13:29:26	3746	825.60
13:29:27	3747	825.50
13:29:28	3748	825.40
13:29:29	3749	825.35
13:29:30	3750	825.25
13:29:31	3751	825.05
13:29:32	3752	825.00
13:29:33	3753	824.95
13:29:34	3754	824.90
13:29:35	3755	824.80
13:29:36	3756	824.65
13:29:37	3757	824.60
13:29:38	3758	824.55
13:29:39	3759	824.45
13:29:40	3760	824.40
13:29:41	3761	824.20
13:29:42	3762	824.15
13:29:43	3763	824.10
13:29:44	3764	824.05
13:29:46	3766	823.95
13:29:47	3767	823.70
13:29:48	3768	823.70
13:29:49	3769	823.65
13:29:50	3770	823.60
13:29:51	3771	823.55
13:29:52	3772	823.30
13:29:53	3773	823.30
13:29:54	3774	823.25
13:29:55	3775	823.20
13:29:56	3776	823.10
13:29:57	3777	823.05
13:29:58	3778	822.95
13:29:59	3779	822.90
13:30:00	3780	822.80

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:30:01	3781	822.70
13:30:02	3782	822.60
13:30:03	3783	822.55
13:30:04	3784	822.45
13:30:05	3785	822.25
13:30:06	3786	822.20
13:30:07	3787	822.15
13:30:09	3789	822.10
13:30:10	3790	822.00
13:30:11	3791	821.90
13:30:12	3792	821.85
13:30:13	3793	821.75
13:30:14	3794	821.65
13:30:15	3795	821.60
13:30:16	3796	821.50
13:30:17	3797	821.45
13:30:18	3798	821.35
13:30:19	3799	821.25
13:30:20	3800	821.15
13:30:21	3801	821.10
13:30:22	3802	821.00
13:30:23	3803	820.95
13:30:24	3804	820.90
13:30:25	3805	820.85
13:30:26	3806	820.75
13:30:27	3807	820.55
13:30:28	3808	820.50
13:30:29	3809	820.45
13:30:31	3811	820.40
13:30:32	3812	820.35
13:30:33	3813	820.25
13:30:34	3814	819.95
13:30:35	3815	819.90
13:30:36	3816	819.85
13:30:37	3817	819.85
13:30:38	3818	819.75
13:30:39	3819	819.65
13:30:40	3820	819.55
13:30:41	3821	819.50
13:30:42	3822	819.40
13:30:43	3823	819.30
13:30:44	3824	819.25
13:30:45	3825	819.15
13:30:46	3826	819.05
13:30:47	3827	819.00
13:30:48	3828	818.90
13:30:49	3829	818.80
13:30:50	3830	818.75
13:30:51	3831	818.65
13:30:53	3833	818.55
13:30:54	3834	818.45
13:30:55	3835	818.40
13:30:56	3836	818.20
13:30:57	3837	818.15
13:30:58	3838	818.10

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:30:59	3839	818.05
13:31:00	3840	817.95
13:31:01	3841	817.90
13:31:02	3842	817.80
13:31:03	3843	817.60
13:31:04	3844	817.55
13:31:05	3845	817.50
13:31:06	3846	817.45
13:31:07	3847	817.35
13:31:08	3848	817.15
13:31:09	3849	817.15
13:31:10	3850	817.10
13:31:11	3851	817.05
13:31:12	3852	817.00
13:31:13	3853	816.90
13:31:14	3854	816.65
13:31:16	3856	816.65
13:31:17	3857	816.60
13:31:18	3858	816.55
13:31:19	3859	816.45
13:31:20	3860	816.30
13:31:21	3861	816.25
13:31:22	3862	816.20
13:31:23	3863	816.15
13:31:24	3864	816.05
13:31:25	3865	816.00
13:31:26	3866	815.90
13:31:27	3867	815.80
13:31:28	3868	815.60
13:31:29	3869	815.60
13:31:30	3870	815.55
13:31:31	3871	815.50
13:31:32	3872	815.45
13:31:33	3873	815.35
13:31:34	3874	815.30
13:31:35	3875	815.25
13:31:36	3876	815.15
13:31:38	3878	815.05
13:31:39	3879	814.95
13:31:40	3880	814.70
13:31:41	3881	814.65
13:31:42	3882	814.60
13:31:43	3883	814.55
13:31:44	3884	814.45
13:31:45	3885	814.25
13:31:46	3886	814.20
13:31:47	3887	814.15
13:31:48	3888	814.10
13:31:49	3889	814.05
13:31:50	3890	813.95
13:31:51	3891	813.90
13:31:52	3892	813.85
13:31:53	3893	813.75
13:31:54	3894	813.70
13:31:55	3895	813.60

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:31:56	3896	813.50
13:31:57	3897	813.40
13:31:58	3898	813.35
13:31:59	3899	813.25
13:32:01	3901	813.20
13:32:02	3902	813.10
13:32:03	3903	813.00
13:32:04	3904	812.95
13:32:05	3905	812.85
13:32:06	3906	812.65
13:32:07	3907	812.60
13:32:08	3908	812.55
13:32:09	3909	812.50
13:32:10	3910	812.40
13:32:11	3911	812.25
13:32:12	3912	812.20
13:32:13	3913	812.15
13:32:14	3914	812.05
13:32:15	3915	812.00
13:32:16	3916	811.90
13:32:17	3917	811.80
13:32:18	3918	811.60
13:32:19	3919	811.45
13:32:20	3920	811.40
13:32:21	3921	811.40
13:32:23	3923	811.35
13:32:24	3924	811.25
13:32:25	3925	811.20
13:32:26	3926	811.10
13:32:27	3927	810.90
13:32:28	3928	810.90
13:32:29	3929	810.85
13:32:30	3930	810.80
13:32:31	3931	810.70
13:32:32	3932	810.65
13:32:33	3933	810.55
13:32:34	3934	810.45
13:32:35	3935	810.40
13:32:36	3936	810.30
13:32:37	3937	810.20
13:32:38	3938	810.15
13:32:39	3939	810.05
13:32:40	3940	809.95
13:32:41	3941	809.85
13:32:42	3942	809.80
13:32:43	3943	809.70
13:32:44	3944	809.65
13:32:46	3946	809.55
13:32:47	3947	809.45
13:32:48	3948	809.40
13:32:49	3949	809.30
13:32:50	3950	809.25
13:32:51	3951	809.15
13:32:52	3952	809.05
13:32:53	3953	809.00

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:32:54	3954	808.90
13:32:55	3955	808.80
13:32:56	3956	808.75
13:32:57	3957	808.65
13:32:58	3958	808.50
13:32:59	3959	808.45
13:33:00	3960	808.40
13:33:01	3961	808.30
13:33:02	3962	808.10
13:33:03	3963	808.05
13:33:04	3964	808.00
13:33:05	3965	807.95
13:33:06	3966	807.85
13:33:08	3968	807.80
13:33:09	3969	807.70
13:33:10	3970	807.65
13:33:11	3971	807.55
13:33:12	3972	807.50
13:33:13	3973	807.40
13:33:14	3974	807.30
13:33:15	3975	807.25
13:33:16	3976	807.15
13:33:17	3977	807.05
13:33:18	3978	807.00
13:33:19	3979	806.80
13:33:20	3980	806.75
13:33:21	3981	806.70
13:33:22	3982	806.65
13:33:23	3983	806.55
13:33:24	3984	806.50
13:33:25	3985	806.40
13:33:26	3986	806.35
13:33:27	3987	806.25
13:33:28	3988	806.20
13:33:30	3990	806.10
13:33:31	3991	806.00
13:33:32	3992	805.90
13:33:33	3993	805.85
13:33:34	3994	805.75
13:33:35	3995	805.65
13:33:36	3996	805.60
13:33:37	3997	805.50
13:33:38	3998	805.45
13:33:39	3999	805.35
13:33:40	4000	805.25
13:33:41	4001	805.20
13:33:42	4002	805.05
13:33:43	4003	805.00
13:33:44	4004	804.95
13:33:45	4005	804.85
13:33:46	4006	804.70
13:33:47	4007	804.65
13:33:48	4008	804.60
13:33:49	4009	804.55
13:33:50	4010	804.45

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:33:51	4011	804.25
13:33:53	4013	804.20
13:33:54	4014	804.20
13:33:55	4015	804.10
13:33:56	4016	804.05
13:33:57	4017	803.95
13:33:58	4018	803.75
13:33:59	4019	803.70
13:34:00	4020	803.65
13:34:01	4021	803.60
13:34:02	4022	803.55
13:34:03	4023	803.45
13:34:04	4024	803.40
13:34:05	4025	803.30
13:34:06	4026	803.20
13:34:07	4027	803.15
13:34:08	4028	803.05
13:34:09	4029	802.95
13:34:10	4030	802.85
13:34:11	4031	802.80
13:34:12	4032	802.75
13:34:13	4033	802.65
13:34:15	4035	802.60
13:34:16	4036	802.50
13:34:17	4037	802.40
13:34:18	4038	802.35
13:34:19	4039	802.25
13:34:20	4040	802.20
13:34:21	4041	802.10
13:34:22	4042	802.00
13:34:23	4043	801.95
13:34:24	4044	801.85
13:34:25	4045	801.80
13:34:26	4046	801.70
13:34:27	4047	801.60
13:34:28	4048	801.55
13:34:29	4049	801.45
13:34:30	4050	801.35
13:34:31	4051	801.25
13:34:32	4052	801.20
13:34:33	4053	801.10
13:34:34	4054	801.05
13:34:35	4055	800.95
13:34:36	4056	800.90
13:34:38	4058	800.80
13:34:39	4059	800.75
13:34:40	4060	800.65
13:34:41	4061	800.55
13:34:42	4062	800.50
13:34:43	4063	800.40
13:34:44	4064	800.30
13:34:45	4065	800.25
13:34:46	4066	800.15
13:34:47	4067	800.05
13:34:48	4068	800.00

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:34:49	4069	799.90
13:34:50	4070	799.85
13:34:51	4071	799.75
13:34:52	4072	799.70
13:34:53	4073	799.60
13:34:54	4074	799.55
13:34:55	4075	799.45
13:34:56	4076	799.35
13:34:57	4077	799.30
13:34:58	4078	799.20
13:35:00	4080	799.15
13:35:01	4081	799.05
13:35:02	4082	799.00
13:35:03	4083	798.80
13:35:04	4084	798.75
13:35:05	4085	798.70
13:35:06	4086	798.70
13:35:07	4087	798.50
13:35:08	4088	798.45
13:35:09	4089	798.40
13:35:10	4090	798.40
13:35:11	4091	798.30
13:35:12	4092	798.25
13:35:13	4093	798.15
13:35:14	4094	798.10
13:35:15	4095	798.00
13:35:16	4096	797.95
13:35:17	4097	797.85
13:35:18	4098	797.75
13:35:19	4099	797.70
13:35:20	4100	797.65
13:35:22	4102	797.55
13:35:23	4103	797.50
13:35:24	4104	797.40
13:35:25	4105	797.35
13:35:26	4106	797.25
13:35:27	4107	797.20
13:35:28	4108	797.10
13:35:29	4109	797.05
13:35:30	4110	796.95
13:35:31	4111	796.90
13:35:32	4112	796.80
13:35:33	4113	796.75
13:35:34	4114	796.65
13:35:35	4115	796.60
13:35:36	4116	796.50
13:35:37	4117	796.45
13:35:38	4118	796.35
13:35:39	4119	796.30
13:35:40	4120	796.25
13:35:41	4121	796.20
13:35:42	4122	796.10
13:35:43	4123	796.05
13:35:45	4125	795.95
13:35:46	4126	795.90

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:35:47	4127	795.85
13:35:48	4128	795.75
13:35:49	4129	795.70
13:35:50	4130	795.65
13:35:51	4131	795.55
13:35:52	4132	795.50
13:35:53	4133	795.40
13:35:54	4134	795.35
13:35:55	4135	795.25
13:35:56	4136	795.20
13:35:57	4137	795.10
13:35:58	4138	795.05
13:35:59	4139	794.95
13:36:00	4140	794.90
13:36:01	4141	794.85
13:36:02	4142	794.80
13:36:03	4143	794.70
13:36:04	4144	794.65
13:36:05	4145	794.60
13:36:07	4147	794.50
13:36:08	4148	794.45
13:36:09	4149	794.40
13:36:10	4150	794.30
13:36:11	4151	794.25
13:36:12	4152	794.20
13:36:13	4153	794.15
13:36:14	4154	794.05
13:36:15	4155	794.00
13:36:16	4156	793.90
13:36:17	4157	793.80
13:36:18	4158	793.75
13:36:19	4159	793.70
13:36:20	4160	793.60
13:36:21	4161	793.55
13:36:22	4162	793.50
13:36:23	4163	793.45
13:36:24	4164	793.25
13:36:25	4165	793.20
13:36:26	4166	793.20
13:36:27	4167	793.15
13:36:28	4168	793.10
13:36:30	4170	793.05
13:36:31	4171	793.00
13:36:32	4172	792.90
13:36:33	4173	792.85
13:36:34	4174	792.80
13:36:35	4175	792.75
13:36:36	4176	792.65
13:36:37	4177	792.60
13:36:38	4178	792.55
13:36:39	4179	792.45
13:36:40	4180	792.40
13:36:41	4181	792.35
13:36:42	4182	792.30
13:36:43	4183	792.25

NRC-COND-08

Nitrogen Weight Data

Timestamp	Interval (sec)	Mass (lbm)
13:36:44	4184	792.15
13:36:45	4185	792.10
13:36:46	4186	792.05
13:36:47	4187	792.00
13:36:48	4188	791.95
13:36:49	4189	791.95
13:36:50	4190	791.95
13:36:52	4192	791.95
13:36:53	4193	791.95
13:36:54	4194	792.00
13:36:55	4195	792.00
13:36:56	4196	792.00
13:36:57	4197	792.00
13:36:58	4198	792.00
13:36:59	4199	792.00
13:37:00	4200	791.95
13:37:01	4201	791.95
13:37:02	4202	791.95
13:37:03	4203	791.95
13:37:04	4204	791.95
13:37:05	4205	791.95
13:37:06	4206	791.95
13:37:07	4207	792.00
13:37:08	4208	792.00
13:37:09	4209	792.00
13:37:10	4210	792.00
13:37:11	4211	792.00
13:37:12	4212	792.00
13:37:13	4213	792.00
13:37:15	4215	792.00
13:37:16	4216	792.00
13:37:17	4217	792.00
13:37:18	4218	792.00
13:37:19	4219	791.95
13:37:20	4220	791.95
13:37:21	4221	791.95
13:37:22	4222	791.95
13:37:23	4223	791.95
13:37:24	4224	791.95
13:37:25	4225	791.95
13:37:26	4226	791.95
13:37:27	4227	791.95
13:37:28	4228	791.95
13:37:29	4229	791.95
13:37:30	4230	791.95
13:37:31	4231	791.95
13:37:32	4232	791.95
13:37:33	4233	791.95

NRC-COND-08: Steam Generator U-Tube Condensation Test @ 300 psig w/ 10% Nitrogen
 Oregon State University
 Start time = 05/17/2007 12:27:00
 End time = 05/17/2007 13:38:18
 File created on 05/17/2007 13:54:20

Timestamp	Interval (sec)	Tagname	Description	Area	Value
5/17/2007 12:16.01	-658	dDASLogging	DSCEngine historical logging	Status	Logging
5/17/2007 12:25.00	-119	TEST_SW	Facility Test Switch	Switches	In Test
5/17/2007 12:40.18	798	M001_HS_O	SG-1 Strm Stop HS	Switches	Open
5/17/2007 12:40.18	798	M001_STAT	SG-1 Steam Stop	Valves	Open
5/17/2007 12:44.49	1069	MF_001	FST Fill Valve	Valves	Open
5/17/2007 12:51.30	1470	MF_001	FST Fill Valve	Valves	Closed
5/17/2007 12:58.54	1914	MF_001	FST Fill Valve	Valves	Open
5/17/2007 13:00.10	1990	M001_HS_O	SG-1 Strm Stop HS	Switches	Close
5/17/2007 13:00.10	1990	M001_STAT	SG-1 Steam Stop	Valves	Closed
5/17/2007 13:06.23	2363	MF_001	FST Fill Valve	Valves	Closed
5/17/2007 13:11.51	2691	M001_HS_O	SG-1 Strm Stop HS	Switches	Open
5/17/2007 13:11.51	2691	M001_STAT	SG-1 Steam Stop	Valves	Open
5/17/2007 13:19.22	3142	MF_001	FST Fill Valve	Valves	Open
5/17/2007 13:25.23	3503	MF_001	FST Fill Valve	Valves	Closed
5/17/2007 13:33.31	3991	MF_001	FST Fill Valve	Valves	Open
5/17/2007 13:37.21	4221	M001_HS_O	SG-1 Strm Stop HS	Switches	Close
5/17/2007 13:37.21	4221	M001_STAT	SG-1 Steam Stop	Valves	Closed

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
DP-111	DP across Upper Core Plate	4.9931	0.9963	30	-30	Differential Pressure (in h2o)
DP-114	DP across Upper Support Plate	4.9796	0.9934	375	-375	Differential Pressure (in h2o)
DP-121	DVI-1/CL-1 Differential Pressure	4.9563	0.989	25	-25	Differential Pressure (in h2o)
DP-122	DVI-2/CL-2 Differential Pressure	4.9591	0.9931	25	-25	Differential Pressure (in h2o)
DP-123	DVI-1/CL-3 Differential Pressure	4.9743	0.9957	25	-25	Differential Pressure (in h2o)
DP-124	DVI-2/CL-4 Differential Pressure	4.9561	0.9924	25	-25	Differential Pressure (in h2o)
DP-125	HL-1 entrance losses	4.97	0.9951	30	0	Differential Pressure (in h2o)
DP-126	HL-2 entrance losses	4.9707	0.9949	30	0	Differential Pressure (in h2o)
DP-128	DVI-1 entrance losses	4.9709	0.9959	25	-25	Differential Pressure (in h2o)
DP-129	DVI-2 entrance losses	4.9736	0.9958	25	-25	Differential Pressure (in h2o)
DP-130	Upper Head Differential Pressure	4.9622	0.9941	50	-50	Differential Pressure (in h2o)
DP-201	CL-1 Differential Pressure	4.9689	0.9939	25	-25	Differential Pressure (in h2o)
DP-202	RCP-2 Differential Pressure	4.9588	0.9916	200	0	Differential Pressure (in h2o)
DP-203	RCP-1 Differential Pressure	4.9692	0.9946	27	0	Differential Pressure (psid)
DP-204	CL-2 Differential Pressure	4.9814	0.9969	25	-25	Differential Pressure (in h2o)
DP-205	RCP-3 Differential Pressure	4.978	0.995	200	0	Differential Pressure (in h2o)
DP-206	RCP-4 Differential Pressure	4.984	0.9959	200	0	Differential Pressure (in h2o)
DP-207	CL-3 Differential Pressure	4.9817	0.9967	25	-25	Differential Pressure (in h2o)
DP-208	CL-4 Differential Pressure	4.9905	0.9984	25	-25	Differential Pressure (in h2o)
DP-209	HL-1 Differential Pressure	4.9858	0.998	25	-25	Differential Pressure (in h2o)
DP-210	HL-2 Differential Pressure	4.9649	0.9933	25	-25	Differential Pressure (in h2o)
DP-211	SG-1 Short Tube Entrance Losses	4.9849	0.9979	25	0	Differential Pressure (in h2o)
DP-212	SG-2 Long Tube Exit Losses	4.9838	0.9979	25	0	Differential Pressure (in h2o)
DP-213	SG-1 Long Tube Exit Losses	4.9788	0.9965	15	-15	Differential Pressure (in h2o)
DP-214	SG-2 Long Tube Entrance Losses	4.981	0.9973	15	0	Differential Pressure (in h2o)
DP-215	Break Differential Pressure	4.9807	0.9981	500	0	Differential Pressure (psid)
DP-216	Break Differential Pressure	4.9729	0.9964	500	0	Differential Pressure (psid)
DP-217	HL-1 to CL1 Differential Pressure at SG1	4.9835	0.9981	46.83	0	Differential Pressure (in h2o)
DP-218	HL-2 to CL2 Differential Pressure at SG2	4.9889	0.9992	150	0	Differential Pressure (in h2o)
DP-219	HL-1 to CL3 Differential Pressure at SG1	4.9686	0.9949	30.95	0	Differential Pressure (in h2o)
DP-220	HL-2 to CL4 Differential Pressure at SG2	4.9627	0.9936	150	0	Differential Pressure (in h2o)
DP-221	HL-1 to CL1 Differential Pressure at Rx	4.9677	0.9951	150	0	Differential Pressure (in h2o)
DP-222	HL-2 to CL2 Differential Pressure at Rx	4.983	0.9975	150	0	Differential Pressure (in h2o)
DP-223	HL-1 to CL3 Differential Pressure at Rx	4.9915	0.9987	150	0	Differential Pressure (in h2o)
DP-224	HL-2 to CL4 Differential Pressure at Rx	4.9665	0.9944	150	0	Differential Pressure (in h2o)
DP-401	ACC-1 Injection Differential Pressure	4.979	0.9975	400	0	Differential Pressure (in h2o)
DP-402	ACC-2 Injection Differential Pressure	4.9736	0.9958	400	0	Differential Pressure (in h2o)
DP-501	CMT-1 Injection Differential Pressure	4.9675	0.9948	150	-150	Differential Pressure (in h2o)
DP-502	CMT-2 Injection Differential Pressure	4.9645	0.9947	150	-150	Differential Pressure (in h2o)
DP-503	CMT-1 Balance Line Differential Pressure	4.9858	0.998	150	-150	Differential Pressure (in h2o)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
DP-504	CMT-2 Balance Line Differential Pressure	4.9955	1.0007	100	-100	Differential Pressure (in h2o)
DP-601	HL-1 to ADS4-1 Differential Pressure	4.9969	1.0008	10	0	Differential Pressure (psid)
DP-602	HL-2 to ADS4-2 Differential Pressure	4.967	0.9948	10	0	Differential Pressure (psid)
DP-603	ADS4-1 Venturi	4.9847	0.9985	100	0	Differential Pressure (in h2o)
DP-604	ADS4-2 Venturi	4.964	0.9941	100	0	Differential Pressure (in h2o)
DP-605	ADS4-1 Venturi outlet to Enlarger inlet	4.9881	0.9993	50	0	Differential Pressure (in h2o)
DP-606	ADS4-2 Venturi outlet to Enlarger inlet	4.9857	0.9991	50	0	Differential Pressure (in h2o)
DP-611	PZR Surge Line Differential Pressure	4.9773	0.9967	25	-25	Differential Pressure (in h2o)
DP-701	IRWST-1 Injection Differential Pressure	4.9872	0.9982	30	0	Differential Pressure (psid)
DP-702	IRWST-2 Injection Differential Pressure	4.9871	0.9981	30	0	Differential Pressure (psid)
DP-905	Break Separator Entrance Differential Pressure	4.9905	0.9994	100	0	Differential Pressure (psid)
FDP-604	ADS-2 Flow Differential Pressure	4.9738	0.9961	100	0	Differential Pressure (psid)
FDP-605	ADS-1 Flow Differential Pressure	4.9896	0.9993	250	0	Differential Pressure (psid)
FDP-606	ADS-3 Flow Differential Pressure	5.0051	1.0023	100	0	Differential Pressure (psid)
FMM-001	SG-1 Feed Flow	4.9838	0.9961	6	0	Volumetric Flow Rate (gpm)
FMM-002	SG-2 Feed Flow	4.9642	0.9925	6	0	Volumetric Flow Rate (gpm)
FMM-201	CL-1 Loop Flow	4.9607	0.9921	100	-100	Volumetric Flow Rate (gpm)
FMM-202	CL-2 Loop Flow	4.9754	0.9943	100	-100	Volumetric Flow Rate (gpm)
FMM-203	CL-3 Loop Flow	4.9853	0.9974	100	-100	Volumetric Flow Rate (gpm)
FMM-204	CL-4 Loop Flow	4.9729	0.9936	100	-100	Volumetric Flow Rate (gpm)
FMM-205	DVI-1 Flow	4.9706	0.996	75	0	Volumetric Flow Rate (gpm)
FMM-206	DVI-2 Flow	4.9767	0.9969	75	0	Volumetric Flow Rate (gpm)
FMM-401	ACC-1 Injection Flow	4.9516	0.9932	40	0	Volumetric Flow Rate (gpm)
FMM-402	ACC-2 Injection Flow	4.9772	0.9965	40	0	Volumetric Flow Rate (gpm)
FMM-501	CMT-1 Injection Flow	4.9959	1.0006	75	0	Volumetric Flow Rate (gpm)
FMM-502	CMT-2 CL Balance Line Flow	4.9742	0.9994	70	0	Volumetric Flow Rate (gpm)
FMM-503	CMT-1 CL Balance Line Flow	4.9717	0.9985	75	0	Volumetric Flow Rate (gpm)
FMM-504	CMT-2 Injection Flow	4.9523	0.9925	20	0	Volumetric Flow Rate (gpm)
FMM-601	ADS1-3 Loop Seal Flow	5.0168	1.004	200	0	Volumetric Flow Rate (gpm)
FMM-602	ADS4-2 Loop Seal Flow	5.0507	1.0117	60	0	Volumetric Flow Rate (gpm)
FMM-603	ADS4-1 Loop Seal Flow	5.0571	1.0129	60	0	Volumetric Flow Rate (gpm)
FMM-701	IRWST/DVI-1 Injection Flow	4.9738	0.9954	40	0	Volumetric Flow Rate (gpm)
FMM-702	IRWST/DVI-2 Injection Flow	4.9724	0.9955	40	0	Volumetric Flow Rate (gpm)
FMM-703	IRWST Overflow	4.9663	0.9966	10	0	Volumetric Flow Rate (gpm)
FMM-801	CVSP Discharge Flow	4.9876	0.9998	8	0	Volumetric Flow Rate (gpm)
FMM-802	PRHR Inlet Flow	4.9656	0.9966	40	0	Volumetric Flow Rate (gpm)
FMM-803	RNSP to DVI-2 Flow	4.9629	0.9942	30	0	Volumetric Flow Rate (gpm)
FMM-804	PRHR Outlet Flow	4.9612	0.9963	40	0	Volumetric Flow Rate (gpm)
FMM-805	RNSP Discharge Flow	4.9711	0.9936	40	0	Volumetric Flow Rate (gpm)
FMM-901	Primary Sump-1 Recirculation Injection Flow	4.9673	0.9936	40	-40	Volumetric Flow Rate (gpm)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
FMM-902	Primary Sump-2 Recirculation Injection Flow	4.9726	0.9948	40	-40	Volumetric Flow Rate (gpm)
FMM-905	Break Separator Loop Seal Flow	5.1224	1.0902	90	-90	Volumetric Flow Rate (gpm)
FVM-001	SG-1 Main Steam Flow	5.0223	1.005	200	0	Steam Flow Rate (cfm)
FVM-002	SG-2 Main Steam Flow	4.9878	0.9982	200	0	Steam Flow Rate (cfm)
FVM-003	Main Steam Total Flow	4.9815	0.9978	70	0	Steam Flow Rate (cfm)
FVM-009	SG-1 PORV Blowdown Steam Flow	4.9836	0.9967	381	0	Steam Flow Rate (cfm)
FVM-010	SG-2 PORV Blowdown Steam Flow	4.9817	0.9971	381	0	Steam Flow Rate (cfm)
FVM-601	ADS1-3 Separator Steam Flow	4.9995	1.0017	2000	0	Steam Flow Rate (cfm)
FVM-602	ADS4-2 Separator 6-inch Line Steam Flow	5.006	1.0018	2000	0	Steam Flow Rate (cfm)
FVM-603	ADS4-1 Separator 6-inch Line Steam Flow	5.0062	1.0024	1600	0	Steam Flow Rate (cfm)
FVM-604	ADS4-2 Separator 2-inch Line Steam Flow	5.0034	1.0026	348	0	Steam Flow Rate (cfm)
FVM-605	ADS4-1 Separator 2-inch Line Steam Flow	5.0037	1.0028	348	0	Steam Flow Rate (cfm)
FVM-901	BAMS HDR 6-inch Line Steam Flow	5.0021	1.0023	5000	0	Steam Flow Rate (cfm)
FVM-902	BAMS HDR 10-inch Line Steam Flow	5.01	1.0027	12500	0	Steam Flow Rate (cfm)
FVM-903	Primary Sump Steam Exhaust Flow	4.9879	0.9949	22	0	Steam Flow Rate (cfm)
FVM-904	Break Separator 3-inch Line Steam Flow	4.9986	0.9979	400	0	Steam Flow Rate (cfm)
FVM-905	Break Separator 6-inch Line Steam Flow	5.0036	1.004	6000	0	Steam Flow Rate (cfm)
FVM-906	Break Separator 8-inch Line Steam Flow	5.0048	1.0025	4000	0	Steam Flow Rate (cfm)
HPS-201-1	CL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-201-2	CL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-201-3	CL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-202-1	CL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-202-2	CL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-202-3	CL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-203-1	CL-3 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-203-2	CL-3 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-203-3	CL-3 Fluid temperature	10	0	10	0	Voltage (V)
HPS-204-1	CL-4 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-204-2	CL-4 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-204-3	CL-4 Fluid temperature	10	0	10	0	Voltage (V)
HPS-205-1	HL-1 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-205-2	HL-1 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-205-3	HL-1 Fluid temperature	10	0	10	0	Voltage (V)
HPS-206-1	HL-2 Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-206-2	HL-2 Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-206-3	HL-2 Fluid temperature	10	0	10	0	Voltage (V)
HPS-509-1	CMT-1 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-509-2	CMT-1 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-509-3	CMT-1 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-512-1	CMT-2 CL Balance Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
HPS-512-2	CMT-2 CL Balance Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-512-3	CMT-2 CL Balance Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-604-1	Lower PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-604-2	Lower PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-604-3	Lower PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-606-1	ADS1-3 Common Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-606-2	ADS1-3 Common Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-606-3	ADS1-3 Common Inlet Fluid temperature	10	0	10	0	Voltage (V)
HPS-607-1	Upper PZR Surge Line Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-607-2	Upper PZR Surge Line Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-607-3	Upper PZR Surge Line Fluid temperature	10	0	10	0	Voltage (V)
HPS-801-1	PRHR HX Inlet Heat Transfer Coefficient	10	0	10	0	Voltage (V)
HPS-801-2	PRHR HX Inlet Heater dT above fluid temperature	10	0	10	0	Voltage (V)
HPS-801-3	PRHR HX Inlet Fluid temperature	10	0	10	0	Voltage (V)
KW-101	Rx Heater Group 1 Power	4.3222	1.1171	472	0	Power (kW)
KW-102	Rx Heater Group 2 Power	4.1621	1.0045	486	0	Power (kW)
KW-103	Rx Heater Group 1 Power	4.8931	0.9786	496	0	Power (kW)
KW-104	Rx Heater Group 2 Power	4.912	0.9946	492	0	Power (kW)
KW-601	PZR Heater Power	4.9435	0.982	24.3	0	Power (kW)
LCT-701	IRWST Weight	4.9831	0.9976	40000	0	Mass (lbm)
LCT-901	Primary Sump Weight	4.977	0.9969	28800	0	Mass (lbm)
LCT-902	Secondary Sump Weight	4.9845	0.9983	16700	0	Mass (lbm)
LDP-001	FST Uncompensated Water Level	5.0056	1.0017	91.88	0	Water Level (in)
LDP-101	CL to Bypass Holes Uncompensated Water Level (270)	4.9645	0.9945	5.561	0	Water Level (in)
LDP-102	CL to Bypass Holes Uncompensated Water Level (180)	4.9725	0.9963	5.938	0	Water Level (in)
LDP-103	DVI to CL Uncompensated Water Level (270)	4.9807	0.9982	11.692	0	Water Level (in)
LDP-104	DVI to CL Uncompensated Water Level (180)	4.9748	0.9992	12.376	0	Water Level (in)
LDP-105	Upper Core Plate to DVI Uncompensated Water Level (270)	5.0076	1.0058	11.929	0	Water Level (in)
LDP-106	Bottom of Core to Lower Core Plate Uncompensated Water Level (180)	4.9732	0.9985	8.198	0	Water Level (in)
LDP-107	Bottom of Core to Lower Core Plate Uncompensated Water Level (270)	4.9713	0.9958	8.223	0	Water Level (in)
LDP-108	Bottom of Core to Lower Core Plate Uncompensated Water Level (0)	4.9683	0.9953	8.562	0	Water Level (in)
LDP-109	Lower Core Plate to Mid-Core Spacer Grid Uncompensated Water Level (0)	4.984	0.9988	19.763	0	Water Level (in)
LDP-110	Mid-Core Spacer Grid to Upper-Core Spacer Grid Uncompensated Water Level (0)	4.9909	0.9991	20.02	0	Water Level (in)
LDP-112	Upper Core Plate to DVI Uncompensated Water Level (0)	4.9755	0.9963	4.696	0	Water Level (in)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
LDP-113	DVI to Bottom of Upper Support Plate Uncompensated Water Level (0)	4.9849	0.9986	15.614	0	Water Level (in)
LDP-115	Upper Support Plate to Top of Rx Uncompensated Water Level (0)	4.9896	0.9996	24.28	0	Water Level (in)
LDP-116	Bottom of Rx to Bottom of Bypass Holes Uncompensated Water Level (270)	4.9638	0.9949	77.59	0	Water Level (in)
LDP-117	Upper Core Spacer Grid to DVI Uncompensated Water Level (180)	4.9838	0.9983	11.383	0	Water Level (in)
LDP-118	Lower Core Plate to Upper Core Plate Uncompensated Water Level (270)	4.9848	0.9988	39.98	0	Water Level (in)
LDP-119	Lower Core Plate to Upper Core Support Grid Uncompensated Water Level (180)	4.988	0.9996	40.26	0	Water Level (in)
LDP-127	Rx Wide Range Uncompensated Water Level	4.999	1.0007	98.97	0	Water Level (in)
LDP-138	Upper Core Spacer Grid to Bottom of Upper Support Plate Uncompensated Water Level (180)	4.9639	0.9946	39.3	0	Water Level (in)
LDP-139	Top of Lower Core Plate to Upper Core Spacer Grid Uncompensated Water Level	4.9837	0.9982	24.166	0	Water Level (in)
LDP-140	Bottom of Rx to Bottom of Flow Holes (180) Uncompensated Water Level	4.9981	1.0014	78.02	0	Water Level (in)
LDP-141	Upper Core Plate to Lower Support Plate Uncompensated Water Level	4.9843	0.9994	20.135	0	Water Level (in)
LDP-201	CL-1 Uncompensated Water Level	4.9961	1.0002	2.496	0	Water Level (in)
LDP-202	CL-2 Uncompensated Water Level	4.9924	0.9994	2.223	0	Water Level (in)
LDP-203	CL-3 Uncompensated Water Level	4.9923	0.9994	2.532	0	Water Level (in)
LDP-204	CL-4 Uncompensated Water Level	4.9594	0.9927	2.47	0	Water Level (in)
LDP-205	HL-1 Uncompensated Water Level	4.9663	0.9945	4.415	0	Water Level (in)
LDP-206	HL-2 Uncompensated Water Level	4.9653	0.9944	4.013	0	Water Level (in)
LDP-207	SG-1 to HL-1 Elbow Plenum Uncompensated Water Level	4.9779	0.9972	18.3	0	Water Level (in)
LDP-208	SG-2 to HL-2 Elbow Plenum Uncompensated Water Level	4.9825	0.9969	19.247	0	Water Level (in)
LDP-209	SG-1 to HL-1 Plenum Uncompensated Water Level	4.9954	1.0002	10.939	0	Water Level (in)
LDP-210	SG-2 to CL-4 Plenum Uncompensated Water Level	4.9677	0.9943	16.988	0	Water Level (in)
LDP-211	SG-1 to CL-3 Plenum Uncompensated Water Level	4.9613	0.993	16.793	0	Water Level (in)
LDP-212	SG-2 to CL-2 Plenum Uncompensated Water Level	4.9836	0.9982	16.772	0	Water Level (in)
LDP-213	SG-1 to CL-1 Plenum Uncompensated Water Level	4.9864	0.9978	16.747	0	Water Level (in)
LDP-214	SG-2 to HL-2 Plenum Uncompensated Water Level	4.9953	1.0002	11.571	0	Water Level (in)
LDP-215	SG-1 Long Tube to HL Uncompensated Water Level	4.99	0.9992	102.06	0	Water Level (in)
LDP-216	SG-2 Short Tube to HL Uncompensated Water Level	4.9717	0.9955	95.55	0	Water Level (in)
LDP-217	SG-1 Short Tube to HL Uncompensated Water Level	4.9618	0.9932	96.25	0	Water Level (in)
LDP-218	SG-2 Long Tube to HL Uncompensated Water Level	4.9658	0.9943	103.14	0	Water Level (in)
LDP-219	SG-1 Long Tube to CL Uncompensated Water Level	4.9867	0.9992	102.45	0	Water Level (in)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
LDP-220	SG-2 Short Tube to CL Uncompensated Water Level	4.9786	0.9971	96	0	Water Level (in)
LDP-221	SG-1 Short Tube to CL Uncompensated Water Level	4.985	0.9986	95.98	0	Water Level (in)
LDP-222	SG-2 Long Tube to CL Uncompensated Water Level	4.9628	0.9947	102.71	0	Water Level (in)
LDP-301	SG-1 WR Uncompensated Water Level	5.0022	1.0006	119.25	0	Water Level (in)
LDP-302	SG-2 WR Uncompensated Water Level	4.9995	1.0003	119.02	0	Water Level (in)
LDP-303	SG-1 NR Uncompensated Water Level	4.9699	0.9934	31.81	0	Water Level (in)
LDP-304	SG-2 NR Uncompensated Water Level	4.9748	0.995	31.52	0	Water Level (in)
LDP-401	ACC-1 Uncompensated Water Level	4.987	0.9951	38.26	0	Water Level (in)
LDP-402	ACC-2 Uncompensated Water Level	5.166	1.0332	38.34	0	Water Level (in)
LDP-501	CMT-1 NR Uncompensated Water Level (Bottom)	4.9834	0.9986	5.31	0	Water Level (in)
LDP-502	CMT-2 WR Uncompensated Water Level	5.1958	1.0396	57.5	0	Water Level (in)
LDP-503	CMT-1 NR Uncompensated Water Level (Middle)	4.984	0.9979	46.77	0	Water Level (in)
LDP-504	CMT-2 NR Uncompensated Water Level (Bottom)	4.9793	0.9972	5.226	0	Water Level (in)
LDP-505	CMT-1 NR Uncompensated Water Level (Top)	4.994	1	5.486	0	Water Level (in)
LDP-506	CMT-2 NR Uncompensated Water Level (Middle)	4.9823	0.9975	46.96	0	Water Level (in)
LDP-507	CMT-1 WR Uncompensated Water Level	5.1887	1.0383	57.5	0	Water Level (in)
LDP-508	CMT-2 NR Uncompensated Water Level (Top)	4.9913	0.9994	5.309	0	Water Level (in)
LDP-509	CL-3 to CMT-1 Balance Line Uncompensated Water Level	4.9772	0.9968	78.84	0	Water Level (in)
LDP-510	CL-1 to CMT-2 Balance Line Uncompensated Water Level	4.9653	0.9942	78.28	0	Water Level (in)
LDP-601	PZR WR Uncompensated Water Level	5.0006	0.9991	140.47	0	Water Level (in)
LDP-602	PZR Surge Line Uncompensated Water Level	4.9777	0.997	47.5	0	Water Level (in)
LDP-605	PZR Upper Surge Line Pipe Uncompensated Water Level	4.9735	0.9963	3.533	0	Water Level (in)
LDP-606	PZR Surge Line Pipe Level at PZR Inlet Uncompensated Water Level	4.9724	0.9958	18.696	0	Water Level (in)
LDP-607	PZR Middle Surge Line Pipe Uncompensated Water Level	4.9737	0.996	4.127	0	Water Level (in)
LDP-608	PZR Lower Surge Line Pipe Uncompensated Water Level	4.9731	0.9964	3.82	0	Water Level (in)
LDP-609	PZR Surge Line Pipe Uncompensated Water Level at HL-2	4.996	1.0011	14.717	0	Water Level (in)
LDP-610	ADS1-3 Separator Uncompensated Water Level	5.193	1.0399	45.24	0	Water Level (in)
LDP-611	ADS4-1 Separator Uncompensated Water Level	5.1628	1.0342	55.97	0	Water Level (in)
LDP-612	ADS4-2 Separator Uncompensated Water Level	5.1859	1.0386	56.6	0	Water Level (in)
LDP-701	IRWST Uncompensated Water Level	5.0202	1.0048	115.8	0	Water Level (in)
LDP-801	PRHR HX Inlet Head Uncompensated Water Level	4.9945	1.0013	6.971	0	Water Level (in)
LDP-802	PRHR HX WR Uncompensated Water Level	4.9871	0.9998	57.08	0	Water Level (in)
LDP-901	Primary Sump Uncompensated Water Level	5.0016	1.0015	104.36	0	Water Level (in)
LDP-902	Secondary Sump Uncompensated Water Level	5.0018	1.0007	102.56	0	Water Level (in)
LDP-903	CRT Uncompensated Water Level	5.1669	1.0346	32.358	0	Water Level (in)
LDP-905	Break Separator Uncompensated Water Level	5.1788	1.0378	130.68	0	Water Level (in)
LT-120	Rx Vessel Capacitance Probe Water Level	5.0053	1.0042	99	50	Water Level (in)
PT-001	MFP Discharge Pressure	5.0658	1.0121	600	0	Pressure (psig)
PT-002	MS Header Pressure	4.9759	0.9962	500	0	Pressure (psig)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
PT-003	Lab Barometer	4.9656	0.9944	20	10	Pressure (psia)
PT-009	SG-1 PORV Blowdown Pressure	4.9816	0.9983	300	0	Pressure (psig)
PT-010	SG-2 PORV Blowdown Pressure	4.9924	1.0004	300	0	Pressure (psig)
PT-101	CL-1 Pressure at Rx Flange	4.9877	0.9986	500	0	Pressure (psig)
PT-102	CL-2 Pressure at Rx Flange	4.9706	0.9958	10	0	Pressure (psig)
PT-103	CL-3 Pressure at Rx Flange	4.9646	0.9946	10	0	Pressure (psig)
PT-104	CL-4 Pressure at Rx Flange	4.9882	0.9988	500	0	Pressure (psig)
PT-107	Rx Upper Head Pressure	5.0478	1.0096	500	0	Pressure (psig)
PT-108	Bottom of Rx Pressure	4.9637	0.9938	500	0	Pressure (psig)
PT-109	DVI-1 Pressure at Rx Flange	4.9874	0.998	500	0	Pressure (psig)
PT-110	DVI-2 Pressure at Rx Flange	4.9825	0.9984	10	0	Pressure (psig)
PT-111	Rx Annular Pressure at Flow Bypass Holes	4.9886	0.9982	500	0	Pressure (psig)
PT-112	Rx Annular Pressure at Bottom of Rx	4.977	0.9958	10	0	Pressure (psig)
PT-113	Rx Pressure Below Mid-Core Spacer Grid	4.9616	0.9921	500	0	Pressure (psig)
PT-201	SG-1 Long Tube Pressure (Top)	4.9935	1.0008	500	0	Pressure (psig)
PT-202	HL-2 Pressure at SG-2 Flange	4.9841	0.9978	500	0	Pressure (psig)
PT-203	CL Break Pressure at Break Valve	4.988	0.9982	500	0	Pressure (psig)
PT-204	SG-2 Long Tube Pressure (Top)	4.9974	1.0005	500	0	Pressure (psig)
PT-205	HL-1 Pressure at SG-1 Flange	4.9838	0.9988	400	0	Pressure (psig)
PT-206	HL Break Pressure at Break Valve	4.9869	0.9982	500	0	Pressure (psig)
PT-301	SG-1 Pressure	5.0617	1.0123	500	0	Pressure (psig)
PT-302	SG-2 Pressure	5.1023	1.0219	500	0	Pressure (psig)
PT-401	ACC-1 Pressure	4.9908	0.9993	300	0	Pressure (psig)
PT-402	ACC-2 Pressure	4.9802	0.9975	300	0	Pressure (psig)
PT-501	CMT-1 Pressure	4.982	0.9979	300	0	Pressure (psig)
PT-502	CMT-2 Pressure	4.9869	0.998	500	0	Pressure (psig)
PT-602	PZR NR Pressure	4.9747	0.9988	400	300	Pressure (psig)
PT-603	PZR NR Pressure	4.9616	0.9944	10	0	Pressure (psig)
PT-604	PZR WR Pressure	4.9794	0.9942	500	0	Pressure (psig)
PT-605	ADS1-3 Separator Pressure	4.9725	0.9966	100	0	Pressure (psig)
PT-606	IRWST Sparger Line Pressure	4.9653	0.995	100	0	Pressure (psig)
PT-610	ADS4-2 Separator Pressure	4.9845	0.9983	10	0	Pressure (psig)
PT-611	ADS4-1 Separator Pressure	4.9806	0.9977	10	0	Pressure (psig)
PT-701	IRWST Pressure	5.0436	1.0087	15	0	Pressure (psig)
PT-801	CVSP Discharge Pressure	4.9909	0.9993	500	0	Pressure (psig)
PT-802	RNSP Discharge Pressure	4.9768	0.9962	250	0	Pressure (psig)
PT-901	Primary Sump Pressure	4.9659	0.9947	10	0	Pressure (psig)
PT-902	BAMS Header Pressure	4.9988	1.0013	16	0	Pressure (psig)
PT-905	Break Separator Pressure	5.0265	1.0067	20	0	Pressure (psig)
TF-005	Lab Ambient Temperature at Ground Level	1000	0	1000	0	Fluid Temperature (F)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-006	Lab Ambient Temperature at Second Level	1000	0	1000	0	Fluid Temperature (F)
TF-007	Lab Ambient Temperature at Third Level	1000	0	1000	0	Fluid Temperature (F)
TF-009	SG-1 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-010	SG-2 PORV Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-101	CL-3 Temperature (SC-101)	450	40	450	40	Fluid Temperature (F)
TF-101-1.3D-2	CL-1 Downcomer Temperature at 1.3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-1	CL-1 Downcomer Temperature at 2D, 120 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-2	CL-1 Downcomer Temperature at 2D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-2D-3	CL-1 Downcomer Temperature at 2D, 150 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-1	CL-1 Downcomer Temperature at 3D, 104 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-2	CL-1 Downcomer Temperature at 3D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-3D-3	CL-1 Downcomer Temperature at 3D, 166 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-1	CL-1 Downcomer Temperature at 4D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-4D-2	CL-1 Downcomer Temperature at 4D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-1	CL-1 Downcomer Temperature at 8D, 90 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-101-8D-2	CL-1 Downcomer Temperature at 8D, 135 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102	CL-4 Temperature (SC-102)	450	40	450	40	Fluid Temperature (F)
TF-102-1.3D-2	CL-2 Downcomer Temperature at 1.3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-1	CL-2 Downcomer Temperature at 2D, 210 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-2	CL-2 Downcomer Temperature at 2D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-2D-3	CL-2 Downcomer Temperature at 2D, 240 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-1	CL-2 Downcomer Temperature at 3D, 194 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-2	CL-2 Downcomer Temperature at 3D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-3D-3	CL-2 Downcomer Temperature at 3D, 256 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-4D-2	CL-2 Downcomer Temperature at 4D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-1	CL-2 Downcomer Temperature at 8D, 180 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-102-8D-2	CL-2 Downcomer Temperature at 8D, 225 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-1.3D-2	CL-3 Downcomer Temperature at 1.3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-1	CL-3 Downcomer Temperature at 2D, 30 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-2	CL-3 Downcomer Temperature at 2D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-2D-3	CL-3 Downcomer Temperature at 2D, 60 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-1	CL-3 Downcomer Temperature at 3D, 14 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-2	CL-3 Downcomer Temperature at 3D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-3D-3	CL-3 Downcomer Temperature at 3D, 76 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-4D-2	CL-3 Downcomer Temperature at 4D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-1	CL-3 Downcomer Temperature at 8D, 0 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-103-8D-2	CL-3 Downcomer Temperature at 8D, 45 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-1.3D-2	CL-4 Downcomer Temperature at 1.3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-1	CL-4 Downcomer Temperature at 2D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-2D-2	CL-4 Downcomer Temperature at 2D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-104-2D-3	CL-4 Downcomer Temperature at 2D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1	CL-4 Downcomer Temperature at 3D, 284 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-1.5	CL-4 Downcomer Temperature at 3D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2	CL-4 Downcomer Temperature at 3D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-2.5	CL-4 Downcomer Temperature at 3D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-3D-3	CL-4 Downcomer Temperature at 3D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1	CL-4 Downcomer Temperature at 4D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.3	CL-4 Downcomer Temperature at 4D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-1.6	CL-4 Downcomer Temperature at 4D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2	CL-4 Downcomer Temperature at 4D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.3	CL-4 Downcomer Temperature at 4D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-4D-2.6	CL-4 Downcomer Temperature at 4D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1	CL-4 Downcomer Temperature at 8D, 270 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.3	CL-4 Downcomer Temperature at 8D, 285 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-1.6	CL-4 Downcomer Temperature at 8D, 300 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2	CL-4 Downcomer Temperature at 8D, 315 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.3	CL-4 Downcomer Temperature at 8D, 330 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-104-8D-2.6	CL-4 Downcomer Temperature at 8D, 345 degrees	1000	0	1000	0	Fluid Temperature (F)
TF-105	CL-1 Temperature (SC-105)	450	40	450	40	Fluid Temperature (F)
TF-106	CL-2 Temperature (SC-106)	450	40	450	40	Fluid Temperature (F)
TF-107	CL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-108	CL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-113	DVI-1/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-114	DVI-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-115	DVI-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-116	DVI-2/Rx Flange at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-118	Lower Rx Vessel Layer Y-Y at 30 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-120	Top of Rx at 8.5 inches & 350 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-126	Lower Rx Vessel Layer A-A at 225 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-127	Lower Rx Vessel Layer A-A at 315 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-128	Lower Rx Vessel Layer C-C at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-129	Lower Rx Vessel Layer C-C at 32 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-130	Lower Rx Vessel Layer G-G at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-131	Lower Rx Vessel Layer G-G at 11.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-132	Upper Rx Vessel Layer F-F at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-133	Upper Rx Vessel Layer F-F at 8 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-134	Upper Rx Vessel Layer E-E at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-135	Upper Rx Vessel Layer E-E at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-140	HL-2 Temperature at Rx Flange (SC-140)	450	40	450	40	Fluid Temperature (F)
TF-141	HL-1 Temperature at Rx Flange (SC-141)	450	40	450	40	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-142	HL-2/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-143	HL-1/Rx Flange at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-147	Upper Rx Vessel Layer I-I at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-148	Upper Rx Vessel Layer I-I at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-149	Upper Rx Vessel Layer H-H at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-150	Upper Rx Vessel Layer H-H at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-151	Upper Rx Vessel Layer E-E at 186.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-152	Upper Rx Vessel Layer E-E at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-153	Upper Rx Vessel Layer F-F at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-154	Upper Rx Vessel Layer F-F at 188 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-155	Lower Rx Vessel Layer G-G at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-156	Lower Rx Vessel Layer G-G at 191.3 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-157	Lower Rx Vessel Layer C-C at 212 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-158	Lower Rx Vessel Layer C-C at 180 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-162	Lower Rx Vessel Layer A-A at 45 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-163	Lower Rx Vessel Layer A-A at 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-164	Upper Rx Vessel Layer H-H at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-165	Upper Rx Vessel Layer H-H at 6.2 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-166	Upper Rx Vessel Layer I-I at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-167	Rx Heater Rod B2-319 at 40.13 inches	1000	0	1000	0	Fluid Temperature (F)
TF-168	Upper Rx Vessel Layer K-K at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-169	Upper Rx Vessel Layer M-M at 90 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-170	Upper Rx Vessel Layer M-M at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-171	Top of Rx Down to within 0.50 inches of Upper Support Plate Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-172	Lower Rx Vessel Layer AA-AA at 0 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-173	Lower Rx Vessel Layer AA-AA at 270 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-201	CL-1 at RCP-1 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-202	CL-2 at RCP-2 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-203	CL-3 at RCP-3 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-204	CL-4 at RCP-4 Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-205	HL-1 Temperature at SG-1 Head (SC-205)	450	40	450	40	Fluid Temperature (F)
TF-206	HL-2 Temperature at SG-2 Head (SC-206)	450	40	450	40	Fluid Temperature (F)
TF-207	SG-1 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-208	SG-2 Short Tube at Middle Outlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-209	SG-1 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-210	SG-2 Short Tube at Middle Inlet Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-211	SG-1 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-212	SG-2 Long Tube at Middle Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-213	SG-1 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-214	SG-2 Long Tube at Middle Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-215	SG-1 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-216	SG-2 Short Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-217	SG-1 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-218	SG-2 Long Tube at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-221	CL-3 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-222	CL-4 T/C Rod at 3.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-223	CL-3 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-224	CL-4 T/C Rod at 2.50 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-225	CL-3 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-226	CL-4 T/C Rod at 1.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-227	CL-3 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-228	CL-4 T/C Rod at 1.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-229	CL-3 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-230	CL-4 T/C Rod at 0.75 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-231	CL-3 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-232	CL-4 T/C Rod at 0.25 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-1	CL-1 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-2	CL-1 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-251-3	CL-1 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-1	CL-2 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-2	CL-2 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-252-3	CL-2 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-1	CL-3 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-2	CL-3 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-253-3	CL-3 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-1	CL-4 Loop Seal Upper Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-2	CL-4 Loop Seal Middle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-254-3	CL-4 Loop Seal Lower Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-255	CL-1 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-256	CL-2 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-257	CL-3 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-258	CL-4 Safety Injection Nozzle Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-301	SG-1 Steam Temperature (SC-301)	450	40	450	40	Fluid Temperature (F)
TF-305	SG-1 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-306	SG-2 Downcomer HL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-307	SG-1 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-308	SG-2 Downcomer CL Side Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-310	SG-2 Steam Temperature (SC-310)	450	40	450	40	Fluid Temperature (F)
TF-311	SG-1 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-312	SG-2 Feed Header Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-401	ACC-1 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-402	ACC-2 Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-403	ACC-1 N2Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-404	ACC-2 N2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-405	ACC-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-406	ACC-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-501	CMT-1 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-502	CMT-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-503	CMT-1 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-504	CMT-2 Long T/C Rod at 0.30 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-505	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-506	CMT-2 at 1/2 Lower Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-507	CMT-1 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-508	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-509	CMT-1 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-510	CMT-2 Long T/C Rod at 20.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-511	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-512	CMT-2 Long T/C Rod at 36.89 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-513	CMT-1 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-514	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-515	CMT-1 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-516	CMT-2 Long T/C Rod at 40.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-517	CMT-1 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-518	CMT-2 Long T/C Rod at 43.41 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-519	CMT-1 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-520	CMT-2 at 75% Volume-Height minus 3.7 inches 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-521	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-522	CMT-2 Long T/C Rod at 46.23 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-523	CMT-1 Long T/C Rod at 49.05 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-524	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-525	CMT-1 at 1/2 Upper-Head Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-526	CMT-2 SPARGER 2\3 TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-527	CMT-1 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-528	CMT 2\3 HEAD TEMP	1000	0	1000	0	Fluid Temperature (F)
TF-529	CMT-1 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-530	CMT-2 Long T/C Rod at 51.87 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-531	CMT-1 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-532	CMT-2 Long T/C Rod at 56.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-533	CMT-1 CL Balance Line at CL-3 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-535	CMT-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-536	CMT-2 CL Balance Line at CL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-537	CMT-1 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-538	CMT-2 at 20% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-539	CMT-1 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-540	CMT-2 at 50% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-541	CMT-1 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-542	CMT-2 at 60% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-543	CMT-1 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-544	CMT-2 at 75% Volume-Height, 135 degrees Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-546	CMT-2 Balance Line at CMT Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-547	CMT-1 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-548	CMT-2 Long T/C Rod at 54.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-549	CMT-1 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-550	CMT-2 Discharge Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-551	CMT-1 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-552	CMT-2 Short T/C Rod (225 degrees) 5.5 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-553	CMT-1 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-554	CMT-2 Short T/C Rod (225 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-555	CMT-1 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-556	CMT-2 Short T/C Rod (225 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-557	CMT-1 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-558	CMT-2 Short T/C Rod (315 degrees) 5.9 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-559	CMT-1 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-560	CMT-2 Short T/C Rod (315 degrees) 8.69 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-561	CMT-1 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-562	CMT-2 Short T/C Rod (315 degrees) 11.44 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-563	CMT-1 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-564	CMT-2 Short T/C Rod (315 degrees) 14.19 inches from top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-601	PZR Surge Line at PZR Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-602	ADS1-3 Common Line at PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-603	PZR Surge Line at HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-605	PZR Water Space Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-608	PZR Temperature (SC-608)	450	40	450	40	Fluid Temperature (F)
TF-609	ADS4-1 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-610	ADS4-2 Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-614	PZR Steam Vent Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-615	ADS1-3 Common Line From PZR Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-616	ADS1-3 Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-617	ADS1-3 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-618	ADS4-2 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-619	ADS4-1 Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-620	ADS4-2 Inlet From HL-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-621	ADS4-1 Inlet From HL-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-622	ADS4-2 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-623	ADS4-1 Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-701	IRWST/PRHR T/C Rod at Bottom Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-702	IRWST/PRHR T/C Rod at 7.98 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-703	IRWST/PRHR T/C Rod at 15.97 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-704	IRWST/PRHR T/C Rod at 25.85 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-705	IRWST/PRHR T/C Rod at 35.73 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-706	IRWST/PRHR T/C Rod at 45.61 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-707	IRWST/PRHR T/C Rod at 55.49 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-708	IRWST/PRHR T/C Rod at 65.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-709	IRWST/PRHR T/C Rod at 75.24 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-710	IRWST/PRHR T/C Rod at 86.36 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-711	IRWST/PRHR T/C Rod at 97.47 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-712	IRWST/PRHR T/C Rod at 108.59 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-713	IRWST Discharge to DVI-01 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-714	IRWST Discharge to DVI-02 at IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-715	IRWST Sparger T/C Rod at 8.97 inches Temperature (SC-715)	1000	0	1000	0	Fluid Temperature (F)
TF-716	IRWST Sparger T/C Rod at 36.63 inches Temperature	240	40	240	40	Fluid Temperature (F)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TF-717	IRWST Sparger T/C Rod at 66.34 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-718	IRWST Sparger T/C Rod at 98.45 inches Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-719	IRWST Sparger Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-720	IRWST/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-721	IRWST/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-722	IRWST Steam Exhaust Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-723	IRWST/Primary Sump Overflow Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-801	CVSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-802	RNSP Discharge Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-803	PRHR HX Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-804	PRHR HX Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-805	PRHR HX Long Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-806	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-808	PRHR HX Short Tube Outlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-809	PRHR HX Long Tube at Center Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-810	PRHR HX Short Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-811	PRHR HX Long Tube Inlet at Bend Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-812	PRHR HX Outlet Head Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-813	RNSP Discharge to DVI-1 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-814	RNSP Discharge to DVI-2 Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-901	Primary Sump Inlet from Fill Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-902	Secondary Sump Temperature (SC-902)	240	40	240	40	Fluid Temperature (F)
TF-903	Primary Sump Temperature (SC-903)	240	40	240	40	Fluid Temperature (F)
TF-904	Primary Sump/DVI-2 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-905	Primary Sump at Secondary Sump Crossover Level Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-906	Primary Sump Exhaust Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-907	Primary Sump at Top Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-908	Break Separator Inlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-909	Primary Sump/DVI-1 Injection Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-910	CRP Discharge to Primary Sump Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-911	CRP Discharge to IRWST Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-912	Break Separator Loop Seal Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-913	Break Separator Steam Outlet Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-914	Condensate Return Tank Temperature (SC-914)	200	40	200	40	Fluid Temperature (F)
TF-915	Break Separator 6-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-916	BAMS Header 10-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TF-917	BAMS Header Temperature (SC-917)	240	40	240	40	Fluid Temperature (F)
TF-918	Break Separator 8-inch Steam Line Temperature	1000	0	1000	0	Fluid Temperature (F)
TH-103	Rx Heater Rod Temperature (SCTH-101-3)	1000	40	1000	40	Internal Rod Temperature (F)

Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TH-211	Rx Heater Rod Temperature (SCTH-103-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-305	Rx Heater Rod Temperature (SCTH-304-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-309	Rx Heater Rod Temperature (SCTH-102-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-401	Rx Heater Rod Temperature (SCTH-104-4)	1000	40	1000	40	Internal Rod Temperature (F)
TH-507	Rx Heater Rod Temperature (SCTH-314-3)	1000	40	1000	40	Internal Rod Temperature (F)
TH-601	PZR Heater Rod #1	1000	0	1000	0	Internal Rod Temperature (F)
TH-602	PZR Heater Rod #2	1000	0	1000	0	Internal Rod Temperature (F)
TH-603	PZR Heater Rod #3	1000	0	1000	0	Internal Rod Temperature (F)
TH-604	PZR Heater Rod #4	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-1	Core Thermocouple Rod D-001 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-2	Core Thermocouple Rod D-001 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-3	Core Thermocouple Rod D-001 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-4	Core Thermocouple Rod D-001 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-5	Core Thermocouple Rod D-001 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-001-6	Core Thermocouple Rod D-001 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-1	Core Thermocouple Rod D-303 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-2	Core Thermocouple Rod D-303 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-3	Core Thermocouple Rod D-303 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-4	Core Thermocouple Rod D-303 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-5	Core Thermocouple Rod D-303 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-303-6	Core Thermocouple Rod D-303 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-1	Core Thermocouple Rod E-308 at 22.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-2	Core Thermocouple Rod E-308 at 34.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-3	Core Thermocouple Rod E-308 at 46.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-4	Core Thermocouple Rod D-001 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-5	Core Thermocouple Rod D-001 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-308-6	Core Thermocouple Rod D-303 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-1	Core Thermocouple Rod D-313 at 10.50 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-2	Core Thermocouple Rod D-313 at 19.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-3	Core Thermocouple Rod D-313 at 25.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-4	Core Thermocouple Rod D-313 at 31.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-5	Core Thermocouple Rod D-313 at 37.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-313-6	Core Thermocouple Rod D-313 at 43.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-1	Core Thermocouple Rod F-318 at 28.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-2	Core Thermocouple Rod F-318 at 40.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-3	Core Thermocouple Rod F-318 at 51.86 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-4	Core Thermocouple Rod D-303 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-5	Core Thermocouple Rod D-313 at 49.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TR-318-6	Core Thermocouple Rod D-313 at 51.13 inches	1000	0	1000	0	Internal Rod Temperature (F)
TW-104-1.5D-2	CL-4 Downcomer Wall Temperature at 1.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)

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Tag Name	Tag Description	Raw Full Scale	Raw Zero Scale	Eng Full Scale	Eng Zero Scale	Units
TW-104-3.5D-2	CL-4 Downcomer Wall Temperature at 3.5D, 315 degrees	1000	0	1000	0	Wall Temperature (F)
TW-104-3.5D-3	CL-4 Downcomer Wall Temperature at 3.5D, 345 degrees	1000	0	1000	0	Wall Temperature (F)
TW-201	SG-1 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-202	SG-2 Short Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-203	SG-1 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-204	SG-2 Short Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-205	SG-1 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-206	SG-2 Long Tube Bottom Outlet	1000	0	1000	0	Wall Temperature (F)
TW-208	SG-2 Long Tube Bottom Inlet	1000	0	1000	0	Wall Temperature (F)
TW-209	SG-1 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-210	SG-2 Short Tube Top Outlet	1000	0	1000	0	Wall Temperature (F)
TW-601	ADS1-3 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-602	ADS4-2 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-603	ADS4-1 Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
TW-801	PRHR HX Long Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-802	PRHR HX Short Tube Outlet	1000	0	1000	0	Wall Temperature (F)
TW-803	PRHR HX Long Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-804	PRHR HX Short Tube Lower Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-805	PRHR HX Short Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-806	PRHR HX Long Tube Upper Mid-piece	1000	0	1000	0	Wall Temperature (F)
TW-807	PRHR HX Short Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-808	PRHR HX Long Tube Inlet	1000	0	1000	0	Wall Temperature (F)
TW-905	Break Separator Wall Temperature	1000	0	1000	0	Wall Temperature (F)
DASRunning	DSC Engine is running, but not necessarily logging data	N/A	N/A	N/A	N/A	N/A
DASLogging	DSC Engine is logging data to the Citadel database	N/A	N/A	N/A	N/A	N/A
FVM-004	Catch Tank Steam Flow Rate	4.9885	1.001	70	0	Steam Flow Rate (cfm)
PT-004	Temp Steam Pressure for FVM-002	5.0026	1.0016	400	0	Pressure (psig)

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(See instructions on the reverse)

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G. S. Rhee / W. Krotiuk, Project Manager

11. ABSTRACT (200 words or less)

A series of eight tests have been conducted at the Oregon State University Advanced Plant Experiment (APEX) Facility in order to provide data for TRACE code assessment in the area of reflux condensation in U-tube steam generators. The APEX steam generators contain 133 tubes of prototypical diameter but a quarter length of full size steam generator tubes. The data covers the pressure range of 0.37 MPa to 2.19 MPa and the inlet steam flow Reynolds number of 2,000 to 12,000. The overall heat transfer coefficient varies from 544 to 2062 W/(M²-K). The steam condensation rate is found to be the same in both the up-flow side and the down-flow side of the U-tubes. A small amount of nitrogen gas is injected into the steam flows used for two tests. The effect of nitrogen gas on steam condensation is found to be not significant for the test conditions investigated.

12. KEY WORDS/DESCRIPTORS (List words or phrases that will assist researchers in locating the report.)

steam generator tube side condensation, reflux condensation, small break loss-of-coolant-accident (LOCA), non-condensable gas effect on condensation

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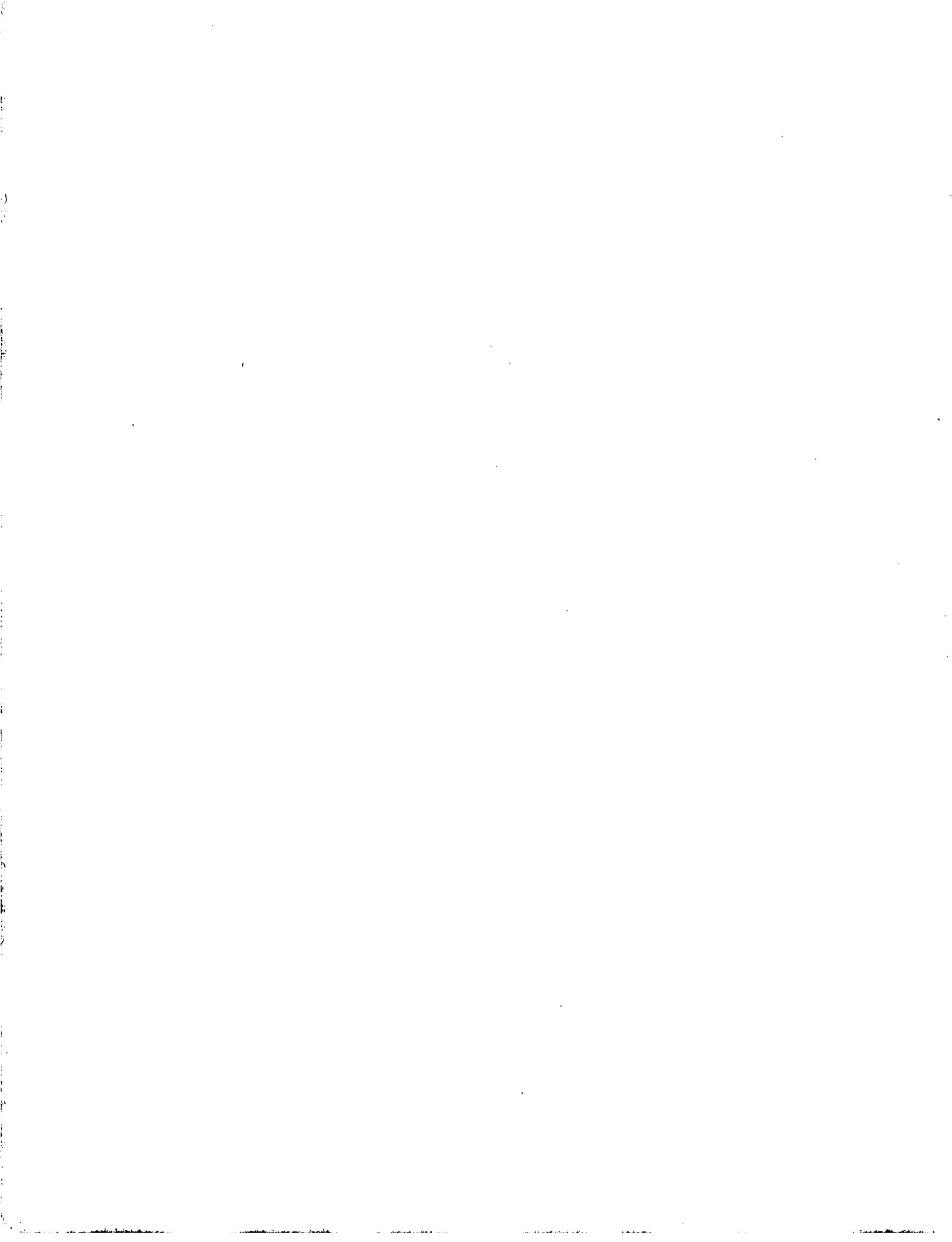
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