VOGTLE ELECTRIC GENERATING PLANT

UNITS 1 & 2

SECOND 10 -YEAR INTERVAL

PUMP INSERVICE TEST PROGRAM

REV	DATE	DESCRIPTION	ITS PREP'D BY	ITS REV'D BY	ITS APPV'D BY	VNMS APPV'D BY
0	12/06/96	INITIAL ISSUE TO VEGP FOR REVIEW & APPROVAL.	DMS	WDM	DMS	TVC

VEGP IST APPROVAL	
IST Engr:	5/6/97
Engr. Supv:	5-7-97
Mgr. Engr:	5-7-97
ANII:	ANII HSB II&I 5-8-97
PRB: Mtg. No: PRB 97-38 Date: 5/13/97	
Gen. Mgr:	5/15/97

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1.0 PUMP IST PROGRAM INTRODUCTION

1.1 GENERAL

This document describes the Pump Inservice Testing (IST) Program for the Vogtle Electric Generating Plant (VEGP), Units 1 and 2. Provided below are important dates relative to the IST Program.

	VEGP-1	VEGP-2
Construction Permit:	06-28-74	06-28-74
Commercial Operation:	05-31-87	05-20-89
1st 10-Year Interval:	05-31-87 to 05-30-97	05-20-89 to 05-30-97*
2nd 10-Year Interval:	05-31-97 to 05-30-2007	05-31-97* to 05-30-2007

* VEGP-2 was updated at the same time as VEGP-1 for the 2nd 10-Year Interval in order to utilize the same Code edition for both units (See Relief Request RR-G-2 which is included in the Valve IST Program document).

The edition of 10 CFR 50.55a current on May 31, 1996, was used to determine the applicable Code(s) of record for this program update. 10 CFR 50.55a identified the ASME Section XI Code, 1989 Edition, as the applicable Code. The 1989 edition of ASME XI references OM Part 6 (IWP) as being applicable for pump testing. 10 CFR 50.55a(b)(2)(viii) references the OMa-1988 Addenda to the OM-1987 Edition of ANSI/ASME part 6 for pump testing.

ASME issued the OM Code-1990 Edition which included requirements for pump, valve, relief valve and dynamic restraint inservice testing, and subsequently issued the OMb-1992 Addenda, the OMc-1994 Addenda, the OM-1995 Edition and the OMa-1996 Addenda. Therefore, the below listed Code version is being utilized for pump IST at VEGP as described in Relief Request RR-G-1. (RR-G-1 is included in the Valve IST Program document.) The NRC approved the use of the ASME OM Code-1990 Edition for pump testing at Plant Vogtle in a letter dated November 27, 1996.

ASME OM Code -1990 Edition Subsections ISTA and ISTB

This program document includes IST requirements for safety-related ASME Code Class 1, 2 and 3 pumps. NRC Generic Letter 89-04 and Supplement 1 (NRC NUREG-1482) were used, to the extent practical, for guidance in the development of this program.

1.2 EFFECTIVE DATE

The Pump IST Program, for the 2nd 10-Year Interval, will become effective on May 31, 1997 and will be utilized through May 30, 2007 unless federal regulations are revised otherwise.

1.3 SCOPE

This document is a description of the Pump IST Program to be implemented for Units 1 and 2 at VEGP. This document describes only the IST surveillance testing applicable to safety-related ASME Code Class 1, 2 and 3 pumps included in the program.

1.4 SUBSEQUENT PROGRAM REVISIONS

It is anticipated that this document will be reviewed again near the end of the 120 month interval and compared to a later NRC approved version of the ASME Code applicable for IST. At that time, the program will be modified, if required, to comply to the extent practical with the later Code edition. Any additional relief requests for impractical requirements will be submitted in accordance with the applicable regulations.

1.5 RESPONSIBILITY

Southern Nuclear Operating Company, being license holder and agent for Georgia Power Company (Owner), bears the overall responsibility for the implementation of the inservice testing activities contained in this program per the ASME OM Code - 1990 Edition, Subsection ISTA 1.4.

1.6 RECORDS

Records and documentation of information and testing results, which provide the basis for evaluation and which facilitate comparison with results from previous and subsequent tests, will be maintained and available for the active life of the component or system in accordance with the ASME OM Code - 1990 Edition, Subsection ISTA 3.

1.7 METHODS OF TESTING

The method of testing applicable to each pump is listed adjacent to the component identification in the Pump IST Program Tables. The ASME OM Code does not stipulate any specific training/certification requirements for personnel involved in pump testing. At Plant Vogtle, all pump testing is performed by operations, maintenance or engineering personnel who have been trained to perform specific testing tasks.

1.8 STANDARDS FOR TESTING EVALUATION

The acceptance criteria applicable for each pump to be tested have been developed in accordance with the ASME OM Code requirements as modified by any applicable relief requests. Acceptance criteria are not provided in the IST Program document, but are provided in the applicable surveillance testing procedures which are available for review at the plant site.

ABBREVIATIONS LIST

Abbreviation	Definition
Acc	Accuracy
AFW	Auxiliary Feedwater
Amp.	Amplitude
ASME	American Society of Mechanical Engineers
atm	Atmospheric
Aux	Auxiliary
Bldg	Building
CC	ASME Code Class
CCW	Component Cooling Water
Coord.	Coordinate
CS	Containment Spray
CVCS	Chemical Volume & Control System
ΔP	Pump Differential Pressure
ΔPr	Reference Differential Pressure
Differ.	Differential
ECCS	Emergency Code Cooling System
ESF	Engineered Safety Feature
F	Fahrenheit
FI	Flowrate Indicator
ft	Feet
Freq.	Frequency
GPC	Georgia Power Company
gpm	Gallons Per Minute
Hz	Hertz
I.D.	Identification
in/s	Inches Per Second
IST	Inservice Testing
kW	Kilowatt
LOCA	Loss Of Coolant Accident
LI	Level Indicator
NA	Not Applicable
N	Speed
No.	Number
NPSH	Net Positive Suction Head
NSCW	Nuclear Service Cooling Water
OM	ASME OM Code
PC	Vogtle Plant Project Class
P&ID	Piping & Instrumentation Diagram
Pi	Pump Inlet Pressure
PI	Pressure Indicator
Po	Pump Outlet Pressure
psig	Pounds Per Square Inch

Abbreviations (cont.)

Abbreviation	Definition
Q	Pump Flowrate
Qtr.	Quarterly
Qr	Reference Flowrate
RCS	Reactor Coolant System
Ref.	Reference
Req.	Required
RHR	Residual Heat Removal
rpm	Revolutions Per Minute
RR	Relief Request
SI	Safety Injection
SI	Speed Indicator
SNC	Southern Nuclear Operating Company
V	Vibration
VEGP	Vogtle Electric Generating Plant
Vib.	Vibration
Vr	Reference Vibration Amplitude

INTRODUCTION

A. Regulatory Position

This document defines the testing requirements for the pumps included for inservice testing (IST) at Southern Nuclear Operating Company's (SNC) Vogtle Electric Generating Plant (VEGP) Unit 1 and 2. This Pump IST Program was developed to comply with the provisions of 10 CFR 50.55a. The Code of record applicable for this program is the ASME OM Code - 1990 Edition. NRC Generic Letter 89-04 and its Supplement 1 (NUREG-1482) were used for guidance, to the extent practical, in the development of this program document.

B. Scope

In accordance with 10 CFR 50.55a and NRC Regulatory Guide 1.26 (water, steam and radioactive waste containing systems), ASME Code Class 1, 2 and 3 safety-related pumps which perform a function required in; 1) shutting the reactor down to the cold shutdown condition, 2) maintaining the cold shutdown condition, 3) or mitigating the consequences of an accident, and are provided with an emergency power source, are included in this program document for inservice testing.

It was recognized that 10 CFR 50, Appendix A, General Design Criteria 1, and Appendix B, Criterion XI, intended that all pumps necessary for safe operation of the plant be tested to demonstrate that they will perform satisfactorily in service. The subject testing is to be performed to a level commensurate with the safety significance of the pump. For those non-ASME Code Class 1, 2 and 3 pumps, this testing is performed in accordance with the plant technical specifications and/or other plant testing programs and is not included in this program document.

The determination as to whether a pump should be included in this testing program was performed by review and evaluation of the Updated Final Safety Analysis Reports (UFSAR) and other design and licensing documents. These documents were reviewed to determine which pumps are required to respond to the design basis accident scenarios and provide a function required to shutdown the reactor, maintain the shutdown condition, or mitigate the consequences of the accident.

C. Testing Requirements

A description of the ASME OM Code testing requirements applicable to pumps is provided in each section. The ASME OM Code-1990 Edition should be used in conjunction with this description to ensure a complete identification of the testing requirements. Subsection ISTB of the ASME OM Code is applicable for pump inservice testing and the applicable ISTB paragraph is listed in parenthesis for cross reference.

1. Definitions (ISTB 1.3)

The below listed definitions are provided for easy reference as they are applicable to VEGP and are used in subsequent sections of this introduction.

inservice test - a test to determine the operational readiness of a pump

instrument accuracy - the allowable inaccuracy of an instrument loop based on the square root of the sum of the square of the inaccuracies of each instrument or component in the loop

instrument loop - two or more instruments or components working together to provide a single output (e.g., a vibration probe and its associated signal conditioning and readout devices)

operational readiness - the ability of a pump to perform its intended function

preservice test period - the period of time after completion of construction activities related to the pump and before first electrical generation by nuclear heat, in which component and system testing take place

pump - a mechanical device used to move liquid

reference values - one or more values of test parameters measured or determined when the equipment is know to be operating acceptably

routine servicing - the performance of planned, preventative maintenance (e.g., replacing or adjusting valves in reciprocating pumps, changing oil, flushing the cooling system, adjusting packing, adding packing rings or mechanical seal maintenance or replacement)

system resistance - the hydraulic resistance to flow in a system

2. Reference Information (ISTB 2)

The hydraulic and mechanical condition of a pump relative to a previous condition can be determined by attempting to duplicate by test a set of reference values. Deviations detected are symptoms of changes and, depending upon the degree of deviation, indicate need for further tests or corrective action.

3. Owner's Responsibility (ISTB 3.1)

Each pump to be tested in accordance with this program shall be identified by the Owner and listed in the plant records.

4. Testing Requirements (ISTB 4)

A. Preservice Testing (ISTB 4.1)

Each pump shall be tested during the preservice test period. These tests shall be conducted under conditions as near as practical to those expected during subsequent inservice testing. Only one preservice test is required for each pump, except when a pump is repaired or replaced (see C.4.D).

B. Inservice Testing (ISTB 4.2)

Inservice testing shall commence when the pump is required to be operable (see C.5.C).

C. Reference Values (ISTB 4.3)

Initial reference values shall be determined from the results of the preservice test or from the results of the first inservice test.

Reference values shall be established at points of operation readily duplicated during subsequent testing.

All subsequent test results shall be compared to these initial reference values or to new reference values as appropriate (see C.4.E).

Reference values shall only be established when the pump is known to be operating acceptably.

If the particular parameter being measured or determined can be significantly influenced by other related conditions, then these conditions shall be analyzed.

D. Effect of Pump Replacement, Repair, and Maintenance on Reference Values (ISTB 4.4)

When a reference value or set of reference values may have been affected by repair, replacement, or routine servicing of a pump, a new reference value or set of reference values shall be established in accordance with C.4.C above (ISTB 4.3), or the previous value(s) reconfirmed by an inservice test run before declaring the pump operable.

Deviations between the previous and new reference value(s) shall be evaluated, and verification that the new reference value(s) represent acceptable pump operation shall be placed in the record of tests.

E. Establishment of Additional Set of Reference Values (ISTB 4.5)

If necessary or desirable, for some reason other than stated in C.4.D above, to establish an additional set of reference values, an inservice test shall be run at the conditions of an existing set of reference values and the results analyzed. If operation is acceptable per C.5.B (ISTB 6.2), then a second test run at new reference conditions shall follow as soon as practical. The results of this test shall establish the additional set of reference values.

Whenever new reference values are established, the reason for doing so shall be documented in the record of tests.

F. Instrumentation (ISTB 4.6)

Instrument accuracy shall be within the limits of the below table (Table ISTB 4.6.1-1). Station instruments meeting these requirements are acceptable.

ACCEPTABLE INSTRUMENT ACCURACY (Table ISTB 4.6.1-1)

Quantity	Percent [Note (1)]
Pressure	± 2%
Flow Rate	± 2%
Speed	± 2%
Vibration	± 5%
Differential Pressure	± 2%

NOTE:

(1) Percent of full scale for individual analog instruments, percent of total loop accuracy for a combination of instruments, or over the calibrated range for digital instruments.

The full-scale range of analog instruments shall not be greater than three times the reference value.

Digital instruments shall be selected such that the reference value does not exceed 70% of the calibrated range of the instrument.

Vibration instruments are excluded from the range requirements stated above. The frequency response range of vibration measuring transducers and their readout system shall be from one-third minimum pump operating speed to at least 1000 Hz.

The Owner shall be responsible for establishing the location of instruments used for inservice testing. The location shall be appropriate for the parameter being measured and the same location shall be used for subsequent tests. Instruments that are position-sensitive shall be either permanently mounted, or provisions shall be made to duplicate their position during each test.

Instruments and instrument loops shall be calibrated in accordance with the Owner's quality assurance program. New or repaired instruments shall be calibrated before test use.

G. Pressure Measurements (ISTB 4.6.2)

Differential pressure across a pump may be determined using a differential pressure gage or a differential pressure transmitter that provides direct measurement of pressure difference, or the difference between pump discharge pressure and pump inlet pressure shall be used.

H. Rotational Speed Measurements (ISTB 4.6.3)

Rotational speed measurements of variable speed pumps shall be measured by a method that meets the instrument accuracy requirements of the above instrument accuracy table (C.4.F).

I. Vibration Measurements (ISTB 4.6.4)

On centrifugal pumps, vibration measurements shall be taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing. Measurement shall also be taken in the axial direction on each accessible pump thrust bearing housing.

On vertical line shaft pumps, measurements shall be taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

If portable vibration instruments are used, the measurement points shall be clearly identified on the pump to permit repeatability in both location and plane.

J. Flow Rate Measurements (ISTB 4.6.5)

Flow rate shall be measured using a rate or quantity meter installed in the pump test circuit. If the meter does not indicate flow rate directly, the record of tests shall include the method used to reduce the data.

5. Testing Methods (ISTB 5)

A. Frequency of Inservice Tests (ISTB 5.1)

An inservice test shall be performed on each pump nominally every 3 months except for pumps that are declared inoperable or are not required to be operable.

B. Test Procedure (ISTB 5.2)

An inservice tests shall be conducted with the pump operating at specified test reference conditions. The test parameters listed in the below tables shall be determined and recorded.

INSERVICE TEST PARAMETERS (Table ISTB 5.2-1)

Quantity	Remarks
Speed, N	If variable speed pump
Differential Pressure, ΔP	Centrifugal pumps, including vertical line shaft pumps
Discharge Pressure, P	Positive displacement pumps
Flow Rate, Q	All pumps
Vibration	
Displacement, Vd	Peak-to-Peak
Velocity, Vv	Peak

The pump shall be operated at nominal motor speed for a constant speed driver or at a speed adjusted to the reference point for variable speed drivers.

The resistance of the system shall be adjusted until the flow rate equals the reference value. The differential pressure shall then be determined and compared to the reference value. Alternately, the flow rate shall be varied until the differential pressure equals the reference value and the flow rate determined and compared to the reference flow rate value.

If system resistance cannot be varied, flow rate and pressure shall be determined and compared to their respective reference values.

Pressure, flow rate, and vibration shall be determined and compared with the corresponding reference values. All deviations from the reference values shall be compared with the acceptance criteria listed below and corrective action shall be taken as specified in Section C.6.

Vibration measurements shall be broad band (unfiltered). Velocity measurements shall be peak and displacement amplitudes shall be peak-to-peak respectfully.

VIBRATION ACCEPTANCE CRITERIA (Table ISTB 5.2-2a)

Pump Type	Pump Speed	Test Parameter	Acceptable Range	Alert Range	Required Action Range
Centrifugal & Vertical Line Shaft (Note 2)	<600 rpm	Vd or Vv	≤2.5Vr	>2.5Vr to 6Vr or >10.5 to 22 mils	>6Vr or >22 mils
Centrifugal & Vertical Line Shaft (Note 2)	≥ 600 rpm	Vv or Vd	≤2.5Vr	>2.5Vr to 6Vr or >0.325 to 0.7 in/sec	>6Vr or >0.7 in/sec
Reciprocating		Vd or Vr	≤2.5Vr	>2.5Vr to 6Vr	>6Vr

NOTES:
(1) Vr is reference vibration value in selected units.
(2) Refer to OM Code Figure ISTB 5.2-1 to establish displacement limits for pumps with speeds ≥ 600 rpm or velocity limits for pumps with speeds ≤ 600 rpm.

HYDRAULIC ACCEPTANCE CRITERIA (Table ISTB 5.2-2b)

Test Parameter	Acceptable Range	Alert Range	Required Action Range Low	Required Action Range High
P (Positive Displacement Pumps)	0.93 to 1.10Pr	0.90 to <0.93Pr	<0.90Pr	>1.10Pr
ΔP (Vertical Line Shaft Pumps)	0.95 to 1.10ΔPr	0.93 to <0.95ΔPr	<0.93ΔPr	>1.10ΔPr
Q (Positive Displacement and Vertical Line Shaft Pumps)	0.95 to 1.10Qr	0.93 to <0.95Qr	<0.93Qr	>1.10Qr
ΔP (Centrifugal Pumps)	0.90 to 1.10ΔPr	none	<0.90ΔPr	>1.10ΔPr
Q (Centrifugal Pumps)	0.90 to 1.10Qr	none	<0.90Qr	>1.10Qr

C. Pumps In Systems Out of Service (ISTB 5.4)

For a pump in a system declared inoperable or not required to be operable, the test schedule need not be followed. However, within 3 months before the system is placed in an operable status, the pump shall be tested. Pumps that can only be tested during plant operation shall be tested within 1 week following startup.

D. Duration of Tests (ISTB 5.6)

After pump conditions are as stable as the system permits, each pump shall be run for at least 2 minutes prior to measuring any of the required test parameters.

6. Analysis and Evaluation (ISTB 6)

A. Acceptance Criteria (ISTB 6.1)

If the measured test parameter values fall within the alert range of the applicable table (see C.5 above), the frequency of testing shall be doubled until the cause of the deviation is determined and the condition is corrected.

If the measured test parameter values fall within the required action range of the applicable table (see C.5 above), the pump shall be declared inoperable until either the cause of the deviation has been determined and the condition corrected. (See Relief Request RR-P-2)

When a test shows measured parameter values that fall outside the acceptable ranges that have resulted from an identified system error (e.g. improper system lineup, inaccurate instruments) the test shall be rerun after correcting the error.

B. Time Allowed for Analysis of Tests (ISTB 6.2)

All test data shall be analyzed within 96 hours after completion of test.

7. Records and Reports (ISTB 7)

A. Pump Records (ISTB 7.1)

The Owner shall maintain a record, for each pump included in the program, that includes the following information:

(a) the manufacturer and the manufacturer's model and serial number or other identification number;
(b) a copy or summary of the manufacturer's acceptance test report if available; and
(c) a copy of the pump manufacturer's operating limits.

B. Inservice Test Plans (ISTB 7.2)

The Owner shall maintain a record of test plans and procedures that shall include the following:

(a) the hydraulic circuit to be used;
(b) the location and type of measurements for the required test parameters;
(c) the reference values; and
(d) the method of determining test parameter values that are not directly measured by instrumentation.

This Pump IST Program document in conjunction with the pump surveillance test procedures satisfy the above requirement.

C. Record of Tests (ISTB 7.3)

The Owner shall maintain a record of each test that shall include the following:

(a) pump identification;
(b) date of test;
(c) reason for test (e.g. post-maintenance, routine inservice test, or establishing new reference values);
(d) values of measured parameters;
(e) identification of instruments used;
(f) comparisons with allowable ranges of test values and analysis of deviations;
(g) requirements for corrective action;
(h) evaluation and justification for changes to reference values; and
(I) signature of the person(s) responsible for conducting and analyzing the test data.

This Pump IST Program document in conjunction with the pump surveillance test procedures satisfy the above requirement.

D. Record of Corrective Action (ISTB 7.4)

The Owner shall maintain records of corrective action that shall include a summary of the corrections made, the subsequent inservice tests and confirmation of operational adequacy, and the signature of the individual(s) responsible for corrective action and verification of results.

VEGP-1 PUMP TEST TABLE

Nuclear Service Cooling Water - System 1202

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency Po (psig)	ΔP (psi)	Q (gpm)	V (ft/sec)	N (rpm)	RR/Remarks
1-1202-P4-001	3/313	1X4D[illegible]33-1	C-8	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1202-P4-002	3/313	1X4DB133-2	C-8	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1202-P4-003	3/313	1X4DB133-1	C-5	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1202-P4-004	3/313	1X4DB133-2	C-5	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1202-P4-005	3/313	1X4DB133-1	C-7	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1202-P4-006	3/313	1X4DB133-2	C-7	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1202-P4-007	3/313	1X4DB133-1	C-6	NSCW Transfer Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1202-P4-008	3/313	1X4DB133-2	C-6	NSCW Transfer Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-1 PUMP TEST TABLE

Component Cooling Water - System 1203

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	RR/Remarks
1-1203-P4-001	3/313	1X4DB136	H-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1203-P4-002	3/313	1X4DB136	D-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1203-P4-003	3/313	1X4DB136	G-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1203-P4-004	3/313	1X4DB136	C-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1203-P4-005	3/313	1X4DB136	F-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1203-P4-006	3/313	1X4DB136	B-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-1 PUMP TEST TABLE

Safety Injection - System 1204

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency					RR/Remarks
					Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	
1-1204-P6-003	2/212	1X4DB121	E-2	SI Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1204-P6-004	2/212	1X4DB121	C-2	SI Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-1 PUMP TEST TABLE

Residual Heat Removal - System 1205

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency					RR/Remarks
					Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	
1-1205-P6-001	2/212	1X4DB122	F-4	RHR Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1205-P6-002	2/212	1X4DB122	G-4	RHR Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-1 PUMP TEST TABLE

Containment Spray - System 1206

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency Po (psig)	ΔP (psi)	Q (gpm)	V (ft/sec)	N (rpm)	RR/Remarks
1-1206-P6-001	2/212	1X4DB131	G-4	CS Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1206-P6-002	2/212	1X4DB131	C-4	CS Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-1 PUMP TEST TABLE

Chemical & Volume Control - System 1208

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency					RR/Remarks
					Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	
1-1208-P6-002	2/212	1X4DB116-2	G-4	CVCS - Centrifugal Charging Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1208-P6-003	2/212	1X4DB116-2	C-4	CVCS - Centrifugal Charging Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1208-P6-006	3/313	1X4DB118	D-4	CVCS - Boric Acid Transfer Pump	QTR	QTR	QTR	QTR	NA	RR-P-1, RR-P-2
1-1208-P6-007	3/313	1X4DB118	B-4	CVCS - Boric Acid Transfer Pump	QTR	QTR	QTR	QTR	NA	RR-P-1, RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-1 PUMP TEST TABLE

Auxiliary Feedwater - System 1302

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency Po (psig)	ΔP (psi)	Q (gpm)	V (ft/sec)	N (rpm)	RR/Remarks
1-1302-P4-001	3/313	1X4DB161-2	F-6	AFW Pump Turbine Driven	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1302-P4-002	3/313	1X4DB161-2	D-6	AFW Pump Motor Driven	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1302-P4-003	3/313	1X4DB161-2	B-6	AFW Pump Motor Driven	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-1 PUMP TEST TABLE

Safety Related (ESF) Chillers - System 1592

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency					RR/Remarks
					Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	
1-1592-P7-001	3/313	1X4DB221	F-5	ESF Chilled Water Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
1-1592-P7-002	3/313	1X4DB221	C-5	ESF Chilled Water Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

NSCW Pumps
(1-1202-P4-001, 002, 003, 004, 005, & 006)

System Function	Provide cooling water for the containment coolers, control building essential chiller condensers, various engineered safety feature pump motor and lube oil coolers, and the component cooling water and auxiliary component cooling water diesel generator jacket water heat exchangers and transfers the heat removed to the ultimate heat sink.
Quantity	6
Type	Vertical Line Shaft, 2 stage, self lubricated
Manufacturer/Model	Bingham-Willamette/18x27B VCM
Rated Capacity	8600 gpm (each)
Rated Total Dynamic Head	230 feet
Driver	
Type	Electric Motor
Horsepower	700
Speed	1180 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	1X4AF02-32
Instruction Book	1X4AF02-93
Physical Location	NSCW Pump House
P&ID	1X4DB133-1, -2
Surveillance Procedure	14802-1
Pump Test Loop Diagrams	ISI-D-201 through ISI-D-206
Test Parameter Sheets	Page 5-3 through 5-8

NSCW Transfer Pumps
(1-1202-P4-007, 008)

System Function	Provides capability to transfer water between cooling tower basins.
Quantity	2
Type	Vertical Line Shaft, 2 stage, self lubricated
Manufacturer/Model	Bingham-Willamette/18x12A VCM
Rated Capacity	600 gpm (each)
Rated Total Dynamic Head	110 feet
Driver	
Type	Electric Motor
Horsepower	30
Speed	1765 rpm
Power Supply	480V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	1X4AF02-3
Instruction Book	1X4AF02-95
Physical Location	NSCW Pump House
P&ID	1X4DB133-1, -2
Surveillance Procedure	14801-1
Pump Test Loop Diagrams	ISI-D-207 and ISI-D-208
Test Parameter Sheet	Page 5-9 and 5-10

Test Parameter Table - Pump 1-1202-P4-001
(Figure ISI-D-201)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1606	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2148	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11760	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 1-1202-P4-002
(Figure ISI-D-202)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1607	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2149	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11763	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 1-1202-P4-003
(Figure ISI-D-203)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1606	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2152	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11762	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 1-1202-P4-004
(Figure ISI-D-204)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1607	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2153	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11765	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 1-1202-P4-005
(Figure ISI-D-205)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1606	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2150	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11761	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 1-1202-P4-006
(Figure ISI-D-206)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1607	NA	(1)	NA	NA.	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2151	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11764	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 1-1202-P4-007
(Figure ISI-D-207)

Parameter	Test Freq	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	
		I.D. No.(4)	Range	Req. Acc.	Value	Range	Range	Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1606	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-8895	0-60 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-2156	0-1000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

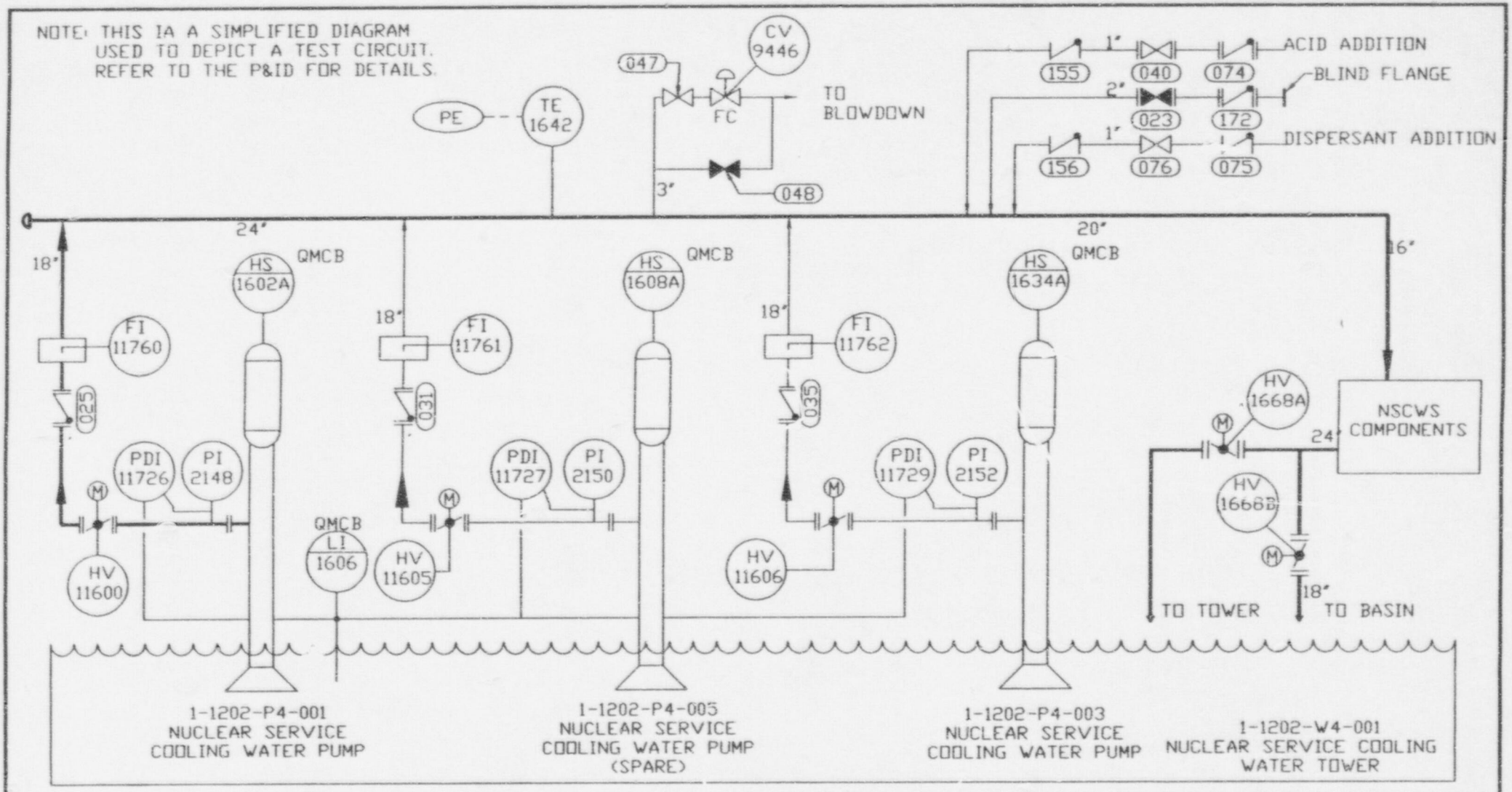
1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 1-1202-P4-008
(Figure ISI-D-208)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1607	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-8894	0-60 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-2157	0-1000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	CSB	CVD	UPDATE TO REV 16 OF 1X4DB133-1	JJC				
2	12-2-96	JVB		REDRAWN IN ACAD13	DMS				

REMARKS

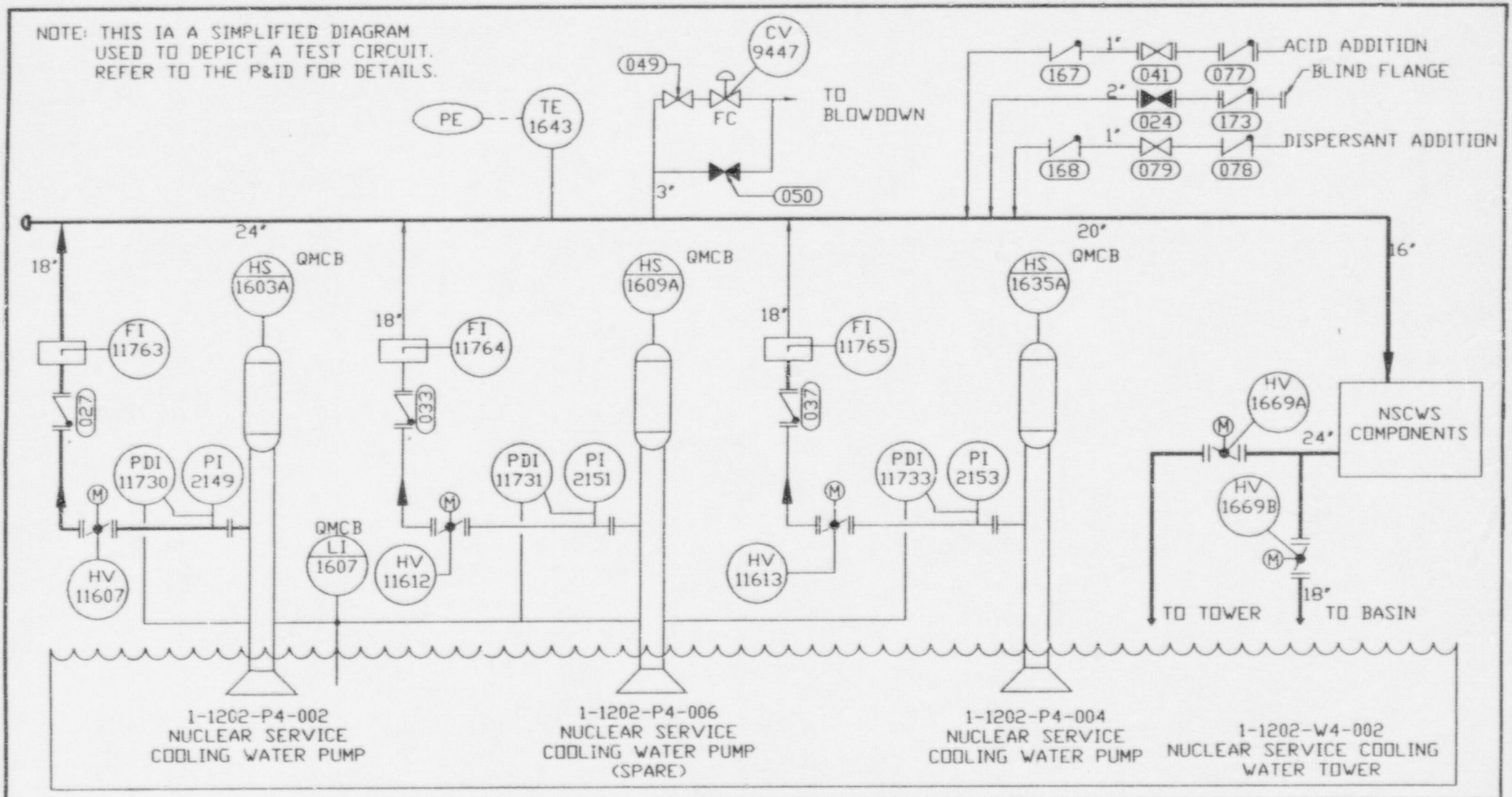
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1

PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 1-1202-P4-001

DESIGNED FT DRAWN BPC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 201	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	CSB	CWB	UPDATE TO REV 18 OF 1X4DB133-2	JJC				
2	12-2-96	JWB		REDRAWN IN ACAD13	DMS				

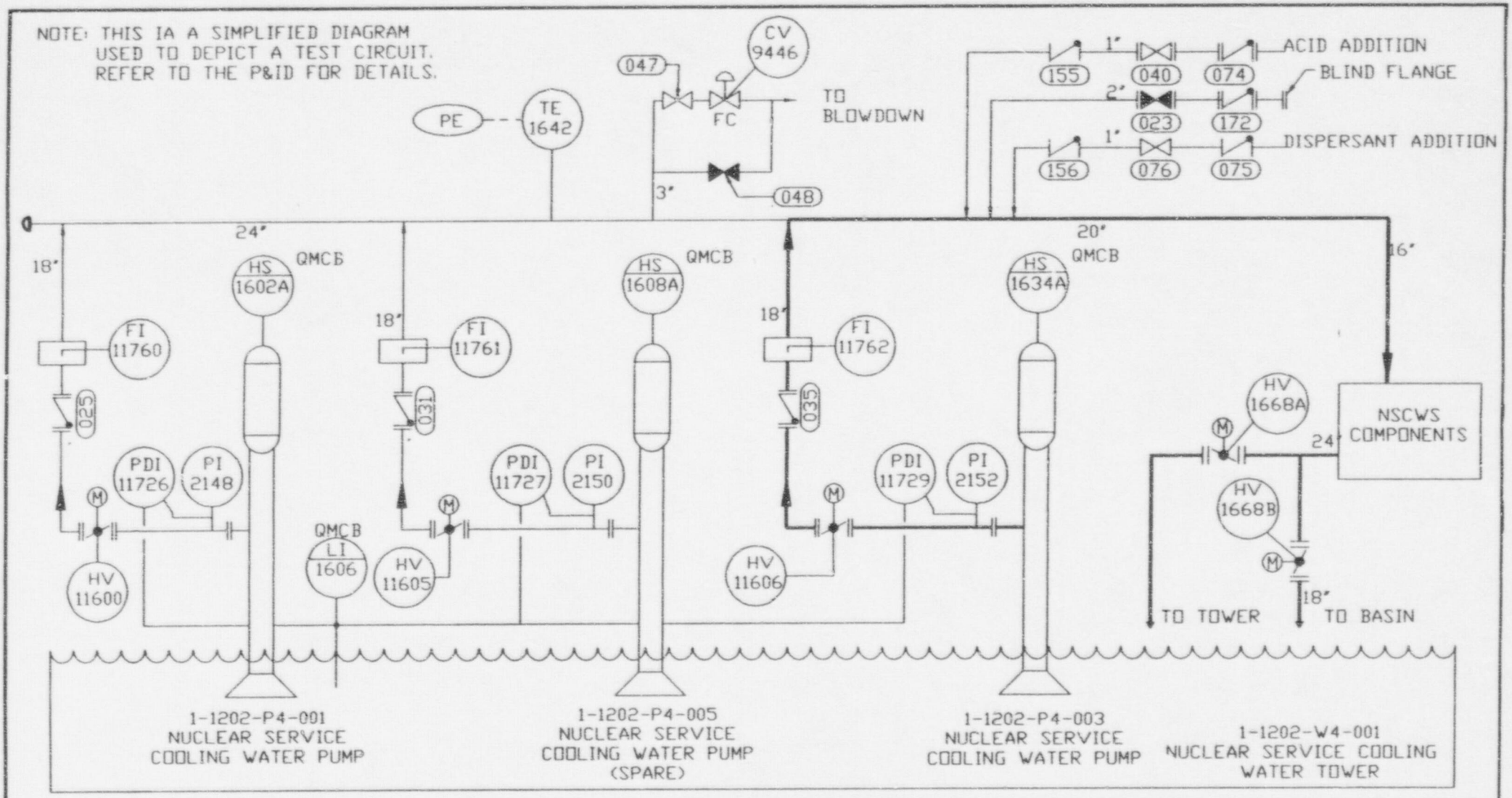
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 1-1202-P4-002

DESIGNED FT DRAWN BRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 202	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
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1	7-24-86	CSB	CVD	UPDATE TO REV 16 OF 1X0D0133-1	JJC				
2	12-2-96	JVB		REDRAWN IN ACAD13	DWS				

REMARKS

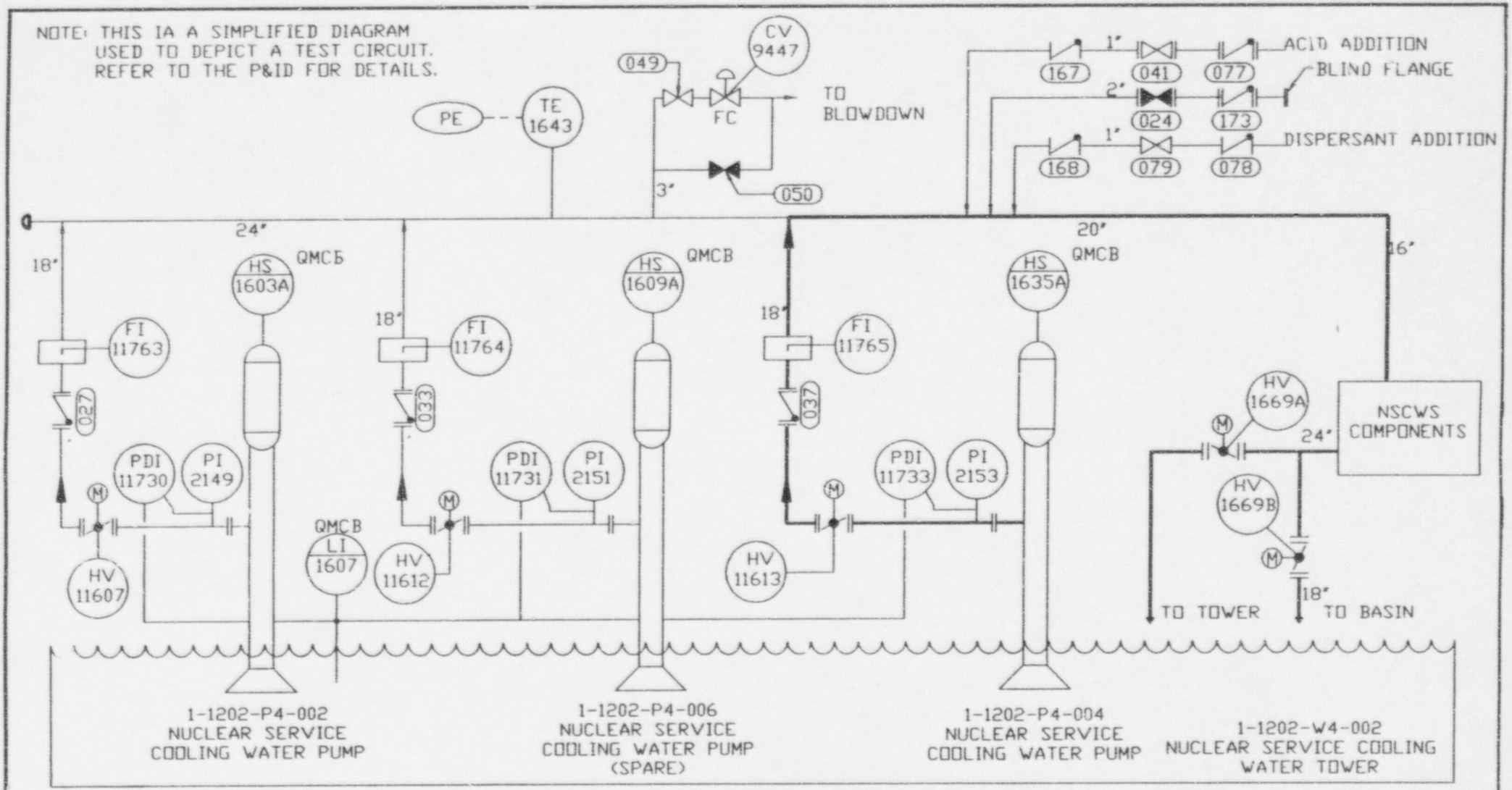
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1

PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 1-1202-P4-003

DESIGNED	FT	DRAWN	BRC
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 203	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
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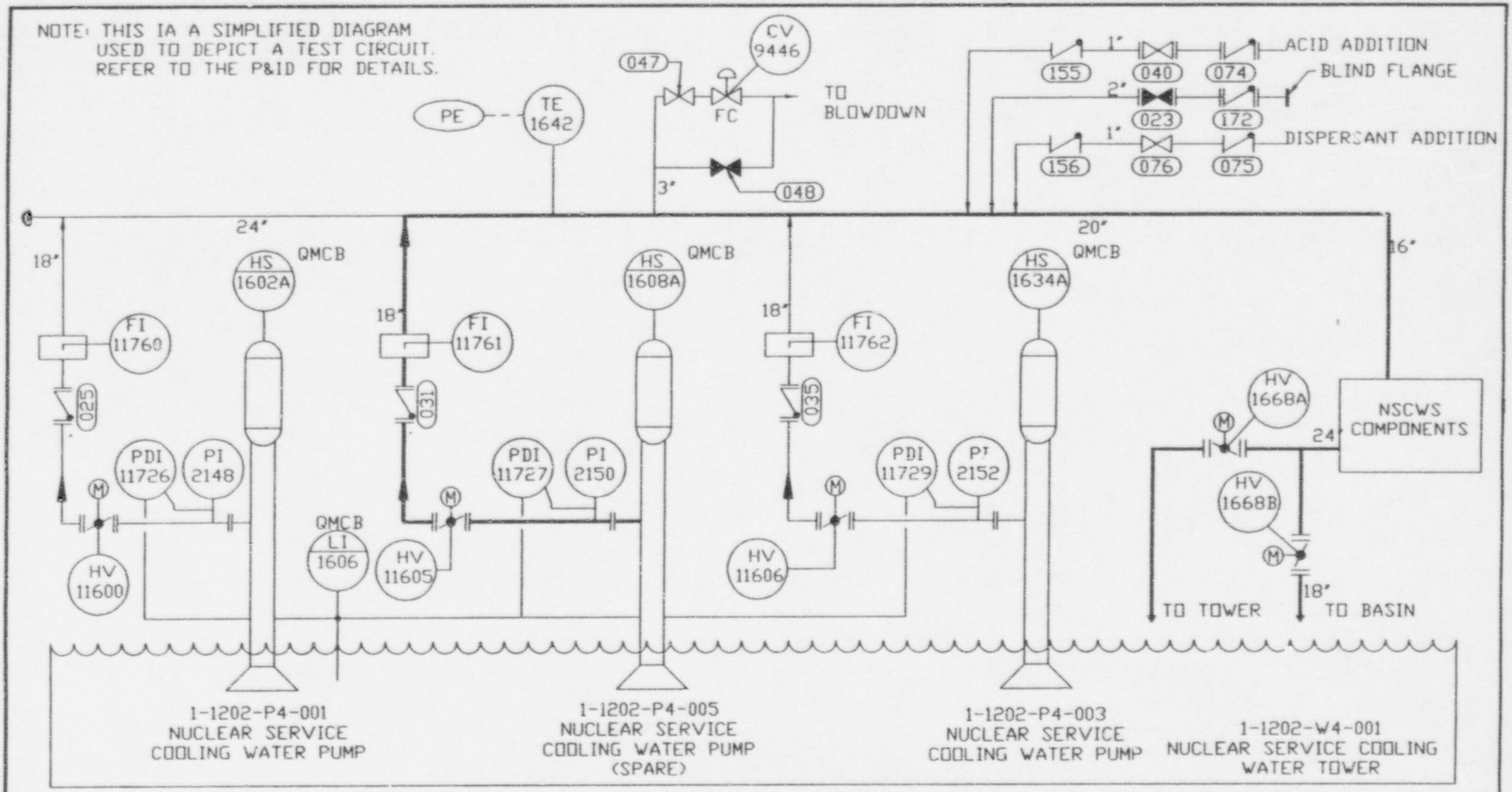
1	7-24-86	CSB	CVD	UPDATE TO REV 10 OF 1X4D8133-2	JJC				
2	12-2-96	JVB		REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP FOR NUCLEAR SERVICE COOLING WATER PUMP 1-1202-P4-004

DESIGNED	FT	DRAWN	DRC	
TYPED		CHECKED	VS	
SCALE	NONE	CONTINUED ON SHEET		
PROJ.I.D.		DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 204	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	VS	ISSUED FOR PST	FT				
1	7-24-86	CSB	CWD	UPDATE TO REV 16 OF 1X4DB133-1	JJC				
2	12-2-96	JVB		REDRAWN IN ACAD13	DMS				

REMARKS

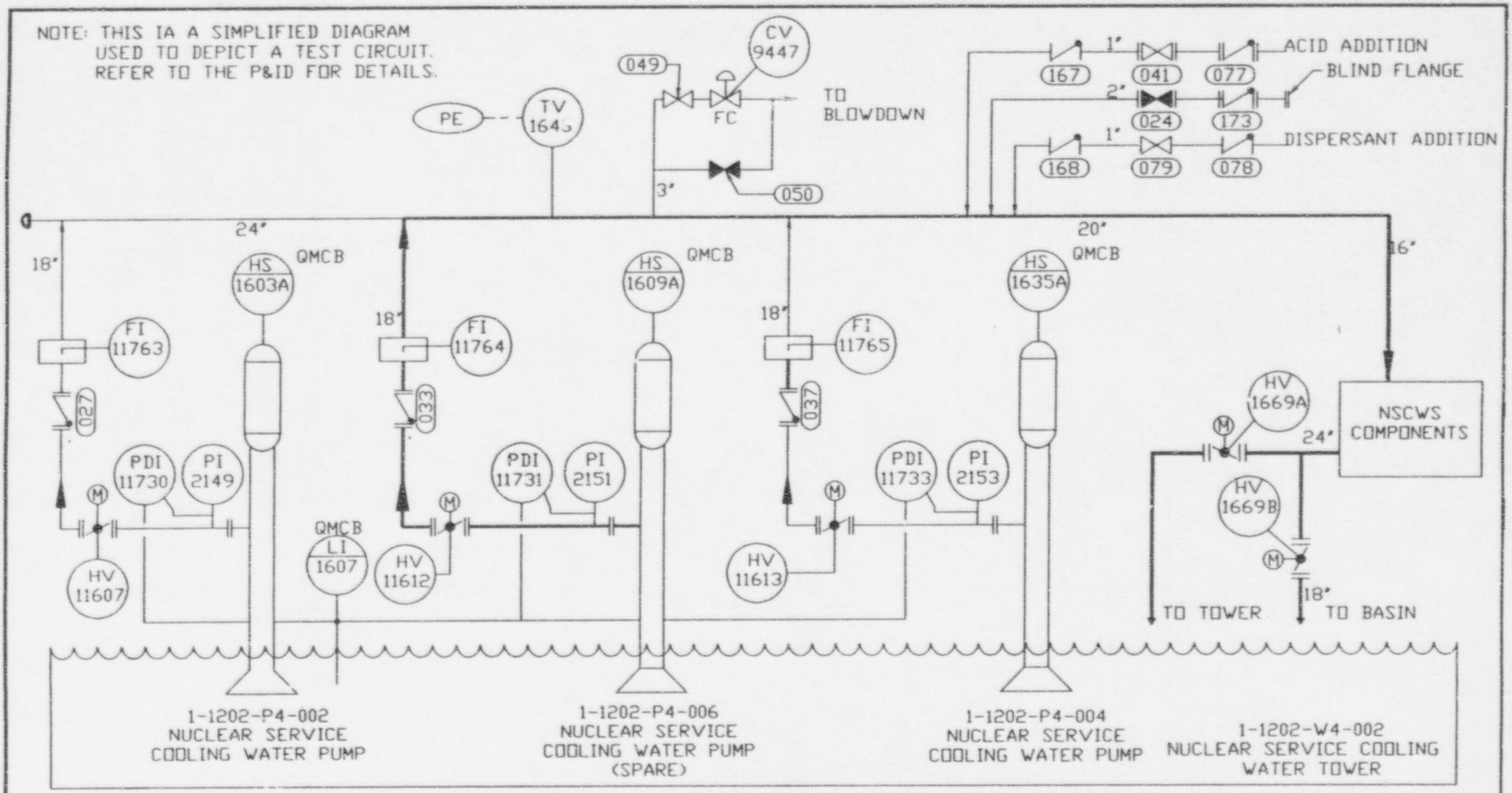
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1

PUMP INSERVICE TESTING LOOP FOR NUCLEAR SERVICE COOLING WATER PUMP 1-1202-P4-005

DESIGNED FT DRAWN DRC
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 205	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	CSB	CVD	UPDATE TO REV 10 OF 1X4DB133-2	JJC				
2	12-2-96	JVB		REDRAWN IN ACAD13	DWS				

REMARKS

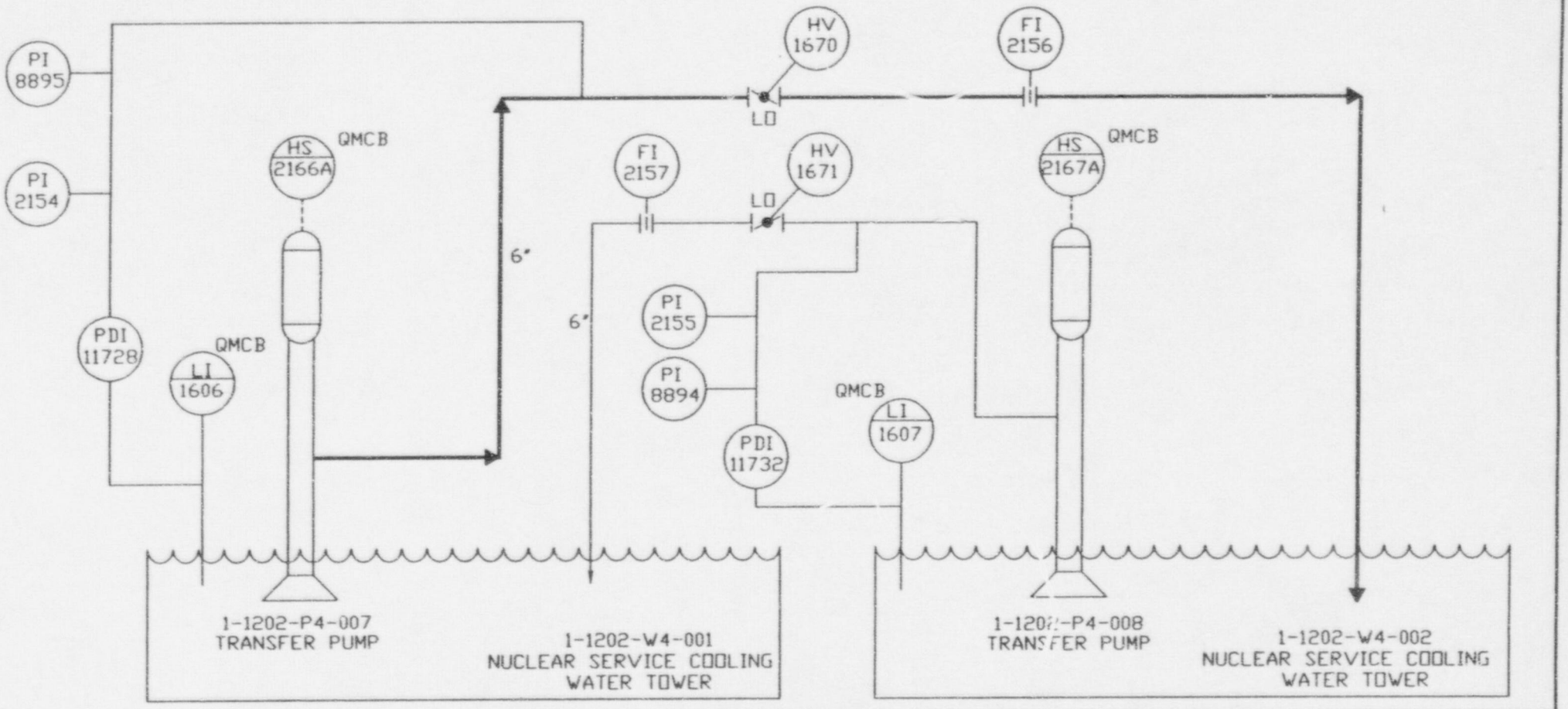
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 1-1202-P4-006

DESIGNED FT DRAWN BRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 206	1 OF 1	2

NOTE: THIS IS A SIMPLIFIED DIAGRAM
USED TO DEPICT A TEST CIRCUIT.
REFER TO P&ID FOR DETAILS



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	CSB	CWB	UPDATE TO 1X4DB133-1 REV 16 AND 1X4DB133-2 REV. 18	JJC				
2	6-14-88	CSB	WS	ADDED PI 8894, 8895	WLW	MB			
3	12-2-96	JWB		REDRAWN IN ACAD13	DWS				

REMARKS

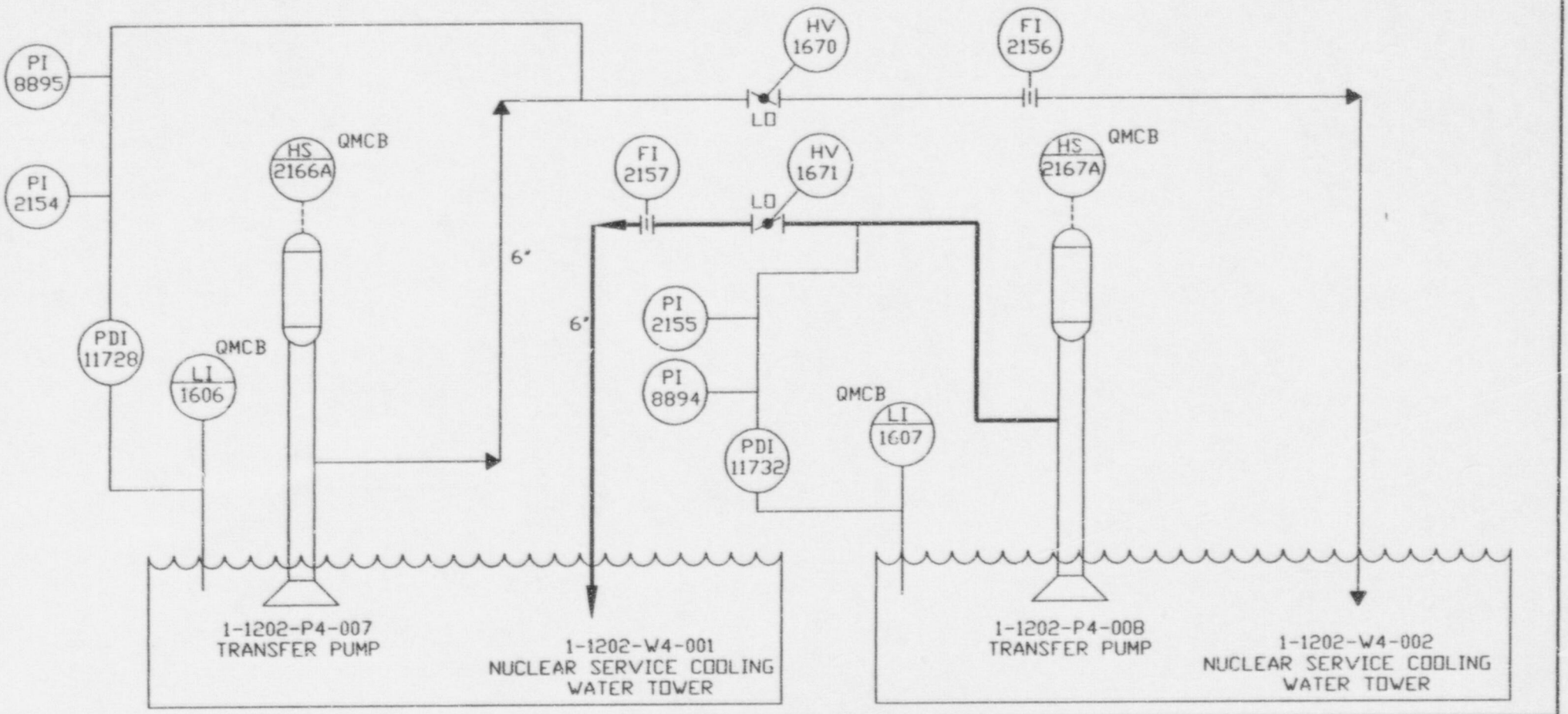
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE INSPECTION LOOP
FOR TRANSFER PUMP
1-1202-P4-007

DESIGNED FT DRAWN DRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 207	1 OF 1	3

NOTE: THIS IS A SIMPLIFIED DIAGRAM USED TO DEPICT A TEST CIRCUIT. REFER TO P&ID FOR DETAILS



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	CSB	CWD	UPDATE TO 1X4DB133-1 REV 16 AND 1X4DB133-2 REV. 18	JJC				
2	6-14-88	CSB	WS	ADDED PI 8894, 8895, CHANGED PI 2155 TO 2154	WLW	MB			
3	12-2-96	JVB		REDRAWN IN ACAD13	DWS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE INSPECTION LOOP
FOR TRANSFER PUMP
1-1202-P4-008

DESIGNED FT		DRAWN DRC	
TYPED		CHECKED WS	
SCALE NONE		CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 208	1 OF 1	3

CCW Pumps
(1-1203-P4-001, 002, 003, 004, 005, & 006)

System Function	Remove waste heat from the spent fuel pool heat exchangers, RHR heat exchangers and the RHR pump seal coolers during plant operation, plant cooldown and during a postulated post-accident condition. This heat energy is then transferred by the component cooling water heat exchangers to the NSCWS. The CCWS functions as an intermediate system between a radioactive fluid system and the non-radioactive NSCWS, which operates at a higher system pressure. This arrangement greatly reduces the probability of radioactive fluid leakage to the enviroment by means of the NSCWS.
Quantity	6
Type	Horizontal, centrifugal, single-stage, split volute with mechanical seals
Manufacturer/Model	Ingersoll-Rand/10x18 SE
Rated Capacity	5000 gpm (each)
Rated Total Dynamic Head	160 feet
Driver	
Type	Electric Motor, Westinghouse, LAC-LLD, 5008-S
Horsepower	300
Speed	1761 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	1X4AF01-67 & 1X4AF01-70
Instruction Book	X4AF01-136
Physical Location	Aux Bldg, Level A, Rooms R-A03 & R-A05
P&ID	1X4DB136
Surveillance Procedure	14803-1
Pump Test Loop Diagrams	ISI-D-209 through ISI-D-214
Test Parameter Sheets	Page 6-2 through 6-7

Test Parameter Table - Pump 1-1203-P4-091
(Figure ISI-D-209)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1878	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1858	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11794	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1203-P4-002
(Figure ISI-D-210)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1881	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1859	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11795	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1203-P4-003
(Figure ISI-D-211)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1879	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1860	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11796	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1203-P4-004
(Figure ISI-D-212)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr BC(2)	PI-1882	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1861	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11797	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1203-P4-005
(Figure ISI-D-213)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1880	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1862	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11798	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

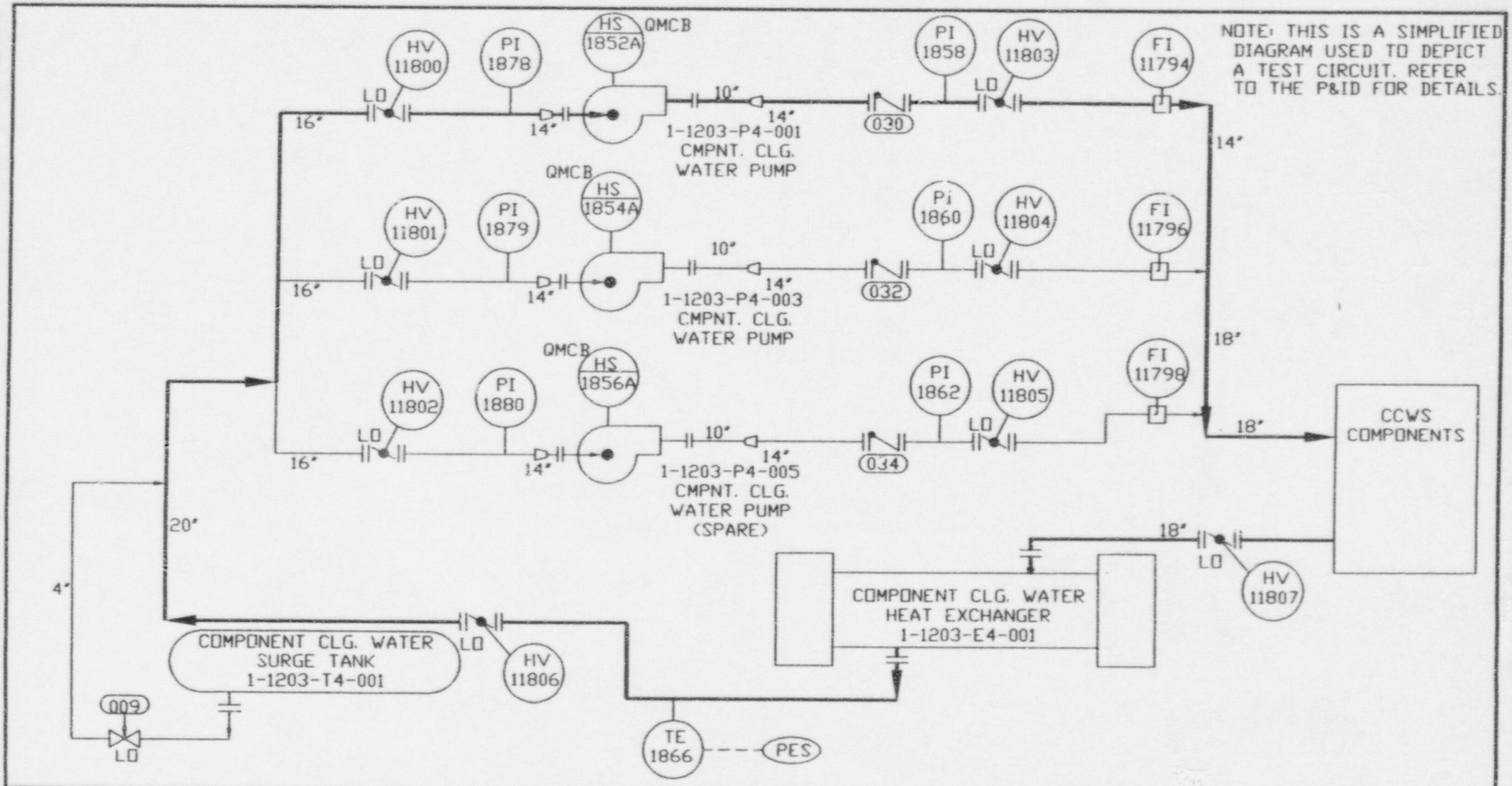
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1203-P4-006
(Figure ISI-D-214)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1883	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1863	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11799	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(5)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-21-04	BGS	WS	ISSUED FOR PST	FT				
1	7-24-06	CSB	CWB	UPDATED TO 1X4BB136 REV 19	JJC				
2	12-2-96	JWB	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

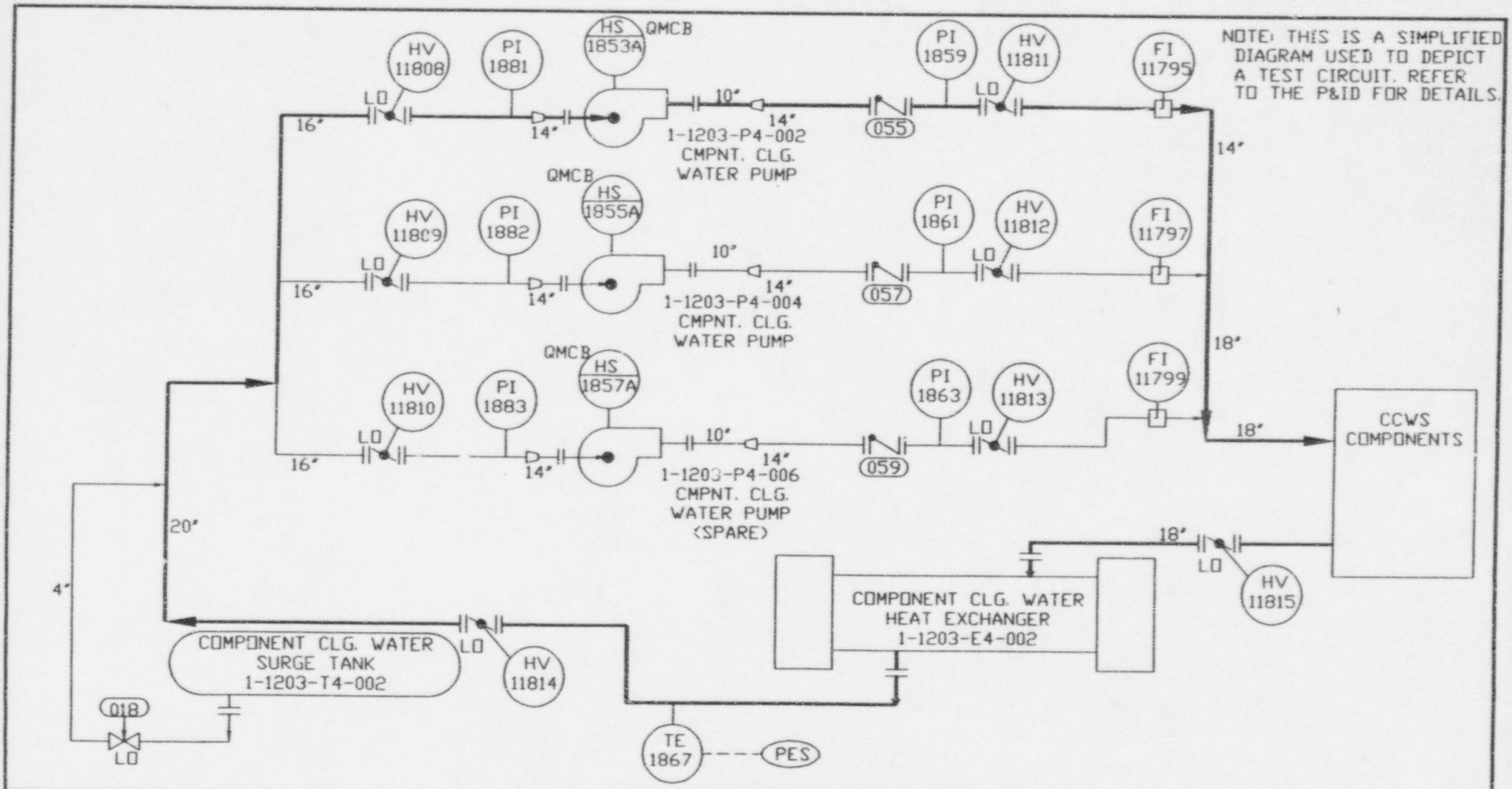
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1

PUMP INSERVICE TESTING LOOP FOR
COMPONENT COOLING WATER PUMP
1-1203-P4-001

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 209	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	CSB	CVD	UPDATED TO 1X4DB136 REV 19	JJC				
2	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

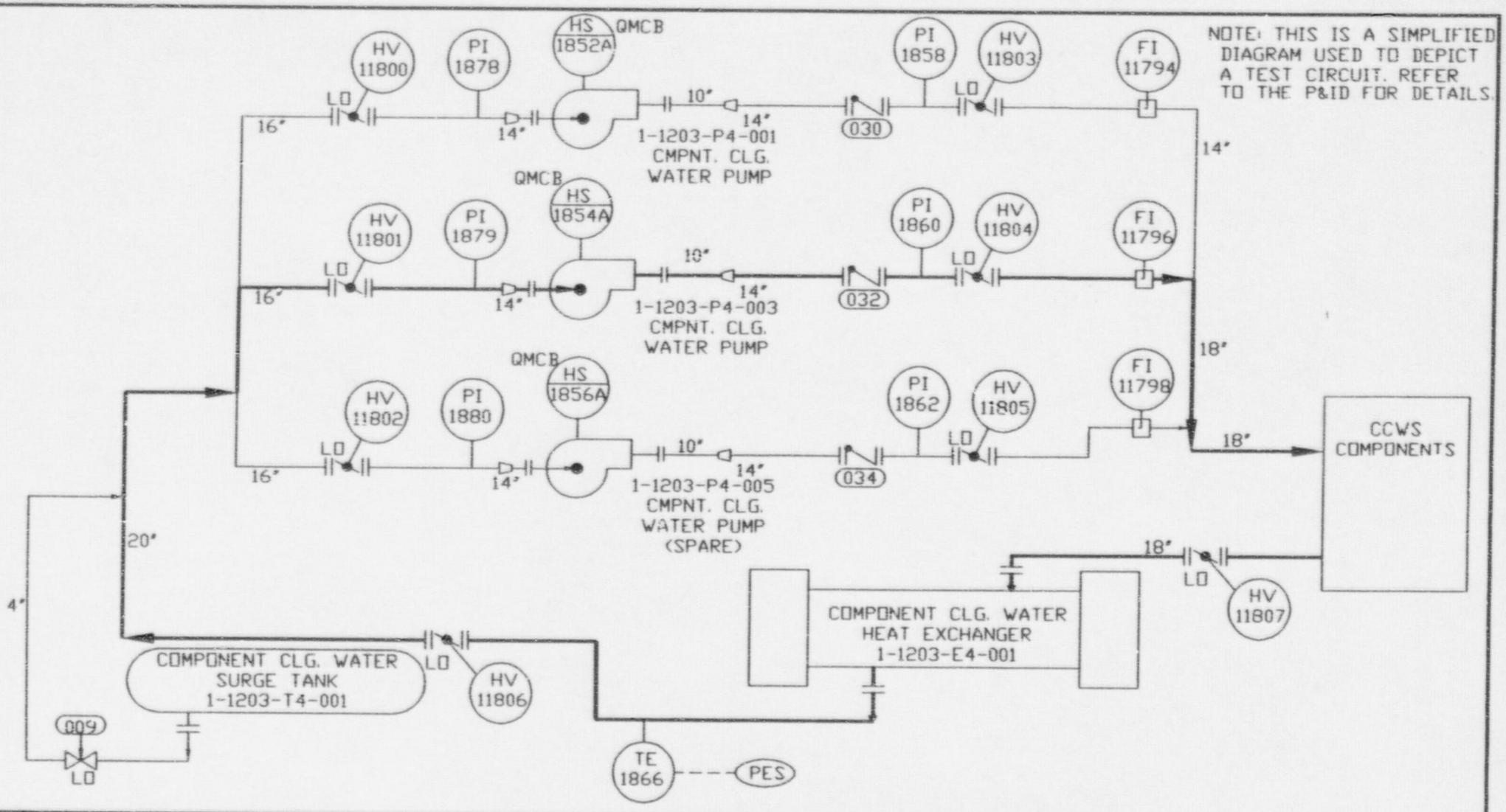
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1

PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP
1-1203-P4-002

DESIGNED	FT	DRAWN	BRC
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 210	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-91	BGS	VS	ISSUED FOR PST	FT				
1	7-24-96	CSB	CVB	UPDATED TO 1X4DB136 REV 19	JJC				
2	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

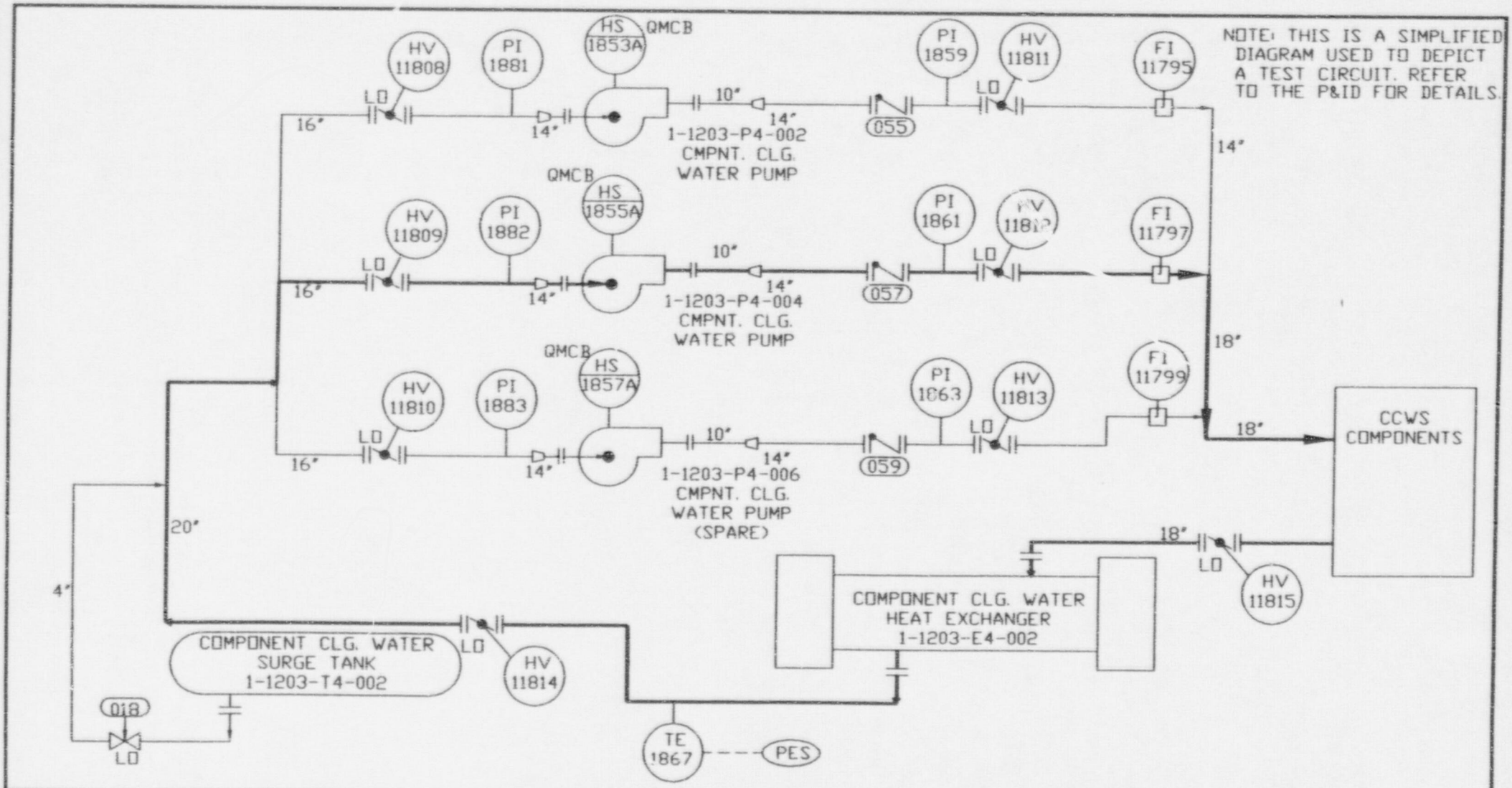
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP
1-1203-P4-003

DESIGNED FT DRAWN DRC
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 211	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	VS	ISSUED FOR PST	FT				
1	7-24-86	CSB	CVD	UPDATED TO 1X4DB136 REV 19	JJC				
2	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

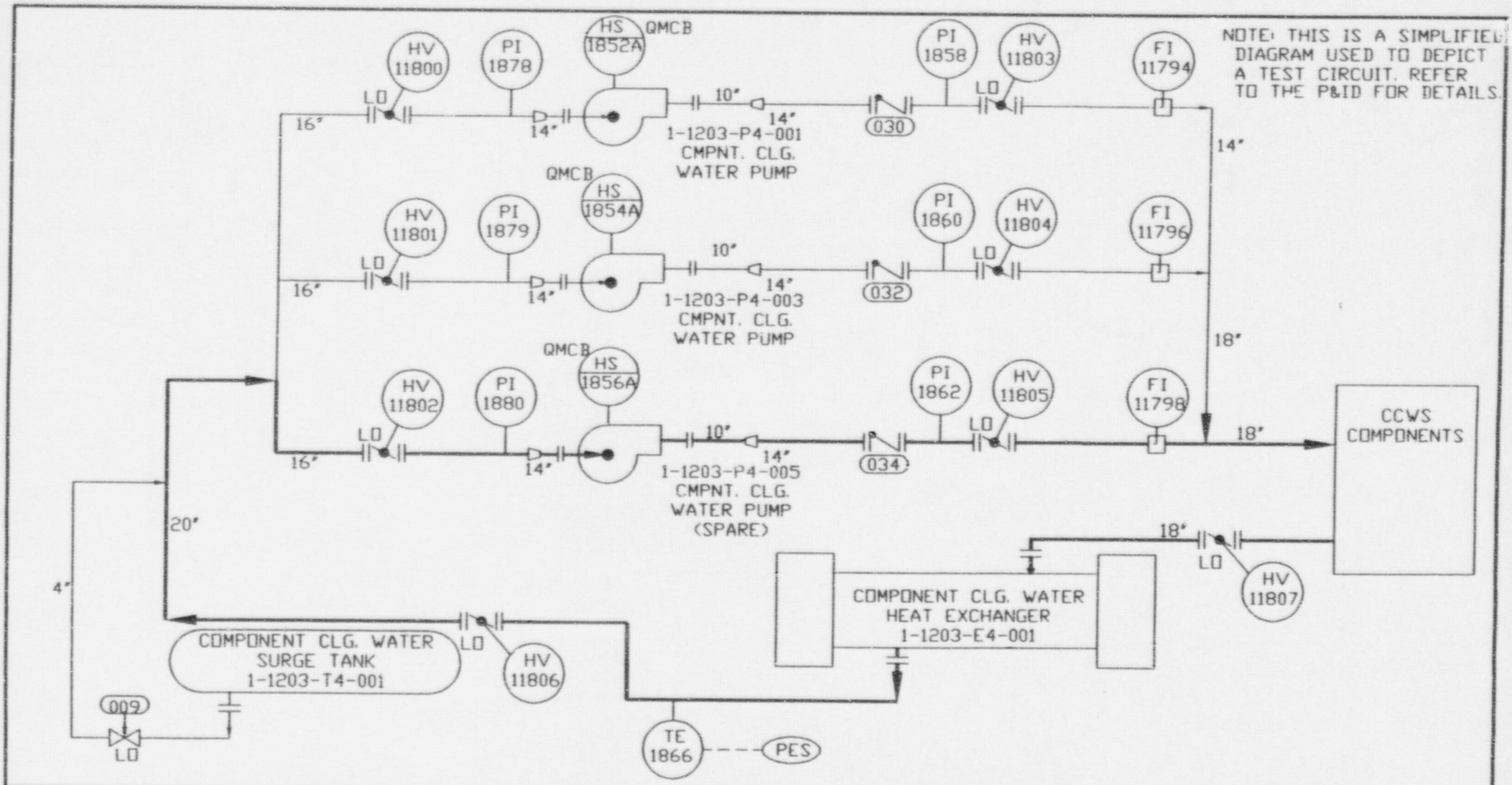
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1

PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP
1-1203-P4-004

DESIGNED FT DRAWN DRC
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 212	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CVD	UPDATED TO IX4B136 REV 19	JJC				
2	12-2-96	JVB	QWS	REDRAWN IN ACAD13	QWS				

REMARKS

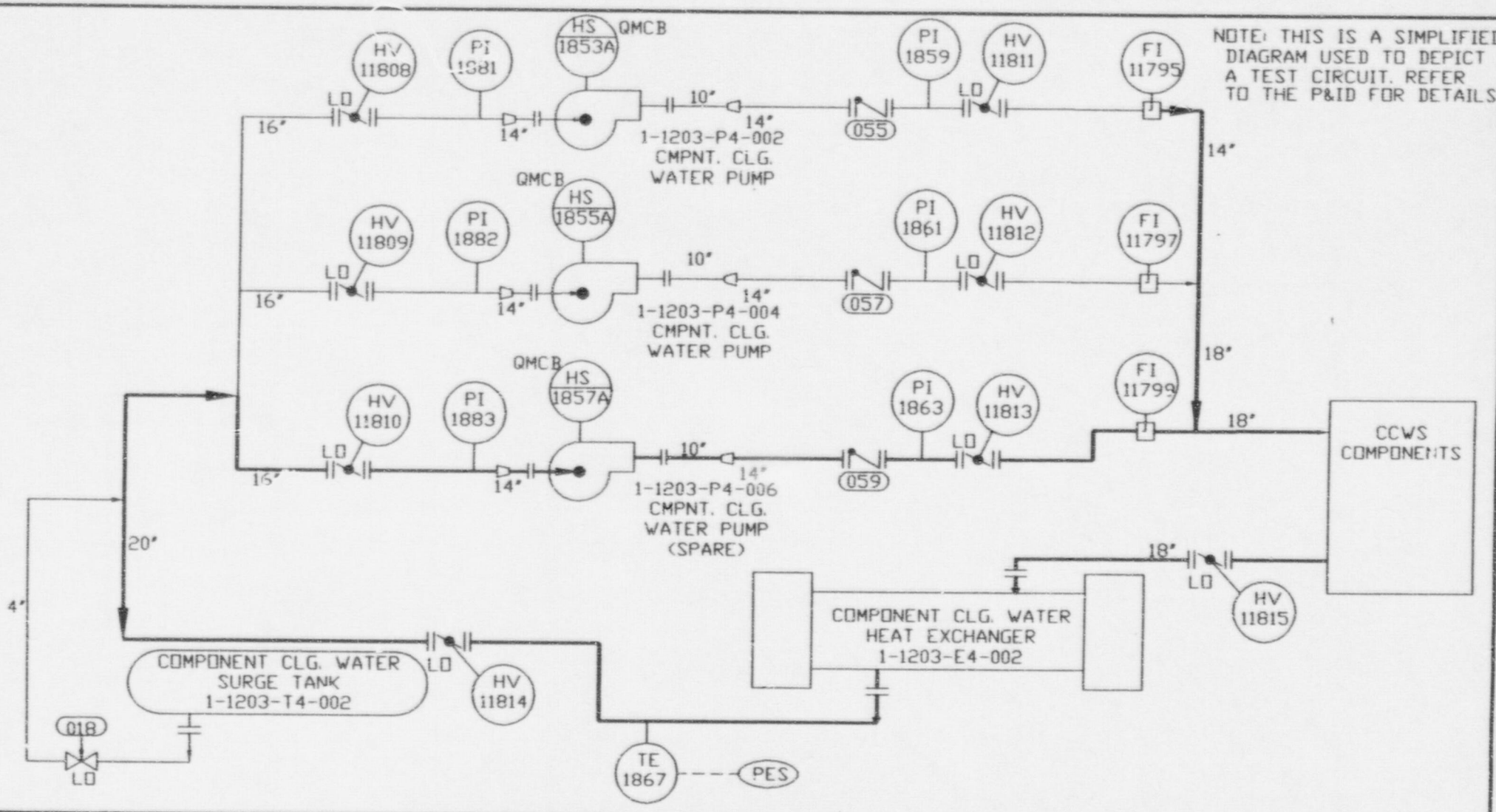
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1

PUMP INSERVICE TESTING LOOP FOR
COMPONENT COOLING WATER PUMP
1-1203-P4-005

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 213	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-24-84	BGS	VS	ISSUED FOR PST	FT				
1	7-24-86	RHS	CVS	UPDATED TO IX4DN136 REV 13	JJC				
2	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

REMARKS:

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP
1-1203-P4-006

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	VS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 214	1 OF 1	2

SI Pumps
(1-1204-P6-003, & 004)

System Function	The SI system provides emergency core cooling and serves no other purpose. The primary function of the ECCS is to remove the stored and fission product decay heat from the reactor core following an accident in order to prevent fuel rod damage.
Quantity	2
Type	Horizontal, centrifugal, 11-stage
Manufacturer/Model	Pacific Model 3-i 1., JHF
Rated Capacity	440 gpm
Rated Head	2680 ft.
Driver	
Type	Electric Motor, Westinghouse, Frame 5809 H
Horsepower	450
Speed	3600 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	2
Project Class	212
Outline Drawing	1X6AG02-10, 13 & 15
Instruction Book	1X6AG02-016
Physical Location	Aux Bldg, Level B, Rooms R-B15 & R-B19
P&ID	1X4DB121
Surveillance Procedure	14804-1
Pump Test Loop Diagrams	ISI-D-215 & ISI-D-216
Test Parameter Sheets	Page 7-2 & 7-3

Test Parameter Table - Pump 1-1204-P6-003
(Figure ISI-D-215)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-0977	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	Test Gage	NA	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0968	0-100 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr or >.325 in/s	> 2.5Vr - 6Vr >.70 in/s	>6Vr or	NA

Notes:

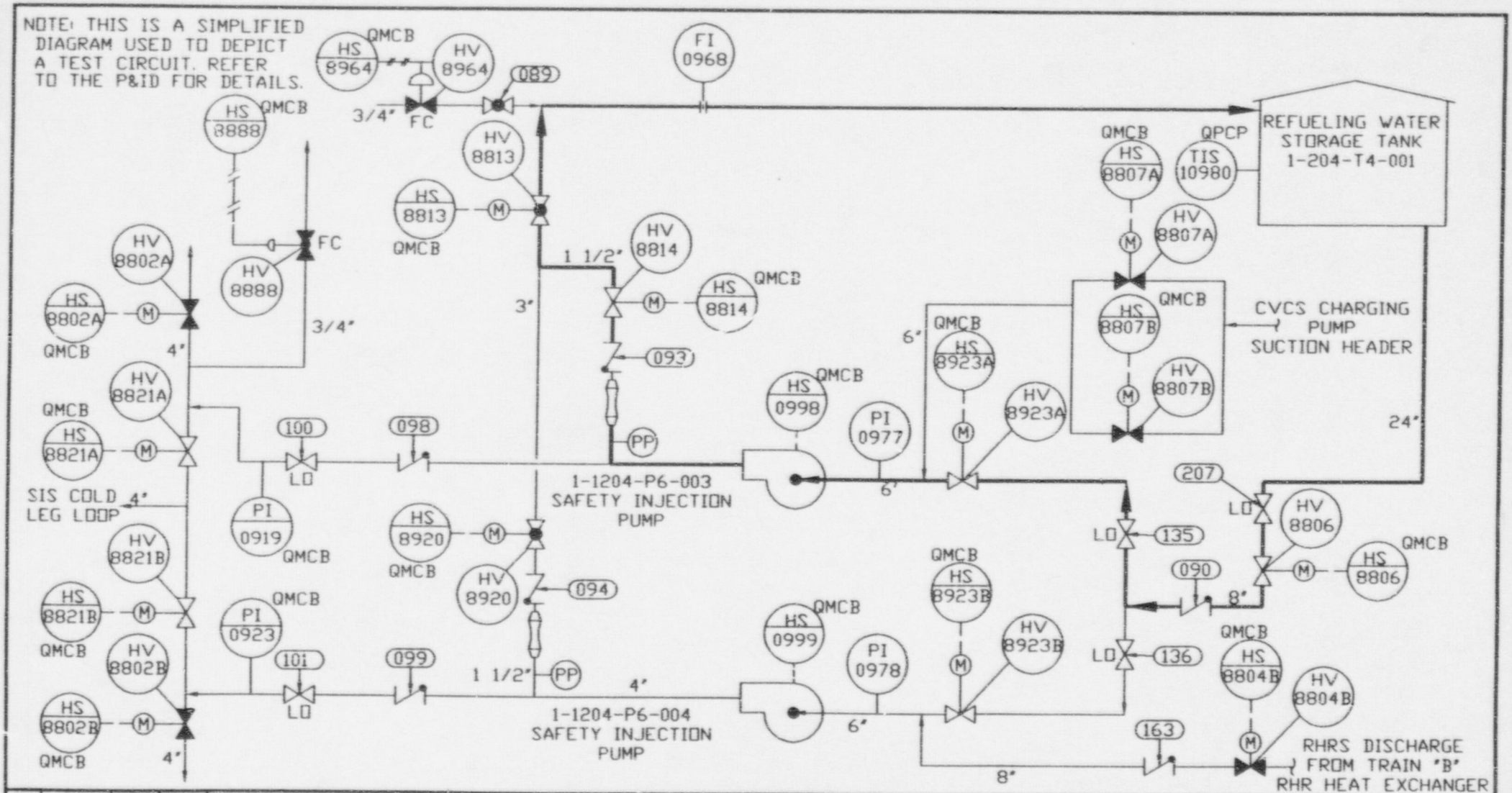
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1204-P4-004
(Figure ISI-D-216)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-0978	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	Test Gage	NA	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0968	0-100 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CWD	UPDATED TO 1X4DB1E1 REV 16	JJC				
2	10-29-87	CSB	WS	ADDED PRESSURE TEST CONNECTIONS	MB				
3	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

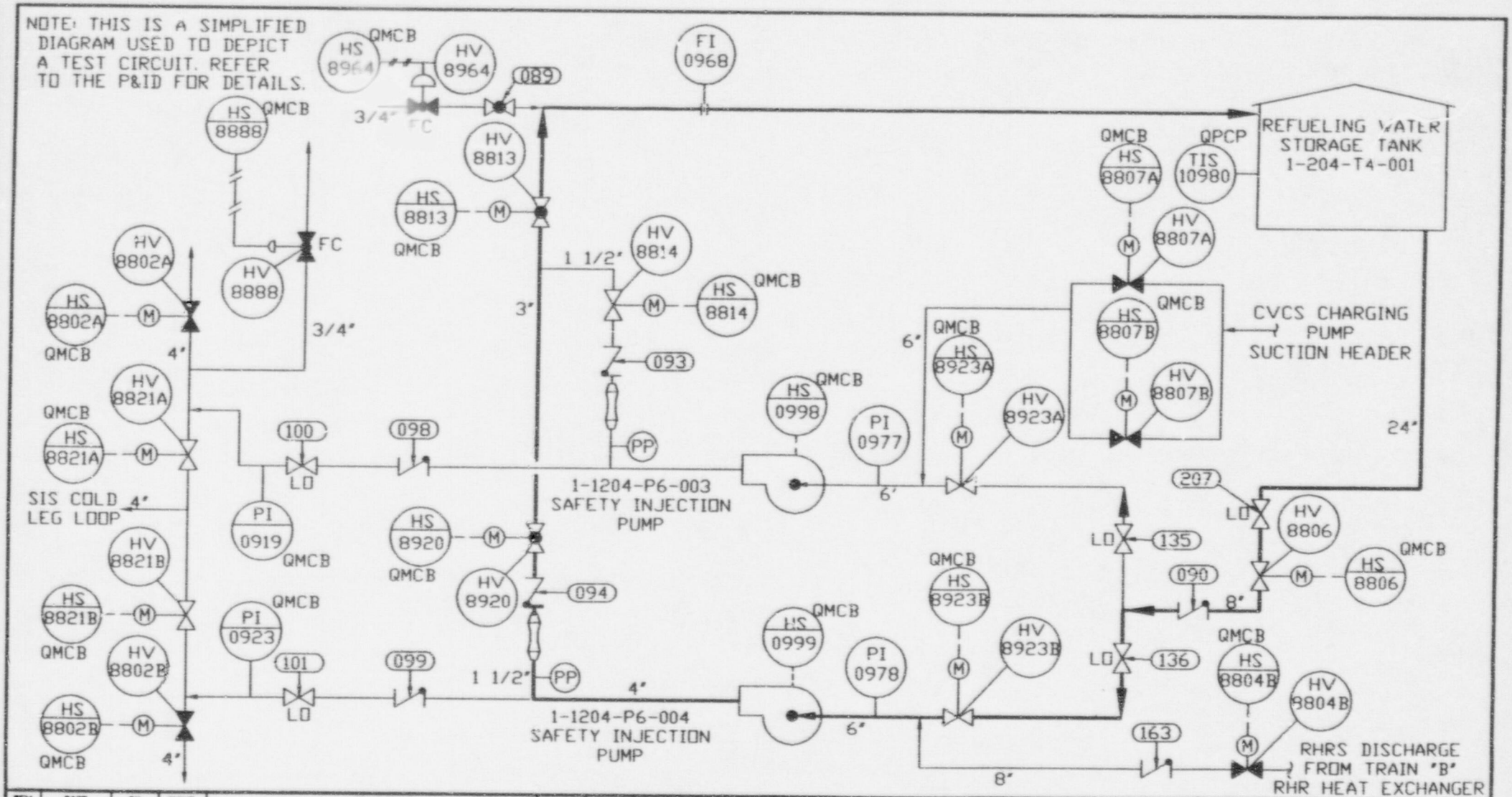
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR SAFETY INJECTION PUMP
1-1204-P6-003

DESIGNED FT | DRAWN DRC
TYPED | CHECKED WS
SCALE NONE | CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 215	1 OF 1	3



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	RHS	CWD	UPDATED TO IX40B121 REV 16	JJC				
2	10-29-87	CSB	WS	ADDED PRESSURE TEST CONNECTIONS	–				
3	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR SAFETY INJECTION PUMP
1-1204-P6-004

DESIGNED FT DRAWN DRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 216	1 OF 1	3

RHR Pumps
(1-1205-P6-001, & 002)

System Function	The primary function is to remove heat energy from the reactor core and reactor coolant system during plant cooldown and refueling operations. As a secondary function, RHR is used to transfer refueling water between the refueling water storage tank and the refueling cavity at the beginning and end of refueling operations. Portions of the RHR system also serve as part of the ECCS during the injection and recirculation phases of a LOCA.
Quantity	2
Type	Vertical, centrifugal, single stage
Manufacturer/Model	Ingersoll-Dresser, 8X20WDF
Rated Capacity	3000 gpm
Rated Head	375 ft.
Driver	
Type	Westinghouse LLD squirrel-cage induction motor
Horsepower	400
Speed	1780 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	2
Project Class	212
Outline Drawing	AX6AF02-20007
Instruction Book	AX6AF02-20030
RHR Pumps (cont)	
Physical Location	Aux Bldg, Level D, Rooms R-D48 & R-D49
P&ID	1X4DB122
Surveillance Procedure	14805-1 & 14812-1
Pump Test Loop Diagrams	ISI-D-215 & ISI-D-216
Test Parameter Sheets	Page 8-2 & 8-3

Test Parameter Table - Pump 1-1205-P6-001
(Figure ISI-D-217)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-8884	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-8886	0-400 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0618A	0-5000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

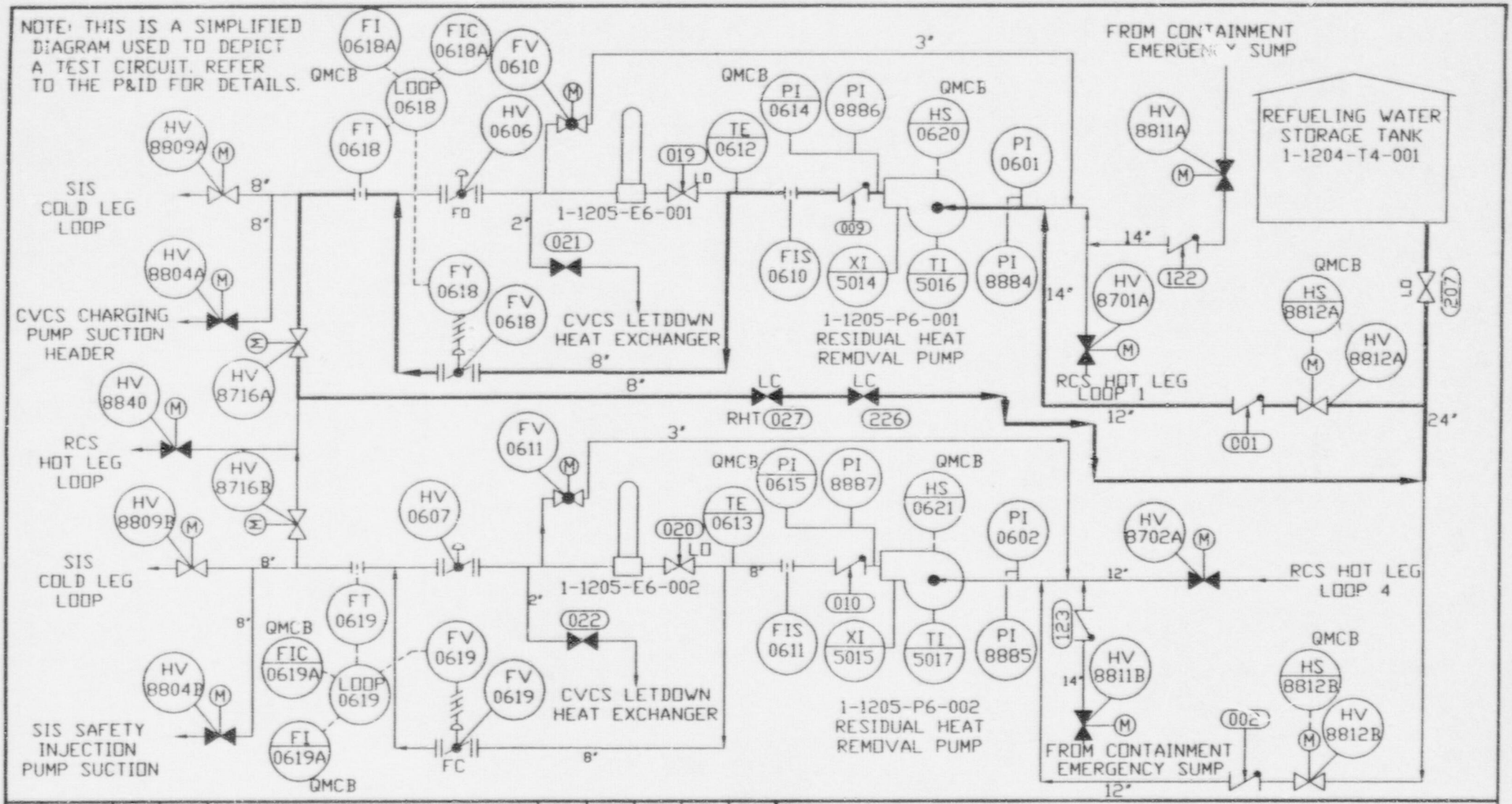
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1205-P6-002
(Figure ISI-D-216)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-8885	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-8887	0-400 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0619A	0-5000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CVR	UPDATE TO 1X4DB122 REV 19	JJC				
2	6-30-87	BST	WS	CHANGED TEST CIRCUIT	CWD				
3	11-10-87	CSB	WS	CHANGED TEST CIRCUIT	MB				
4	6-14-88	CSB	WS	ADDED P1898C, 8883, 8886, 8887	WLW	MB			
5	5-17-89	WS	DMS	DELETED MINIFLOW TEST	MB				
6	12-2-96	JWB		REDRAWN IN ACAD13	DWS				

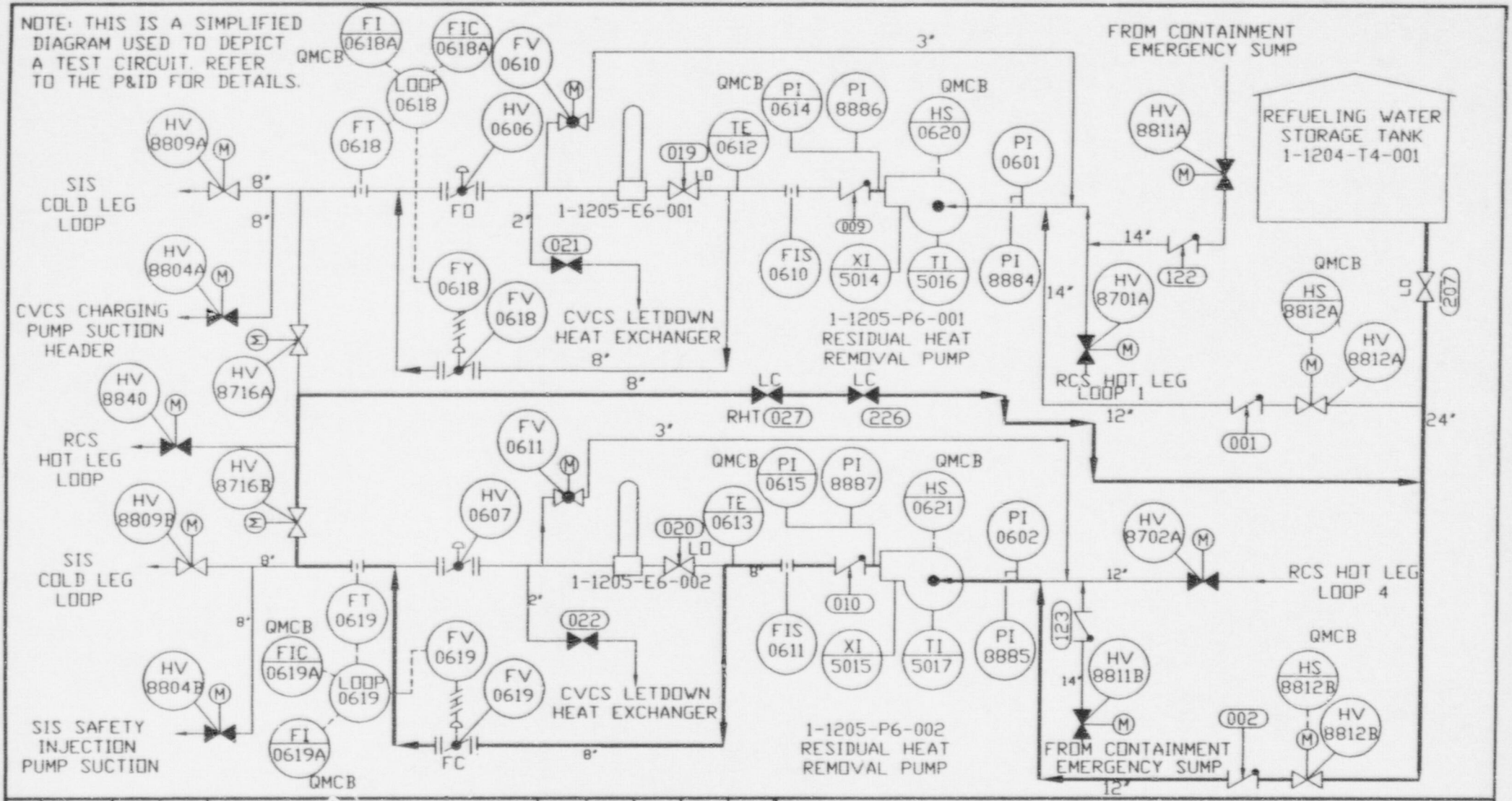
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR RESIDUAL HEAT REMOVAL PUMP
1-1205-P6-001

DESIGNED FT | DRAWN DRC
TYPED | CHECKED WS
SCALE NONE | CONTINUED ON SHEET

PROJ.ID.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 217	1 OF 1	6



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CVD	UPDATE TO IX4D8122 REV 19	JJC				
2	6-30-87	RST	WS	CHANGED TEST CIRCUIT	CWS				
3	11-10-87	CSB	WS	CHANGED TEST CIRCUIT	MB				
4	6-14-88	CSB	WS	ADDED P18884, 8885, 8886, 8887	WLW	MB			
5	5-17-89	WS	WS	DELETED MINIFLOW TEST	MB				
6	12-2-96	JWB		REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR RESIDUAL HEAT REMOVAL PUMP
1-1205-P6-002

DESIGNED FT DRAWN DRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 218	1 OF 1	6

CS Pumps
(1-1206-P6-001, & 002)

System Function	Containment spray limits the peak pressure in the containment to less than design pressure following a LOCA or a main steam line break inside containment. Trisodium phosphate is mixed with recirculated spray water in the containment sump region for pH control and to enhance absorption of the airborne fission product iodine and to retain the iodine in the containment sump solution to limit calculated offsite doses to less than 10CFR100 limits.
Quantity	2
Type	Horizontal, centrifugal
Manufacturer/Model	Goulds Model 3415
Capacity	2600 gpm
Total Dynamic Head	450 ft.
Driver	
Type	Westinghouse electric motor, Frame 5010S
Horsepower	400
Speed	1777 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	2
Project Class	212
Outline Drawing	1X6AD02-11
Instruction Book	X6AD02-18
Physical Location	Aux Bldg, Level D, Rooms R-D76 & R-D77
P&ID	1X4DB131
Surveillance Procedure	14806-1
Pump Test Loop Diagrams	ISI-D-219 & ISI-D-220
Test Parameter Sheets	Page 9-2 & 9-3

Test Parameter Table - Pump 1-1206-P6-001
(Figure ISI-D-219)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-0972	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-0974	0-300 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0929	0-400 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

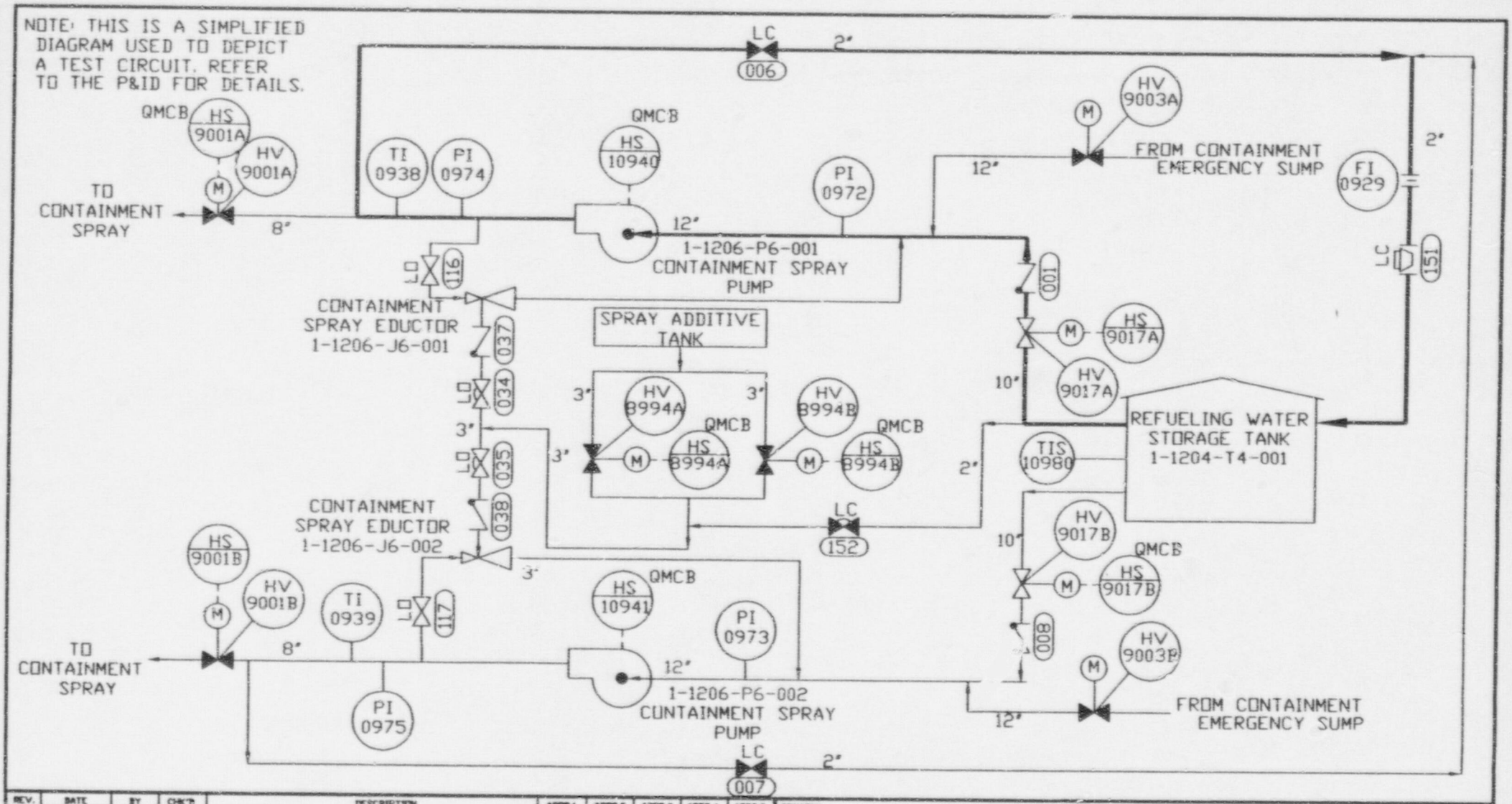
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1206-P6-002
(Figure ISI-D-220)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-0973	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-0975	0-300 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0929	0-400 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	VS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CVD	UPDATED TO IX4DB13N REV 15	JJC				
2	4-29-09	BGS	VS	UPDATED TO IX4DB13N REV 19	JJC				
3	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

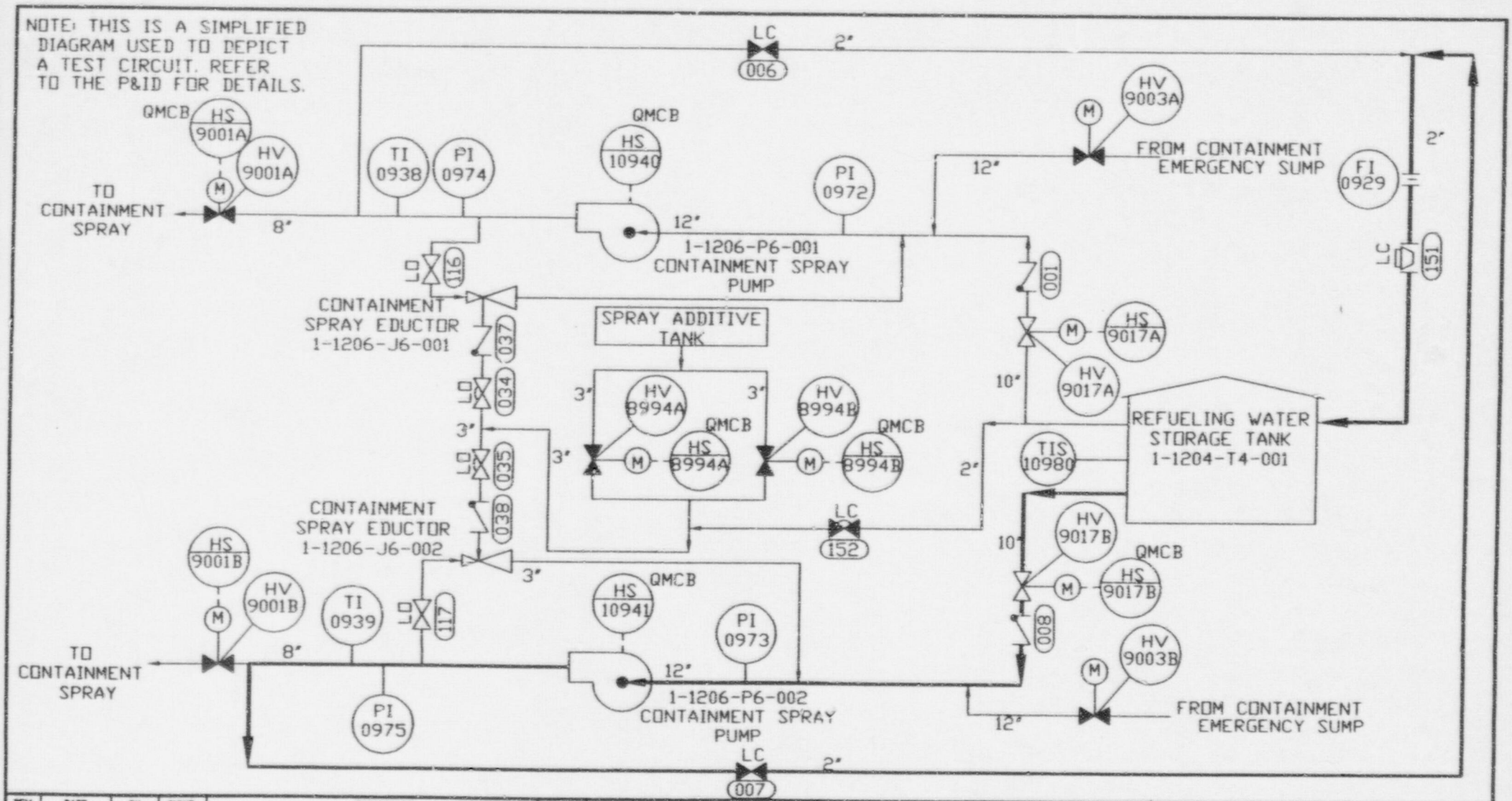
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP FOR CONTAINMENT SPRAY PUMP 1-1206-P6-001

DESIGNED		DRAWN	
TYPED		CHECKED	VS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.#	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 219	1 OF 1	3



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	DGS	WS	ISSUED FOR PST	FT				
1	7-21-86	RMS	CWD	UPDATED TO 1X4DB131 REV 15	JJC				
2	4-28-94	BGS	WS	UPDATED TO 1X4DB131 REV 19	MB				
3	12-2-96	JVS	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP FOR CONTAINMENT SPRAY PUMP 1-1206-P6-002

DESIGNED FT | DRAWN DRC
TYPED | CHECKED WS
SCALE NONE | CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 220	1 OF 1	3

CVCS Pumps

CENTRIFUGAL CHARGING PUMPS
(1-1208-P6-002, & 003)

System Function	The primary functions of the CVCS are to: • Regulate reactor coolant chemistry for reactivity and corrosion control • Maintains the water level in the pressurizer of the RCS • Maintains seal-water injection flow to the reactor coolant pump • Provide a means of filling, draining and pressure testing the RCS • Provide injection flow to the RCS following actuation of SIS
Quantity	2
Type	Horizontal, centrifugal, 11 stage
Manufacturer/Model	Pacific, IJ 2-1/2 in., RL
Capacity	150 gpm
Total Dynamic Head	5800 ft.
Driver	
Type	Westinghouse electric motor
Horsepower	600
Speed	1800 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	2
Project Class	212
Outline Drawing	1X6AH02-101
Instruction Book	1X6AH02-85
Physical Location	Aux Bldg, Level C, Rooms R-C115 & R-C118
P&ID	1X4DB116-2
Surveillance Procedure	14808-1
Pump Test Loop Diagrams	ISI-D-221& ISI-D-222
Test Parameter Sheets	Page 10-2 & 10-3

Test Parameter Table - Pump 1-1208-P6-002
(Figure ISI-D-221)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-8891	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-8472	0-4000 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-10120	0-80 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

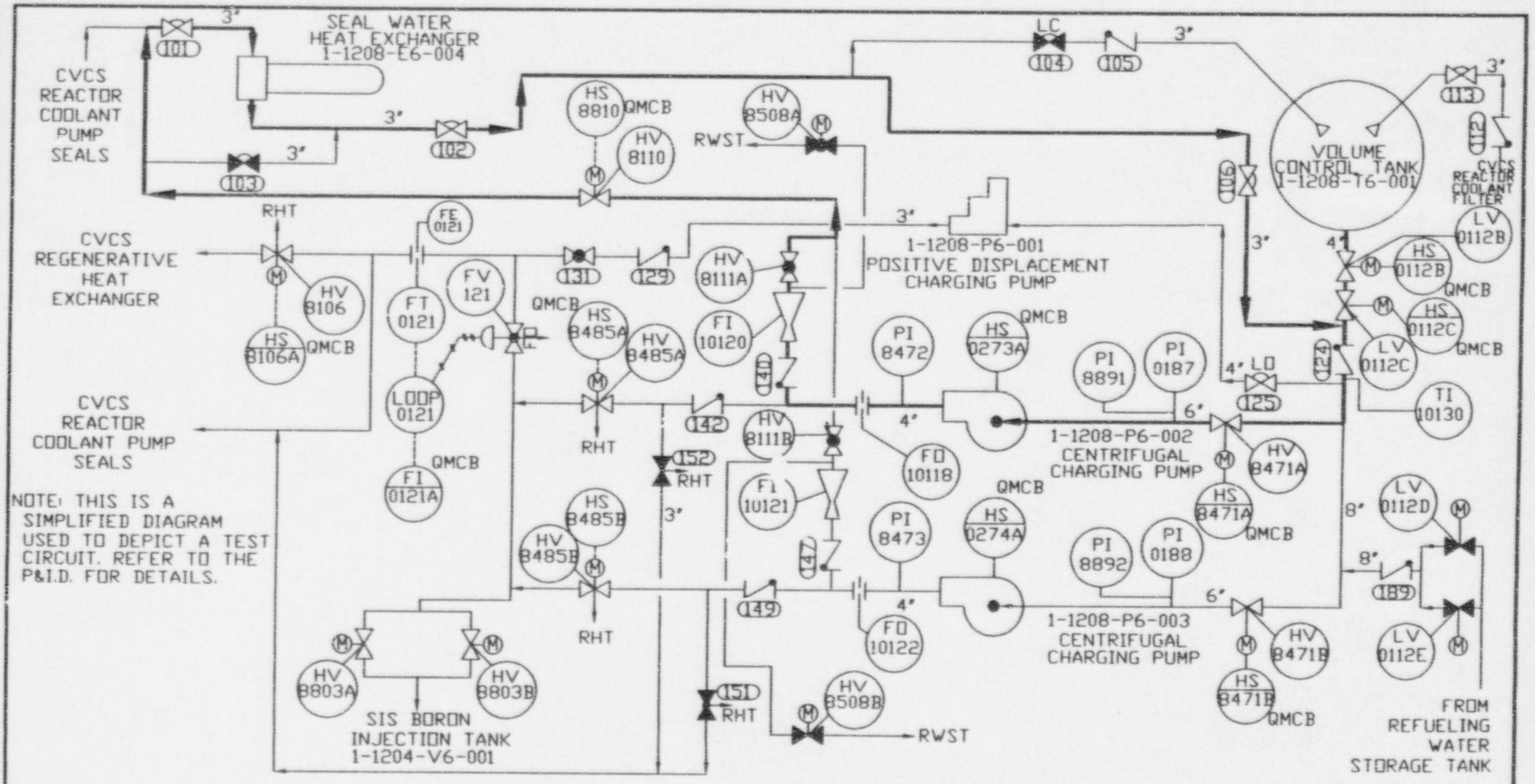
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1208-P6-003
(Figure ISI-D-222)

Parameter	Test Freq.	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	Comments
		I.D. No.(3)	Range	Req. Acc.	Value	Range	Range	Range	
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-8892	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-8473	0-4000 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-10121	0-80 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	VS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CVD	UPDATED TO 1X4SB116-2 REV 10	JJC				
2	6-14-88	CSB	VS	ADDED PI 8891, 8892	WLW	MB			
3	12-16-93	VS	DRG	ADDED FO-10118 AND FO-10122	MB				
4	11-13-95	VS	DMS	ADDED VALVES HV 8508A AND HV 8508B PLUS ASSOCIATED	DMS				
				PIPING. CHANGED PI 118 TO PI 8472 AND PI 139 TO PI 8473	DMS				
5	12-2-96	JVB	DMS	REDRAWN IN ACAD13					

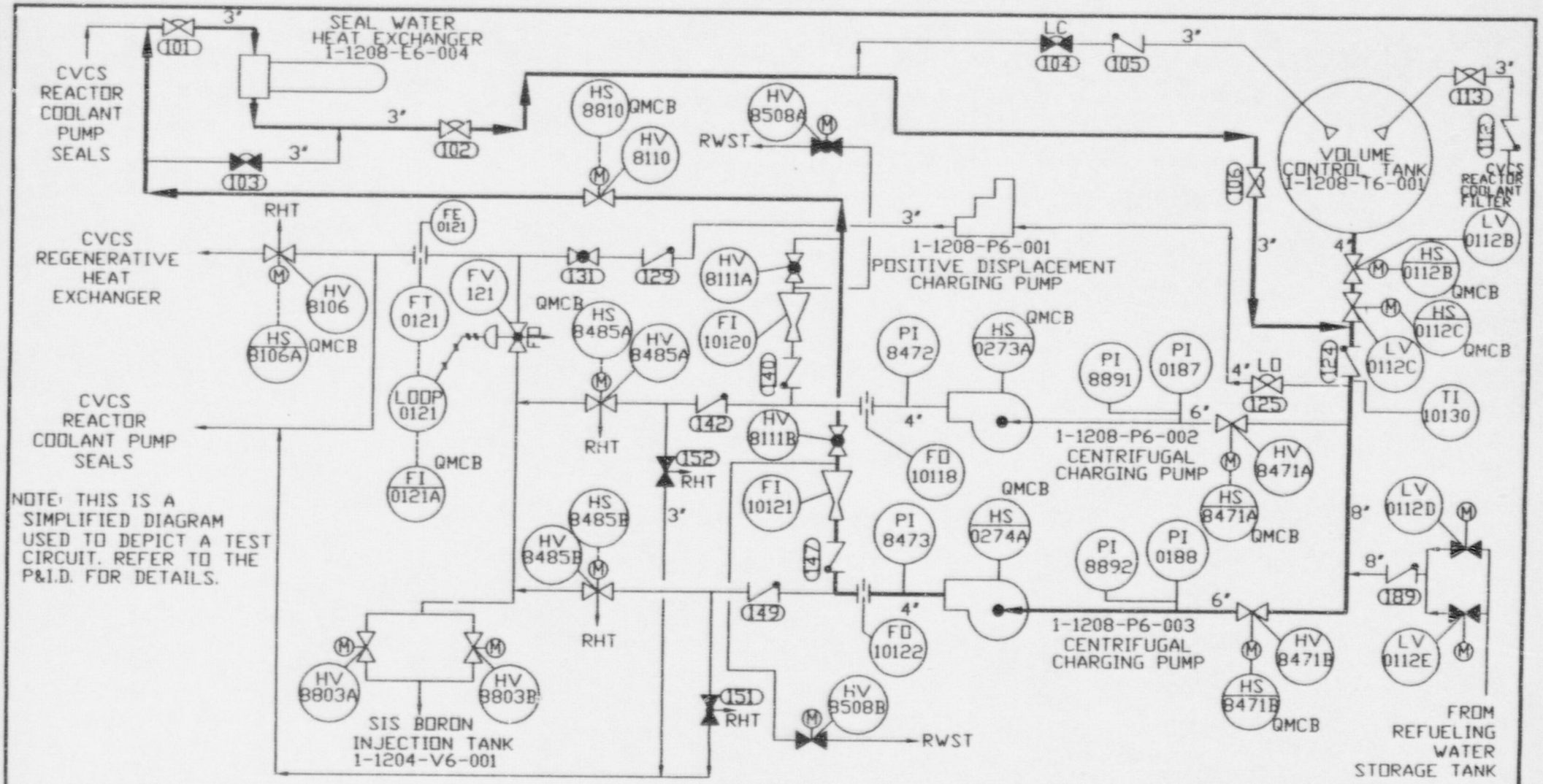
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR CENTRIFUGAL CHARGING PUMP
1-1208-P6-002

DESIGNED FT DRAWN DRC
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 221	1 OF 1	5



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CVD	UPDATED TO 1X4DB116-2 REV 16	JJC				
2	6-14-88	CSB	WS	ADDED PI 8891, 8892	WLW	MB			
3	12-16-93	WS	DRG	ADDED FD-10118 AND FD-10122	MB				
4	11-13-95	WS	DMS	ADDED VALVES HV 8508A AND HV 8508B PLUS ASSOCIATED	DMS				
				PIPING. CHANGED PI 118 TO PI 8472 AND PI 119 TO PI 8473	DMS				
5	12-2-96	JVB	DMS	REDRAWN IN ACAD13					

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR CENTRIFUGAL CHARGING PUMP
1-1208-P6-003

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.#	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 222	1 OF 1	5

BORIC ACID TRANSFER PUMPS
(1-1208-P6-006 & 007)

System Function	Provides boric acid to the CVCS for use in RCS inventory control and makeup to systems requiring reactor grade borated water. The boric acid transfer system also provides boric acid for emergency boration of the RCS.
Quantity	2
Type	Canned motor
Manufacturer/Model	Chempump Model GVH-1K
Design Flowrate	75 gpm
Design Head	235 ft.
Driver	
Type	Electric motor
kW	15.5
Speed	3450 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	1X6AH02-45
Instruction Book	2X6AA07-10
Physical Location	Aux Bldg, Level D
P&ID	1X4DB118
Surveillance Procedure	14811-1
Pump Test Loop Diagrams	ISI-D-228& ISI-D-229
Test Parameter Sheets	Page 11-2 & 11-3

Test Parameter Table - Pump 1-1208-P6-006
(Figure ISI-D-228)

Parameter	Test Freq.	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	
		I.D. No.(3)	Range	Req. Acc.	Value	Range	Range	Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-10115	-15 to +15 psig	± 2%	NA	NA	NA	NA	Relief Request RR-P-1
Outlet Pressure (Po)	Qtr	PI-0113	0-160 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-40001	0-100 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

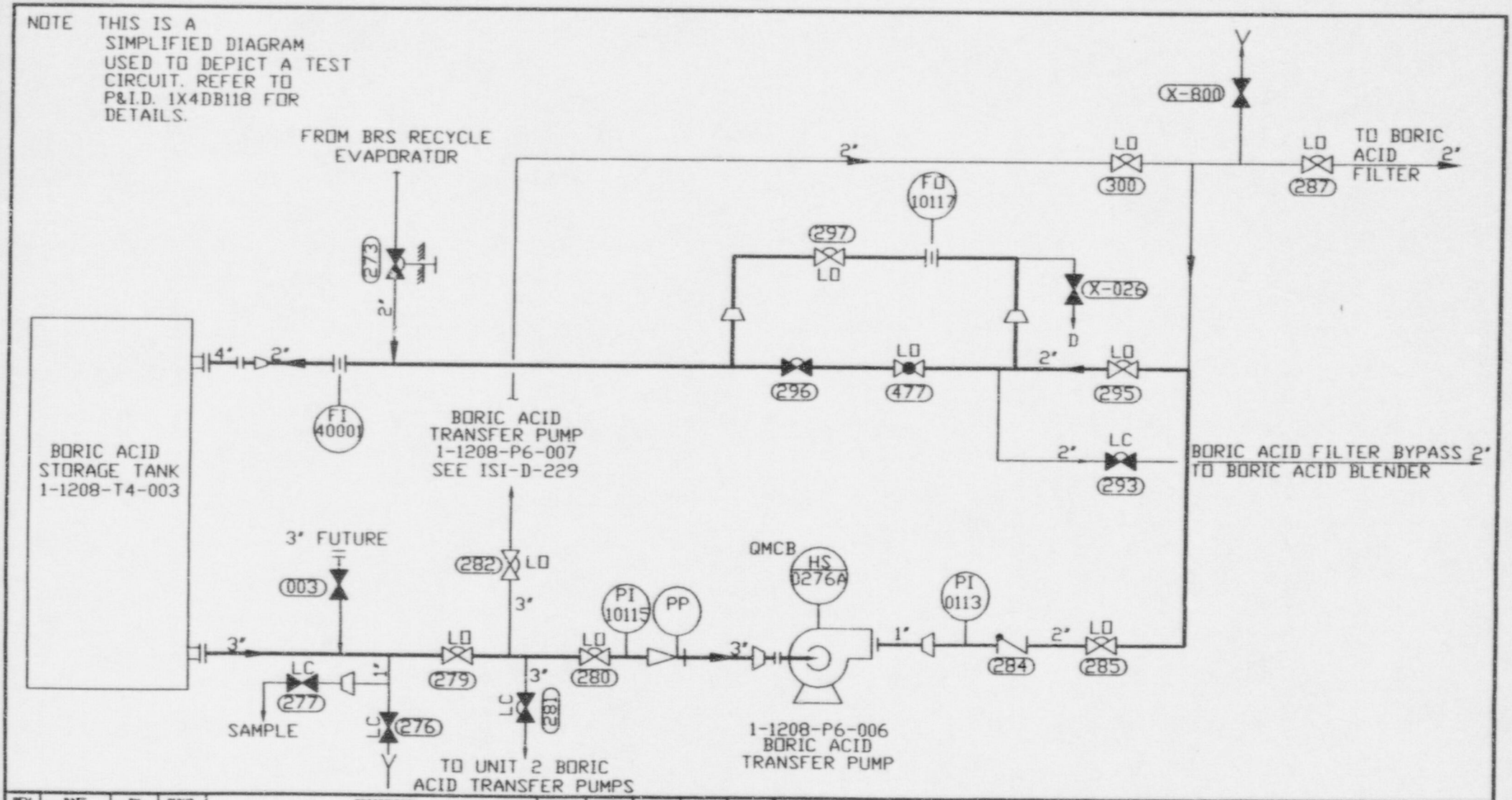
1. Differential pressure is calculated as, ΔP = Po - Pi
1. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1208-P6-007
(Figure ISI-D-229)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-10116	-15 to +15 psig	± 2%	NA	NA	NA	NA	Relief Request RR-P-1
Outlet Pressure (Po)	Qtr	PI-0114	0-160 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-40001	0-100 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	10-21-86	MAC	WS	ISSUED FOR PST / IST	CWD	JJC			
1	6-14-88	CSB	WS	ADDED FI 40001	WLW	MB			
2	5-17-89	WS	RLB	EXTENDED TEST LOOP	MB				
3	12-2-96	JVB	DAC5	REDRAWN IN ACAD83	DAC5				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

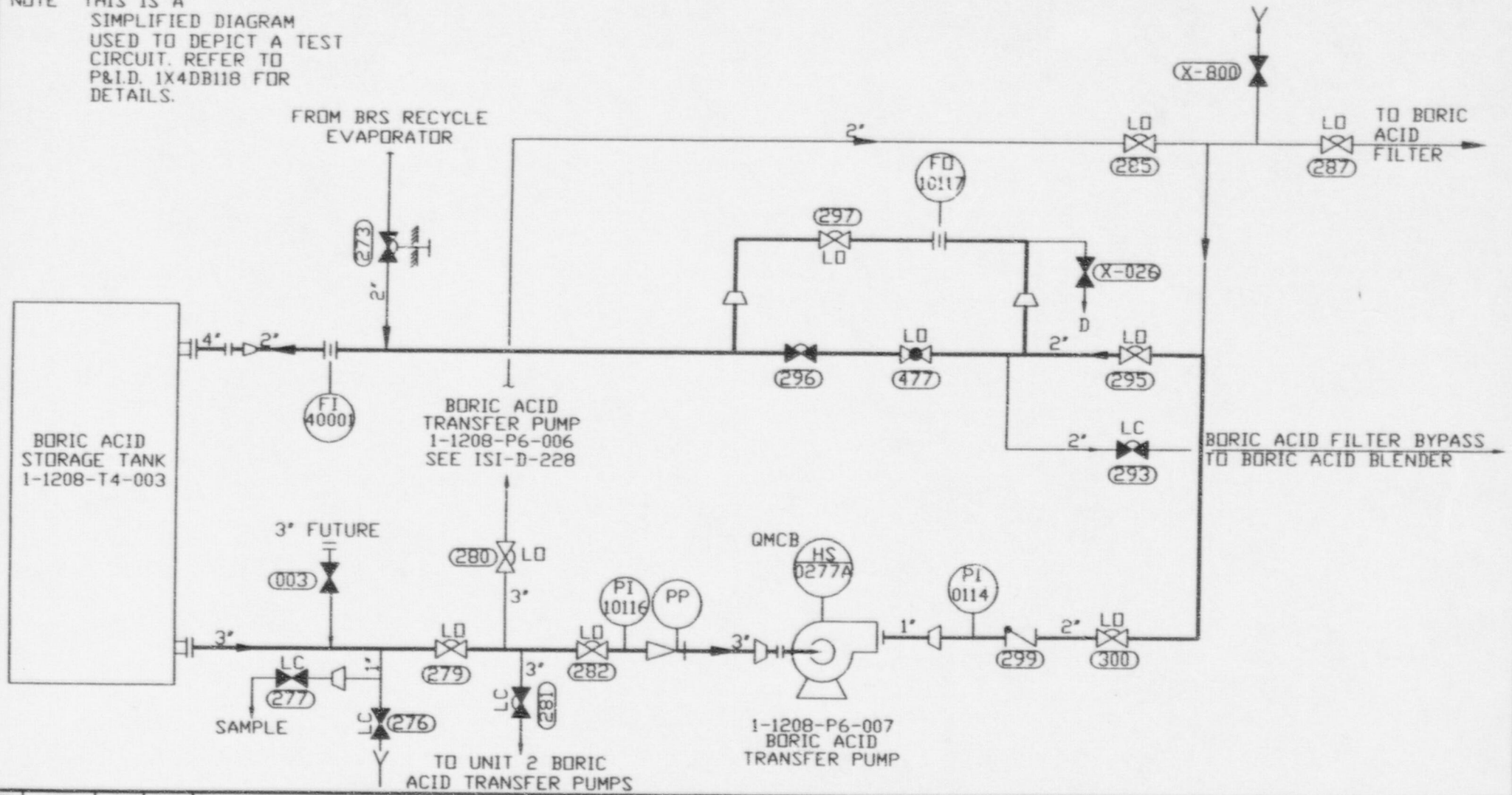
VOGTLE ELECTRIC GENERATING PLANT
UNIT 1

PUMP INSERVICE TESTING LOOP FOR BORIC ACID TRANSFER PUMP 1-1208-P6-003

DESIGNED MAC DRAWN MAC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 228	1 OF 1	3

NOTE THIS IS A SIMPLIFIED DIAGRAM USED TO DEPICT A TEST CIRCUIT. REFER TO P&I.D. 1X4DB118 FOR DETAILS.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	10-01-96	MAC	VS	ISSUED FOR PST / IST	CWD	JJC			
1	6-14-98	CSB	VS	ADDED FI 4000	WLW	MB			
2	5-17-99	VS	RLO	EXTENDED TEST LOOP	MB				
3	12-2-96	JVB	DMS	REDRAWN IN ACAD12	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1

PUMP INSERVICE TESTING LOOP FOR BORIC ACID TRANSFER PUMP 1-1208-P6-007

DESIGNED	MAC	DRAWN	MAC
TYPED		CHECKED	VS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 229	1 OF 1	3
N/A			

AFW Pumps
(1-1302-P4-001, 002 & 003)

System Functior	Supply water to the steam generators whenever the reactor coolant temperature is above 350°F and the main feedwater system is not in operation, i.e., during startup, cooldown, or emergency conditions resulting in a loss of main feedwater. Automatically provides feedwater for the removal of reactor core decay heat following a loss of main feedwater. This prevents damage to the reactor core until the reactor coolant temperature is brought from a hot standby condition to the point at which RHR may be placed into operation. AFW supplies feedwater to the steam generators at a flowrate sufficient to support normal low-power transients such as startup, cooldown, and hot standby.

Turbine Driven AFW Pump (1-1302-P4-001)

Quantity	1
Type	Horizontal, centrifugal, 5 stage, split-case
Manufacturer/Model	Ingersoll-Rand, Model 6HMTA
Capacity	1175 gpm
Total Dynamic Head	3500 ft.
Driver	
Type	Terry Turbine, Model GS-2N, non-condensing, single-stage, mechanical drive
Horsepower	1603
Speed	4250 rpm
Power Supply	Steam
Code Class	3
Project Class	313
Outline Drawing	1X4AF03-83
Instruction Book	1X4AF03-20033

Turbine Driven AFW Pump (1-1302-P4-001) (cont)

Physical Location	AFW pump house
P&ID	1X4DB161-2
Surveillance Procedure	14810-1
Pump Test Loop Diagrams	ISI-D-223
Test Parameter Sheets	Page 12-4

Motor-Driven AFW Pumps (1-1302-P4-002 & 003)

Quantity	2
Type	Horizontal, centrifugal, 6 stage, split-case
Manufacturer/Model	Ingersoll-Rand, Model 4HMTB
Design Flowrate	630 gpm
Total Dynamic Head	3500 ft.
Driver	
Type	Westinghouse electric motor, LLD 5810 H
Horsepower	900
Speed	3600 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	1X4AF03-81
Instruction Book	1X4AF03-20032
Physical Location	AFW pump house
P&ID	1X4DB161-2
Surveillance Procedure	14807-1
Pump Test Loop Diagrams	ISI-D-224& ISI-D-225
Test Parameter Sheets	Page 12-5 & 12-6

Test Parameter Table - Pump 1-1302-P4-001
(Figure ISI-D-223)

Parameter	Test Freq.	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	Comments
		I.D. No.(3)	Range	Req. Acc.	Value	Range	Range	Range	
Speed (N)	Qtr	SI-15109A	0-6000	± 2%	Nr	NA	NA	NA	Speed is set to reference value
Inlet Pressure (Pi)	Qtr	PI-5110A	0-30 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-5107A	0-2000 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-15100	0-200 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

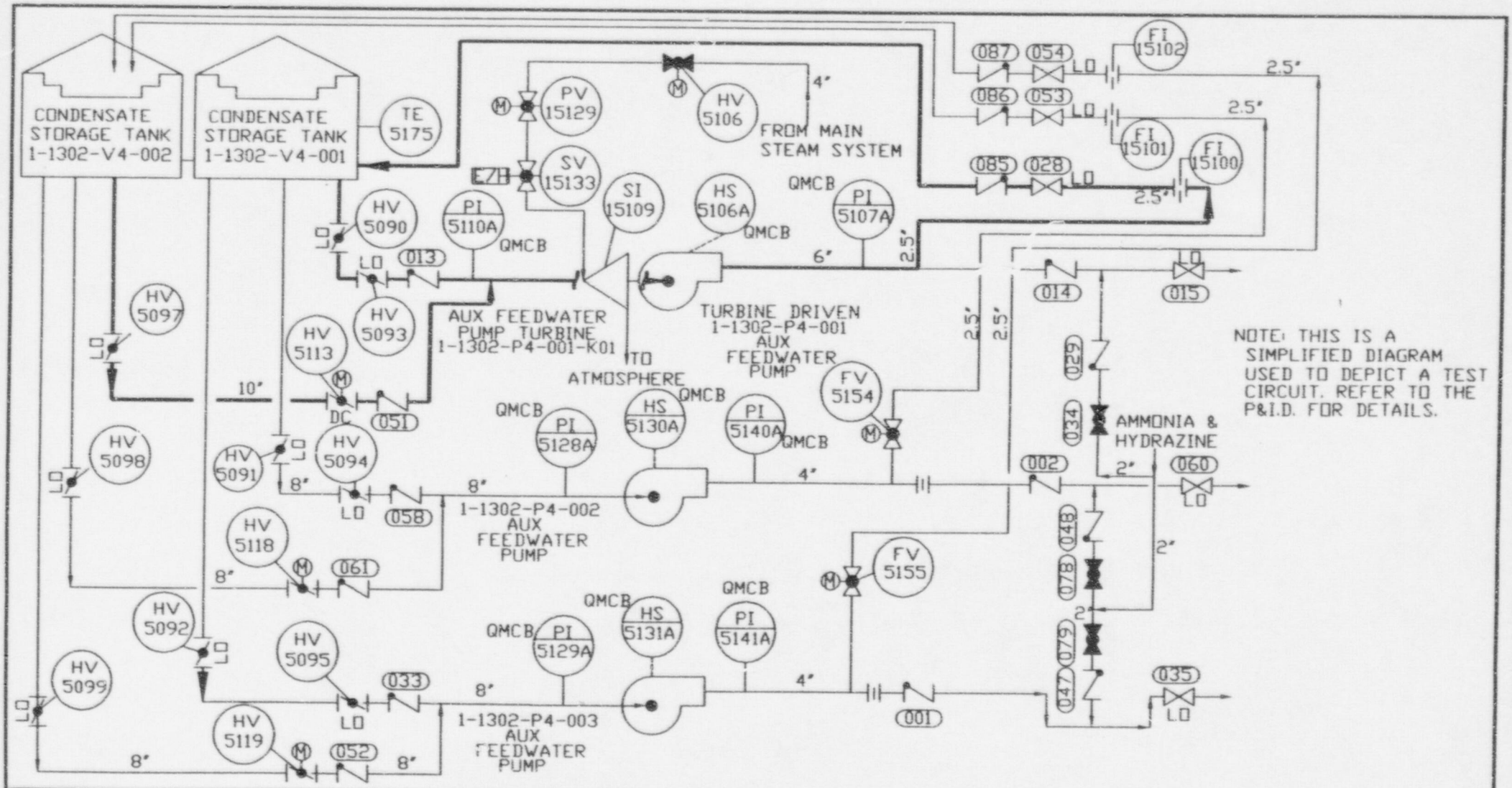
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1302-P4-002
(Figure ISI-D-224)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-5128A	0-30 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-5140A	0-2000 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-15101	0-200 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	VS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CVD	UPDATED TO 1X4DB161-2 REV 16	JJC				
2	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

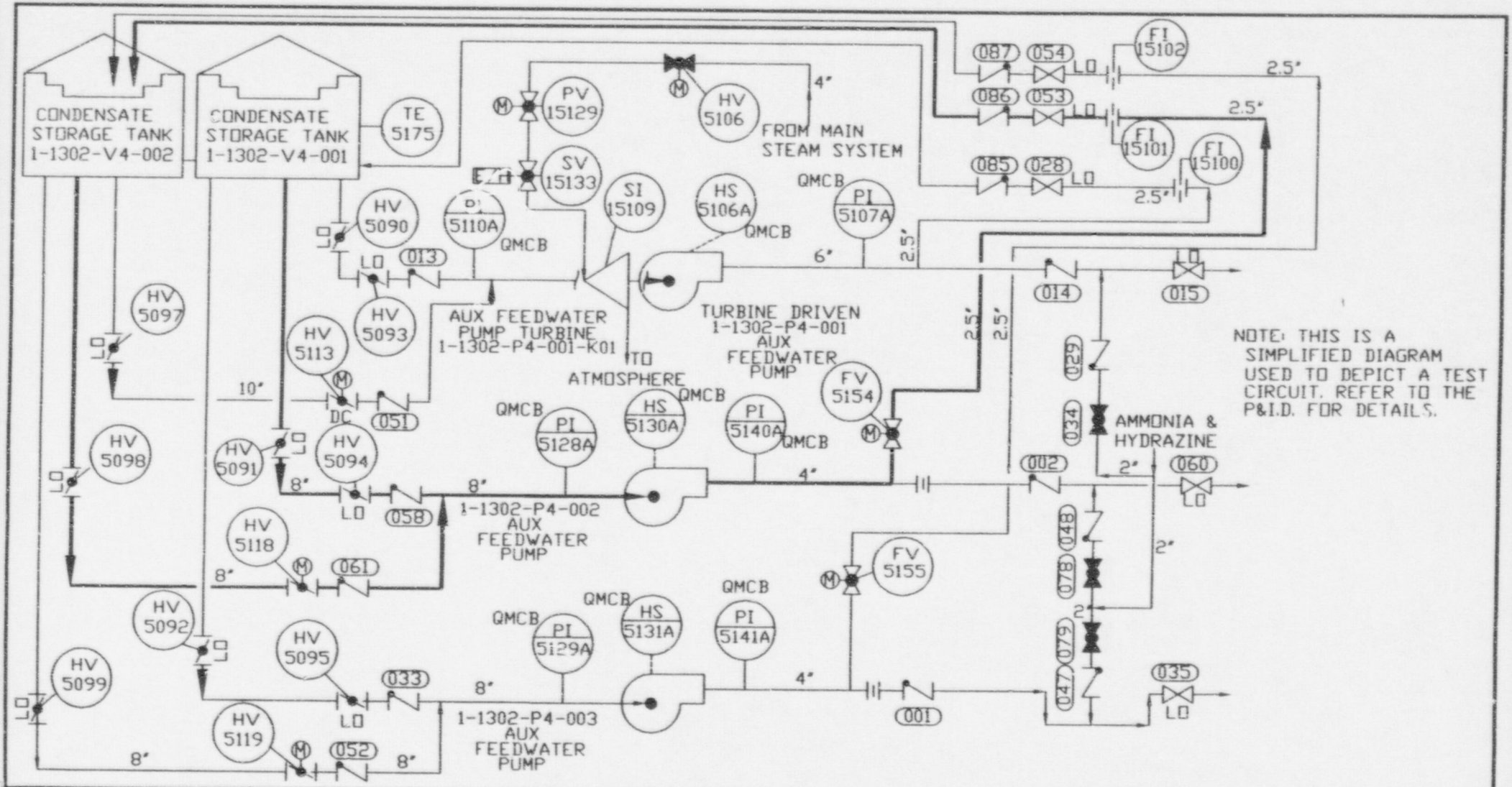
REMARKS:

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR AUXILLARY FEEDWATER PUMP
1-1302-P4-001

DESIGNED: FT | DRAWN: DRC
TYPED: | CHECKED: VS
SCALE: NONE | CONTINUED ON SHEET:

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 223	1 OF 1	2



NOTE: THIS IS A SIMPLIFIED DIAGRAM USED TO DEPICT A TEST CIRCUIT. REFER TO THE P&I.D. FOR DETAILS.

REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CWB	UPDATED TO 1X49B161-2 REV 16	FT				
2	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

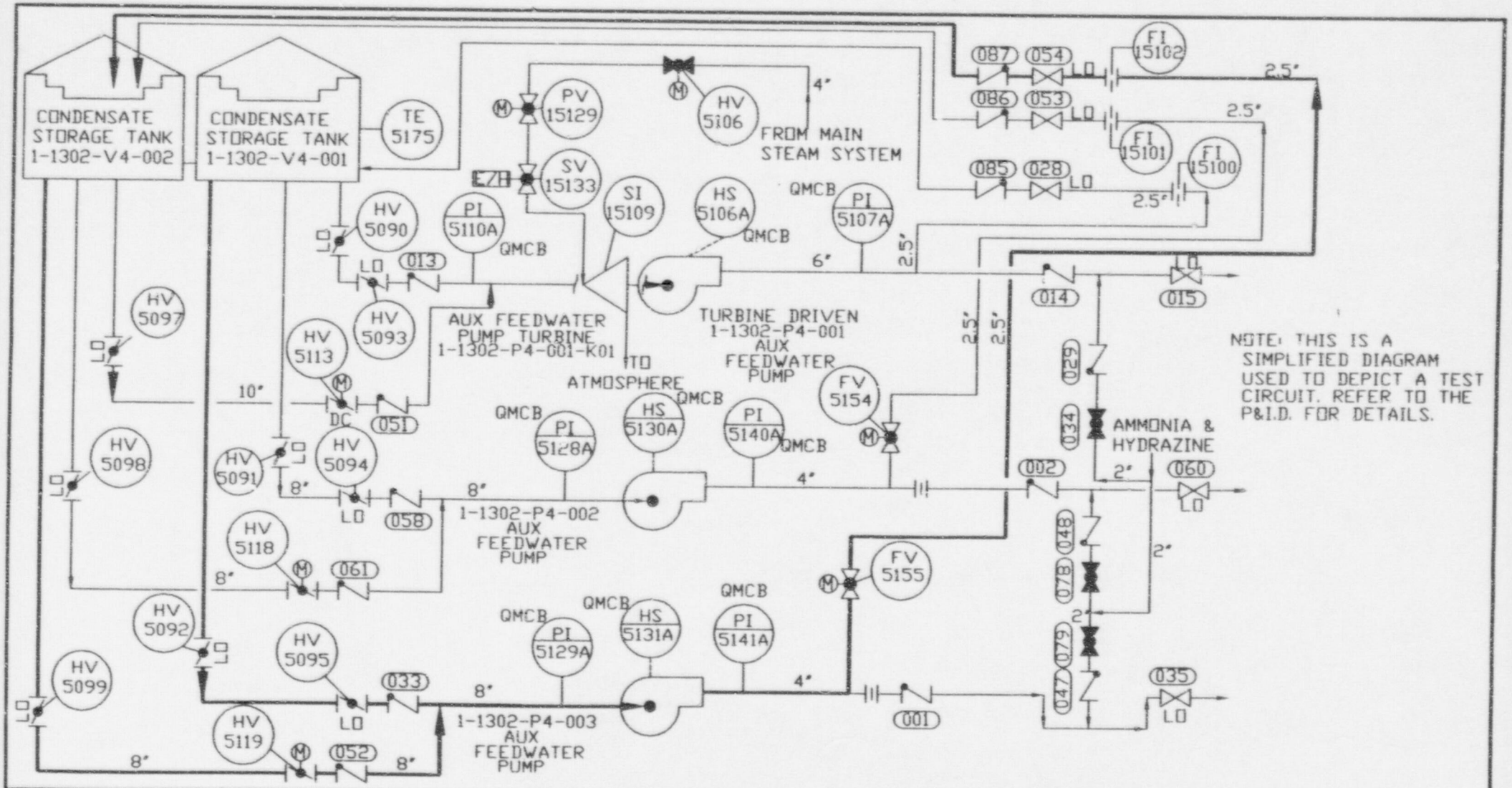
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR AUXILLARY FEEDWATER PUMP
1-1302-P4-002

DESIGNED FT DRAWN DRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.#	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 224	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	VS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CVB	UPDATED TO 1X4DB161-E REV 16	JJC				
2	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR AUXILLARY FEEDWATER PUMP
1-1302-P4-003

DESIGNED	FT	DRAWN	DRC	
TYPED		CHECKED	VS	
SCALE	NONE	CONTINUED ON SHEET		
PROJ.I.D.		DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 225	1 OF 1	2

ESF Pumps
(1-1592-P7-001, & 002)

System Function	During normal operation, the ESF chilled-water system is in standby mode; it is activated during emergency conditions upon receipt of a safety injection signal, containment ventilation isolation, or control room isolation signal. The ESF chilled-water system serves air handling units located in the safety-related areas of the plant to ensure the integrity of the cooling system during plant emergency situation.
Quantity	2
Type	Centrifugal
Manufacturer	Goulds
Capacity	600 gpm
Total Dynamic Head	125 ft.
Driver	
Type	Westinghouse electric motor
Horsepower	30
Speed	1800 rpm
Power Supply	480V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	1X4AJ05-27
Instruction Book	AX4AJ05-86
Physical Location	Control Bldg, EL 260 ft., Rooms R-313 & R320
P&ID	1X4DB221
Surveillance Procedure	14809-1
Pump Test Loop Diagrams	ISI-D-226 & ISI-D-227
Test Parameter Sheets	Page 13-2 & 13-3

Test Parameter Table - Pump 1-1592-P7-001
(Figure ISI-D-226)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-22410	0-30 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-22414	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-22425	0-750 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

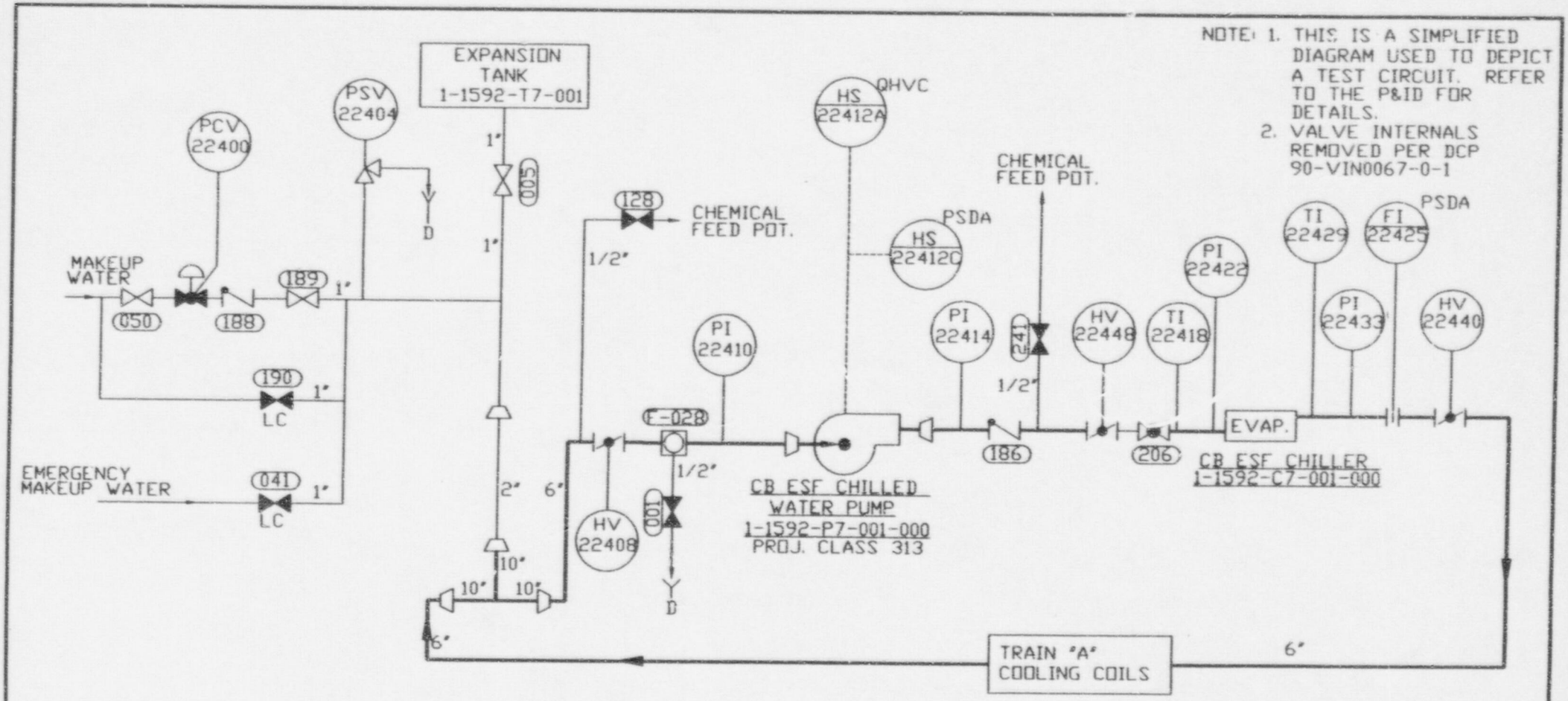
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 1-1592-P7-002
(Figure ISI-D-227)

Parameter	Test Freq.	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	Comments
		I.D. No.(3)	Range	Req. Acc.	Value	Range	Range	Range	
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-22411	0-30 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-22415	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-22426	0-750 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	4-30-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	RHS	CVB	UPDATED TO IX4B221 REV 13	JC				
2	1-21-91	VGS	VLV	REMOVED VALVE 186 INTERNALS	MB				
3	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

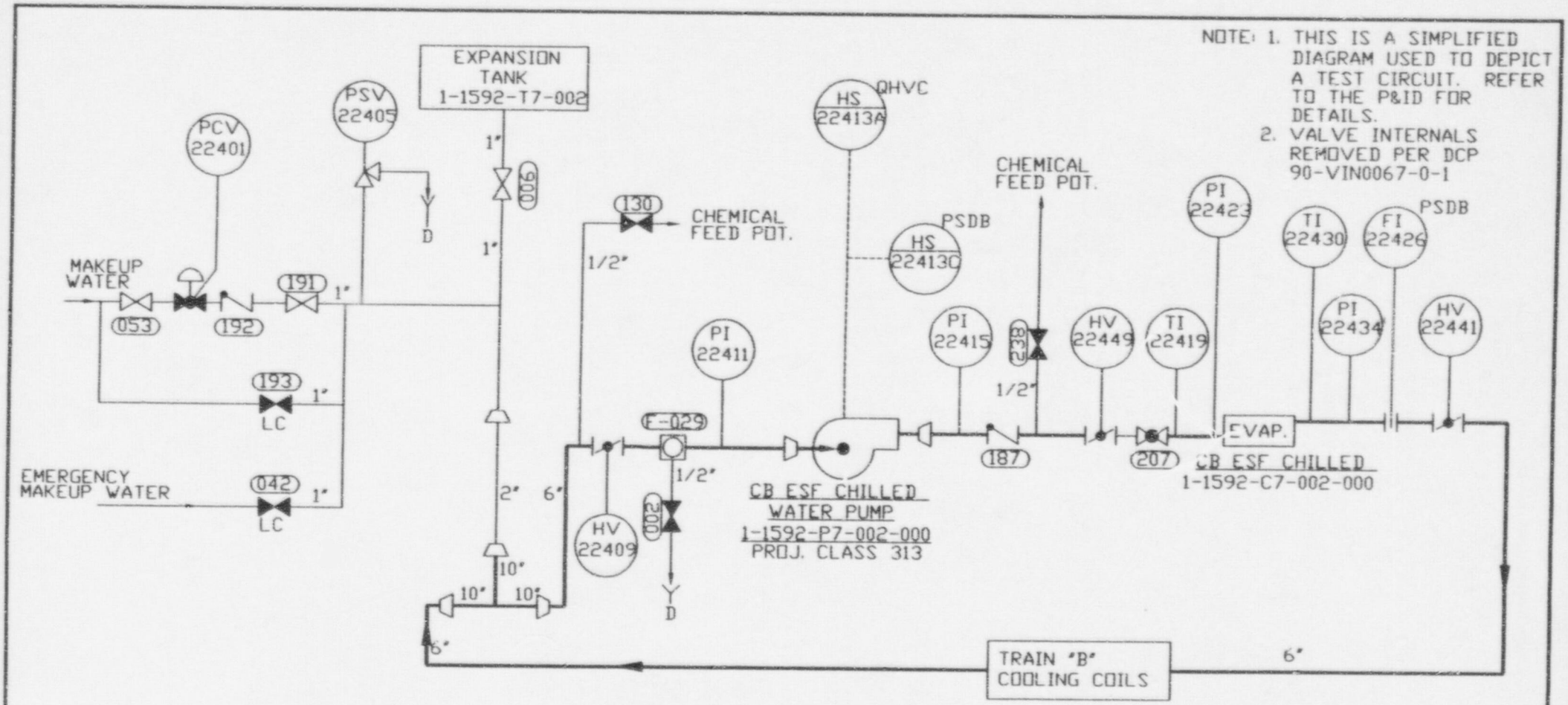
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR CB ESF CHILLED WATER PUMP
TRAIN "A" 1-1592-P7-001-000

DESIGNED	FT	DRAWN	BGS
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 226	1 OF 1	3



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	4-30-84	BGS	WS	ISSUED FOR PST	FT				
1	7-24-86	RMS	CWB	UPDATED TO IX4D8221 REV 13	JJC				
2	1-21-91	WGS	WLW	REMOVED VALVE 186 INTERNALS	MB				
3	12-2-96	JVB	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 1
PUMP INSERVICE TESTING LOOP
FOR CB ESF CHILLED WATER PUMP
TRAIN "B" 1-1592-P7-002-000

DESIGNED FT DRAWN BGS
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.#	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 227	1 OF 1	3

VEGP-2 PUMP TEST TABLE

Nuclear Service Cooling Water - System 1202

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	RR/Remarks
2-1202-P4-001	3/313	2X4DB133-1	C-8	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1202-P4-002	3/313	2X4DB133-2	C-8	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1202-P4-003	3/313	2X4DB133-1	C-5	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1202-P4-004	3/313	2X4DB133-2	C-5	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1202-P4-005	3/313	2X4DB133-1	C-7	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1202-P4-006	3/313	2X4DB133-2	C-7	NSCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1202-P4-007	3/313	2X4DB133-1	C-6	NSCW Transfer Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1202-P4-008	3/313	2X4DB133-2	C-6	NSCW Transfer Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-2 PUMP TEST TABLE

Component Cooling Water - System 1203

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	RR/Remarks
2-1203-P4-001	3/313	2X4DB136	G-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1203-P4-002	3/313	2X4DB136	D-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1203-P4-003	3/313	2X4DB136	G-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1203-P4-004	3/313	2X4DB136	C-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1203-P4-005	3/313	2X4DB136	F-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1203-P4-006	3/313	2X4DB136	B-4	CCW Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-2 PUMP TEST TABLE

Safety Injection - System 1204

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency					RR/Remarks
					Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	
2-1204-P6-003	2/212	2X4DB121	E-3	SI Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1204-P6-004	2/212	2X4DB121	C-3	SI Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-2 PUMP TEST TABLE

Residual Heat Removal - System 1205

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency					RR/Remarks
					Po (psig)	ΔP (psi)	Q (gpm)	V (ft/sec)	N (rpm)	
2-1205-P6-001	2/212	2X4DB122	G-4	RHR Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1205-P6-002	2/212	2X4DB122	D-4	RHR Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-2 PUMP TEST TABLE

Containment Spray - System 1206

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency					RR/Remarks
					Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	
2-1206-P6-001	2/212	2X4DB131	G-4	CS Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1206-P6-002	2/212	2X4DB131	C-4	CS Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-2 PUMP TEST TABLE

Chemical & Volume Control - System 1208

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency					RR/Remarks
					Po (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	
2-1208-P6-002	2/212	2X4DB116-2	G-4	CVCS Centrifugal Charging Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1208-P6-003	2/212	2X4DB116-2	C-4	CVCS Centrifugal Charging Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1208-P6-006	3/313	2X4DB118	D-4	CVCS Boric Acid Transfer Pump	QTR	QTR	QTR	QTR	NA	RR-P-1, RR-P-2
2-1208-P6-007	3/313	2X4DB118	B-4	CVCS Boric Acid Transfer Pump	QTR	QTR	QTR	QTR	NA	RR-P-1, RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-2 PUMP TEST TABLE

Auxiliary Feedwater - System 1302

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency Po (psig)	ΔP (psi)	Q (gpm)	V (ft/sec)	N (rpm)	RR/Remarks
2-1302-P4-001	3/313	2X4DB161-2	F-6	AFW Pump Turbine Driven	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1302-P4-002	3/313	2X4DB161-2	D-6	AFW Pump Motor Driven	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1302-P4-003	3/313	2X4DB161-2	B-6	AFW Pump Motor Driven	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

VEGP-2 PUMP TEST TABLE

Safety Related (ESF) Chillers - System 1592

I.D. Number	CC/PC	P&ID-Sheet No.	Coord.	Description	Measured Parameters & Frequency					RR/Remarks
					Pd (psig)	ΔP (psi)	Q (gpm)	V (in/sec)	N (rpm)	
2-1592-P7-001	3/313	2X4DB221	F-5	ESF Chilled Water Pump	QTR	QTR	QTR	QTR	NA	RR-P-2
2-1592-P7-002	3/313	2X4DB221	C-5	ESF Chilled Water Pump	QTR	QTR	QTR	QTR	NA	RR-P-2

Test Frequency: QTR = Quarterly Pump Test

NSCW Pumps
(2-1202-P4-001, 002, 003, 004, 005, & 006)

System Function	Provide cooling water for the containment coolers, control building essential chiller condensers, various engineered safety feature pump motor and lube oil coolers, and the component cooling water and auxiliary component cooling water diesel generator jacket water heat exchangers and transfers the heat removed to the ultimate heat sink.
Quantity	6
Type	Vertical Line Shaft, 2 stage, self lubricated
Manufacturer/Model	Bingham-Willamette/18x27B VCM
Rated Capacity	8600 gpm (each)
Rated Total Dynamic Head	230 feet
Driver	
Type	Electric Motor
Horsepower	700
Speed	1180 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	2X4AF02-33
Instruction Book	2X4AF02-94
Physical Location	NSCW Pump House
P&ID	2X4DB133-1, -2
Surveillance Procedure	14802-2
Pump Test Loop Diagrams	ISI-D-250 through ISI-D-255
Test Parameter Sheets	Page 15-3 through 15-8

NSCW Transfer Pumps
(2-1202-P4-007, 008)

System Function	Provides capability to transfer water between cooling tower basins.
Quantity	2
Type	Vertical Line Shaft, 2 stage, self lubricated
Manufacturer/Model	Bingham-Willamette/18x12A VCM
Rated Capacity	600 gpm (each)
Rated Total Dynamic Head	110 feet
Driver	
Type	Electric Motor
Horsepower	30
Speed	1765 rpm
Power Supply	480V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	2X4AF02-136
Instruction Book	2X4AF02-96
Physical Location	NSCW Pump House
P&ID	2X4DB133-1, -2
Surveillance Procedure	14801-2
Pump Test Loop Diagrams	ISI-D-256 and ISI-D-257
Test Parameter Sheet	Page 15-9 and 15-10

Test Parameter Table - Pump 2-1202-P4-001
(Figure ISI-D-250)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1606	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2148	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11760	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 2-1202-P4-002
(Figure ISI-D-251)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1607	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2149	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11763	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 2-1202-P4-003
(Figure ISI-D-252)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1606	NA	(1)	NA	NA.	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2152	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11762	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 2-1202-P4-004
(Figure ISI-D-253)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1607	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2153	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11765	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 2-1202-P4-005
(Figure ISI-D-254)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1606	NA	(1)	NA	NA.	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2150	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11761	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 2-1202-P4-006
(Figure ISI-D-255)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1607	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2151	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11764	0-15000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

Test Parameter Table - Pump 2-1202-P4-007
(Figure ISI-D-256)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1606	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2154	0-100 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-2156	0-1000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

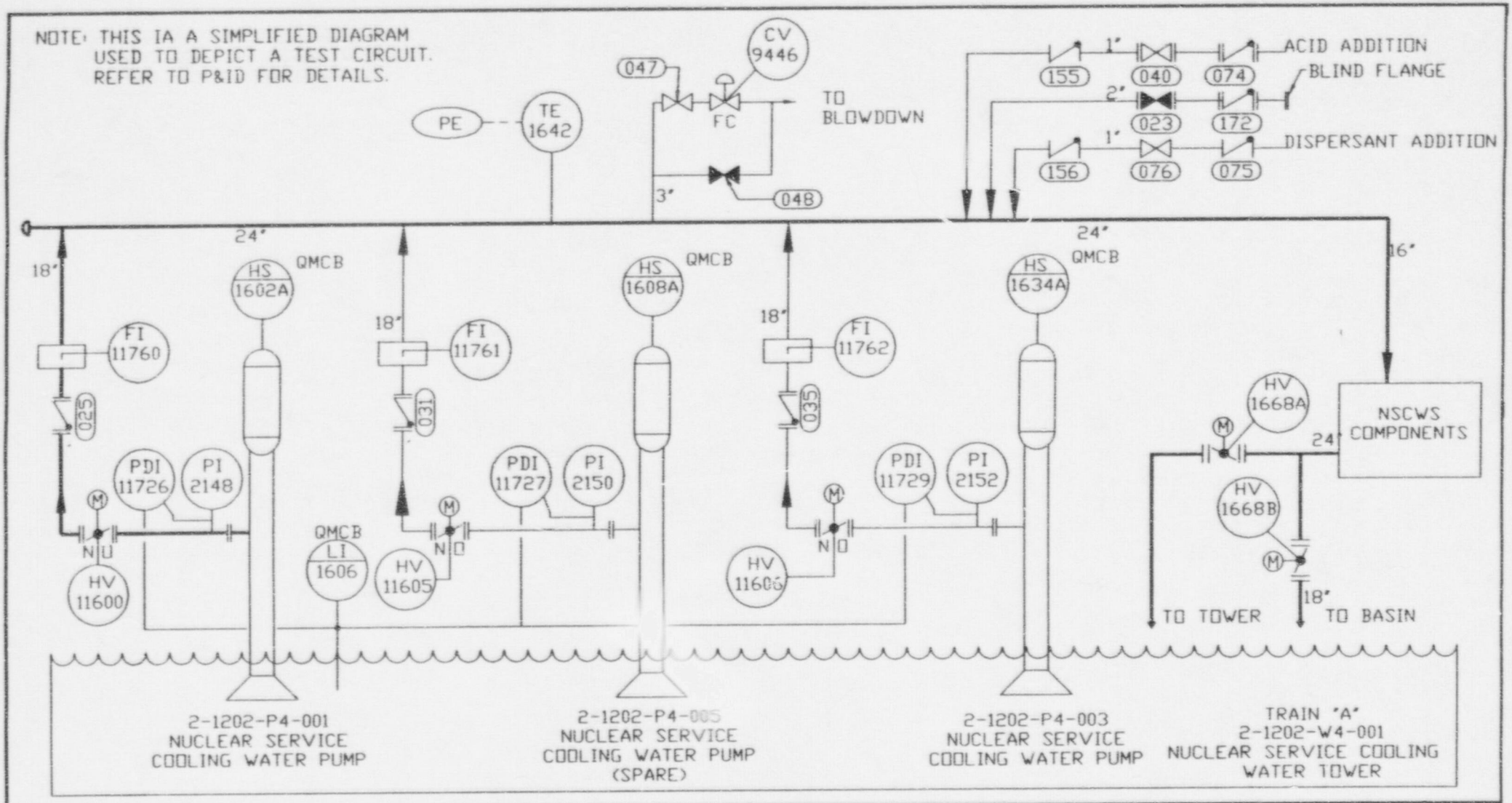
Test Parameter Table - Pump 2-1202-P4-008
(Figure ISI-D-257)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(4)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	LI-1607	NA	(1)	NA	NA	NA	NA	Measure basin level
Outlet Pressure (Po)	Qtr	PI-2155	0-100 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	(2)	NA	± 2%	ΔPr	.95 - 1.10ΔPr	.93 - <.95ΔPr	<.93 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-2157	0-1000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(5)	Qtr	(3)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Basin level indicator is utilized to determine level in feet.
2. Differential pressure is calculated using basin level (to determine suction head) and outlet pressure.
3. Portable vibration instruments are utilized.
4. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
5. Measurements are taken on the upper motor-bearing housing in three orthogonal directions, one of which is the axial direction.

NOTE: THIS IA A SIMPLIFIED DIAGRAM
USED TO DEPICT A TEST CIRCUIT.
REFER TO P&ID FOR DETAILS.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	WS	ISSUED FOR PST	FT				
1	1-26-88	MSS	RLB	UPDATED TO REV 20 OF 2X4DB133-1	JJC				
2	12-2-96	DWR		REDRAWN IN ACAD13	DMS				

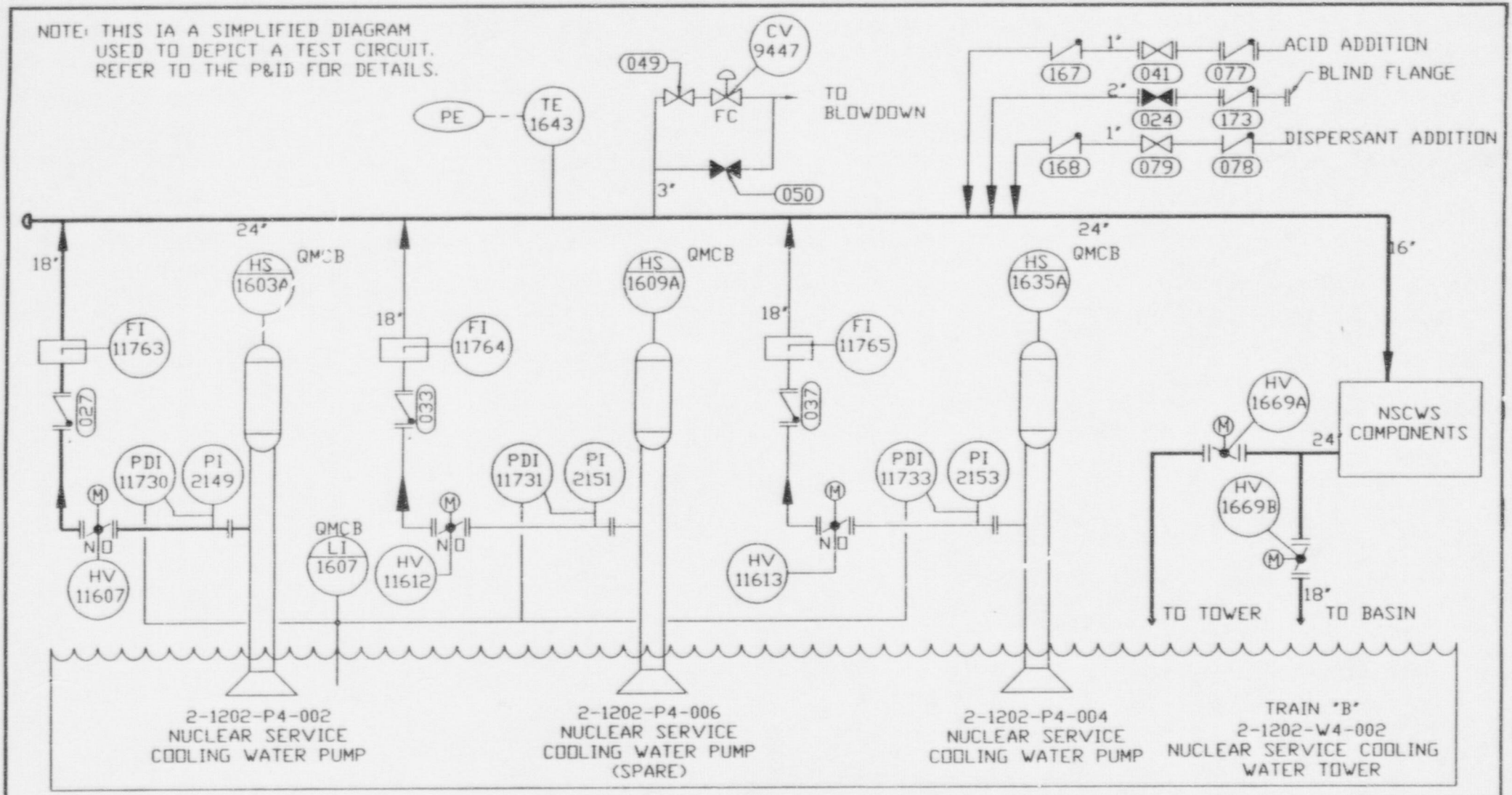
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 2-1202-P4-001

DESIGNED FT DRAWN DRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 250	1 OF 1	2
N/A			



REV	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	MSS	RLB	UPDATE TO REV 19 OF 2X4DB133-2	JJC				
2	12-2-96	DWR		REDRAWN IN ACAD13	DWS				

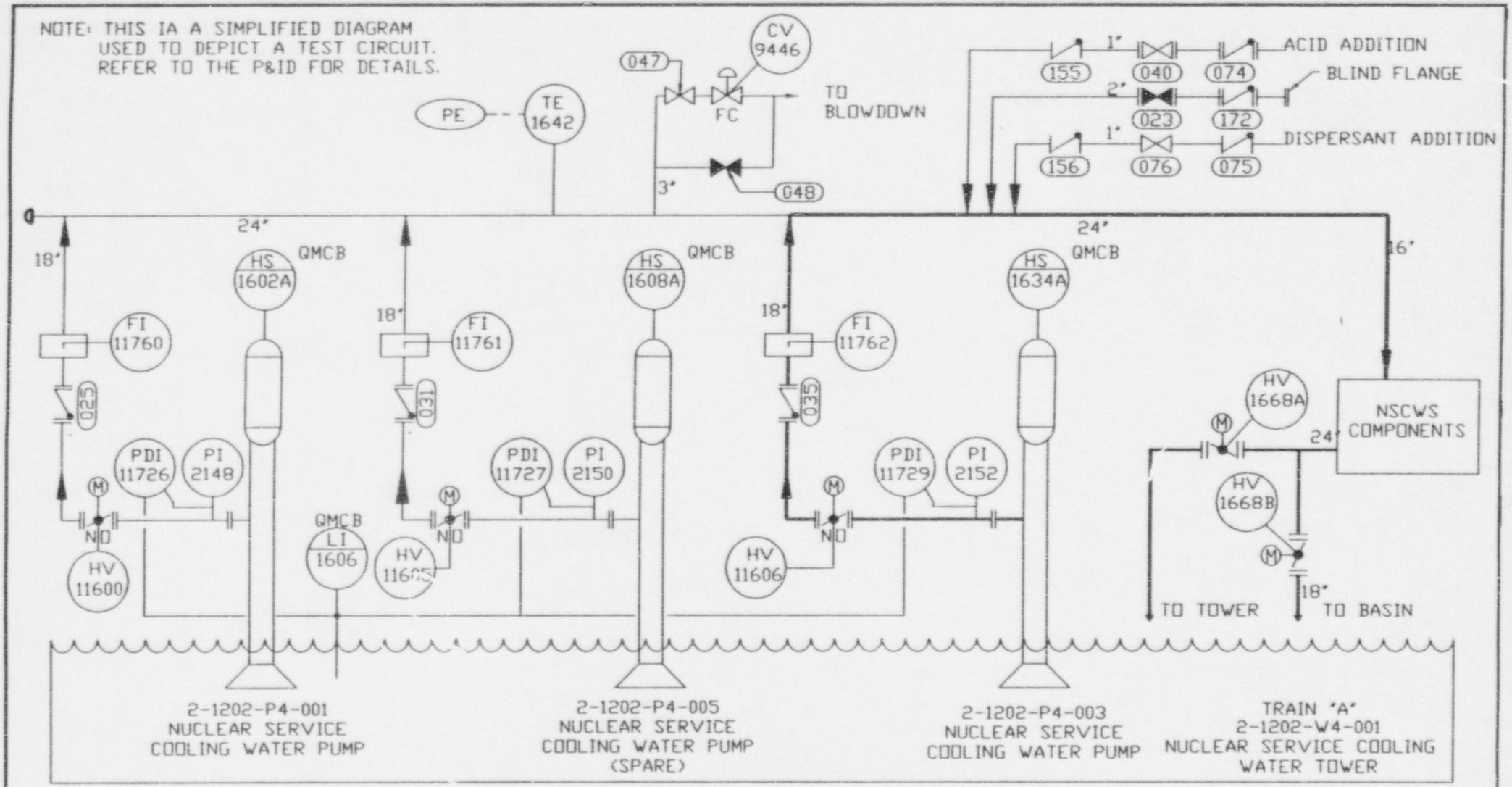
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 2-1202-P4-002

DESIGNED FT DRAWN BRC
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D-251	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	WS	ISSUED FOR PST	FT				
1	1-26-88	NSS	RLB	UPDATED TO REV 20 OF 2X4DB133-1	JJC				
2	12-2-96	DWR		REDRAWN IN ACAD13	DMS				

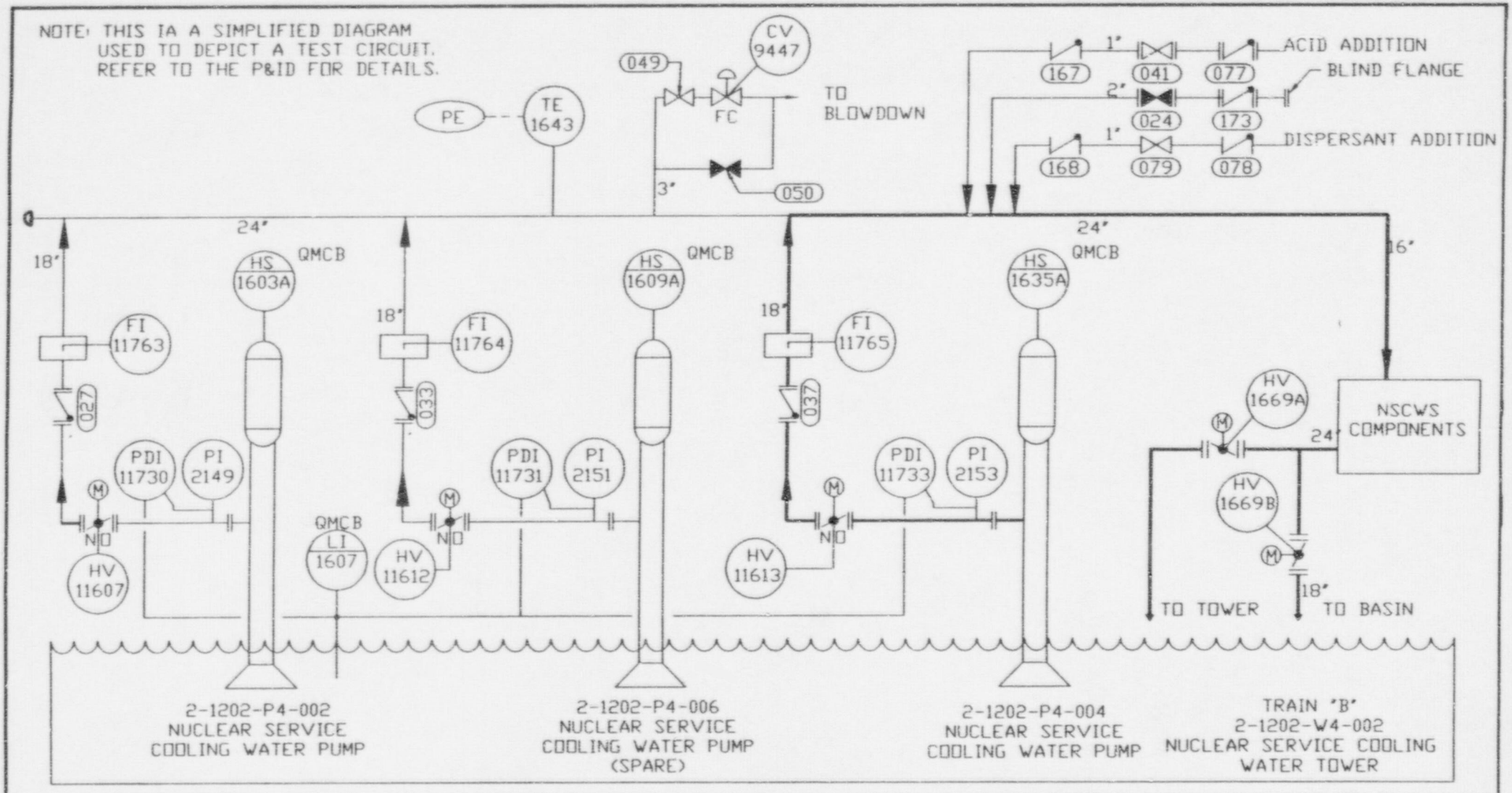
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2

PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 2-1202-P4-003

DESIGNED	FT	DRAWN	DRC		
TYPED		CHECKED	WS		
SCALE	NONE	CONTINUED ON SHEET			
	PROJ.I.D.	DRAWING NUMBER		SHEET	REV.
	N/A	N/A	ISI-D- 252	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-94	BGS	WS	ISSUED FOR PST	FT				
1	1-26-98	MSS	RLB	UPDATE TO REV 19 OF 2X4DB133-2	JJC				
2	12-2-96	DWR		REDRAWN IN ACAD13	DMS				

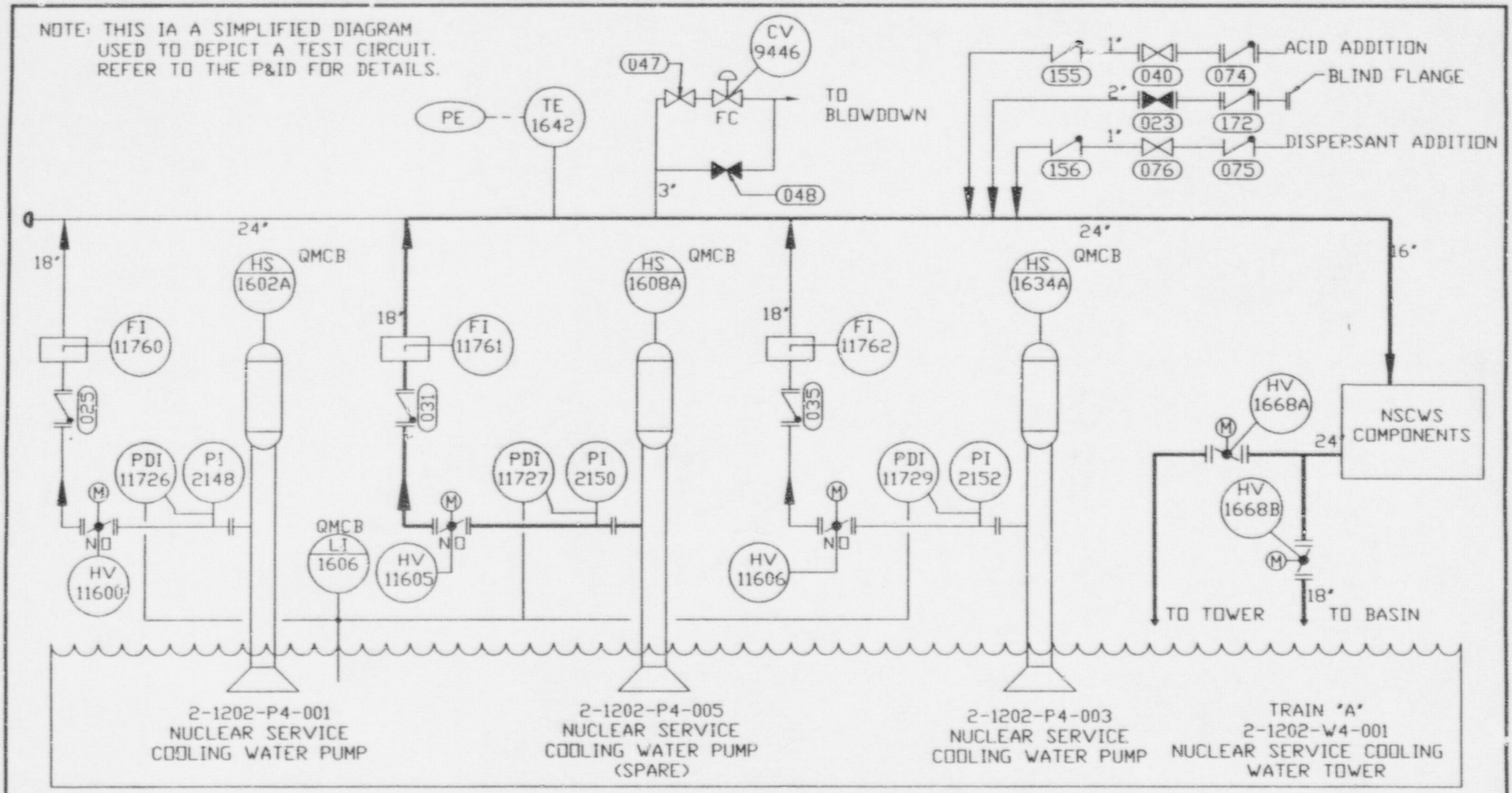
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 2-1202-P4-004

DESIGNED FT DRAWN BRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 253	1 OF 1	2
N/A			



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	WS	ISSUED FOR PSI*	FT				
1	1-26-88	NSS	RLB	UPDATED TO REV 26 OF 2X4D8133-1	JJC				
2	12-2-96	DWR		REDRAWN IN ACAD13	DWS				

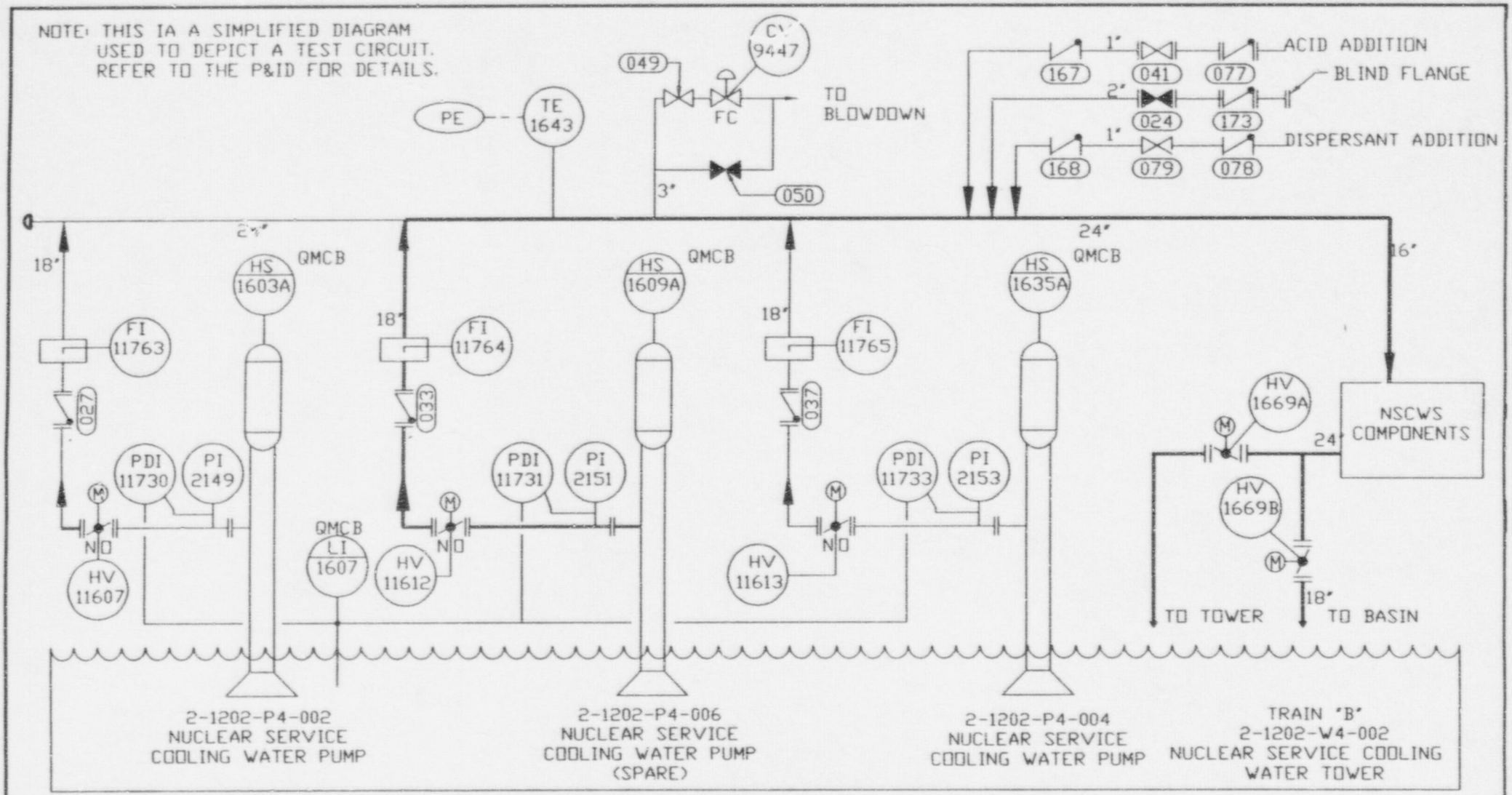
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 2-1202-P4-005

DESIGNED	FT	DRAWN	DRC	
TYPED		CHECKED	WS	
SCALE	NONE	CONTINUED ON SHEET		

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 254	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	RGS	VS	ISSUED FOR PST	FT				
1	1-26-88	MSS	RLB	UPDATE TO REV 19 OF 2X4D8133-2	JJC				
2	12-2-96	DVR		REDRAWN IN ACAD13	DMS				

REMARKS

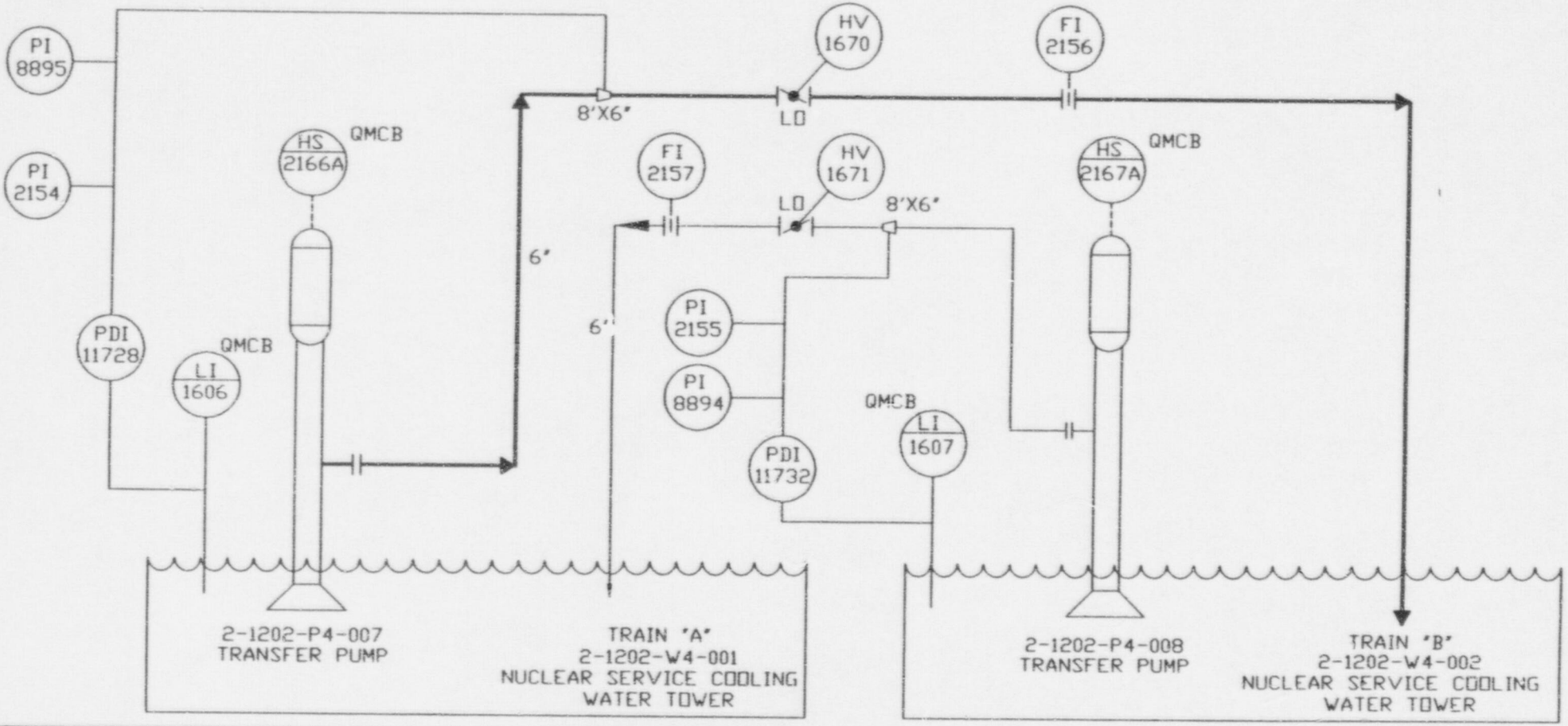
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR
NUCLEAR SERVICE COOLING WATER
PUMP 2-1202-P4-006

DESIGNED FT DRAWN DRC
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 255	1 OF 1	2

NOTE: THIS IS A SIMPLIFIED DIAGRAM USED TO DEPICT A TEST CIRCUIT. REFER TO THE P&ID FOR DETAILS



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-3-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	MSS	RLB	UPDATED TO REV. 20 2X4DB133-1 & REV. 19 2X4DB139-2	JJL				
2	6-14-88	TEV	JMA	ADDED PI-8894 & P-8895; DELETED MSCV HEADERS	JJC				
3	12-2-96	DVR	DWS	REDRAWN IN ACAD13	DWS				

REMARKS

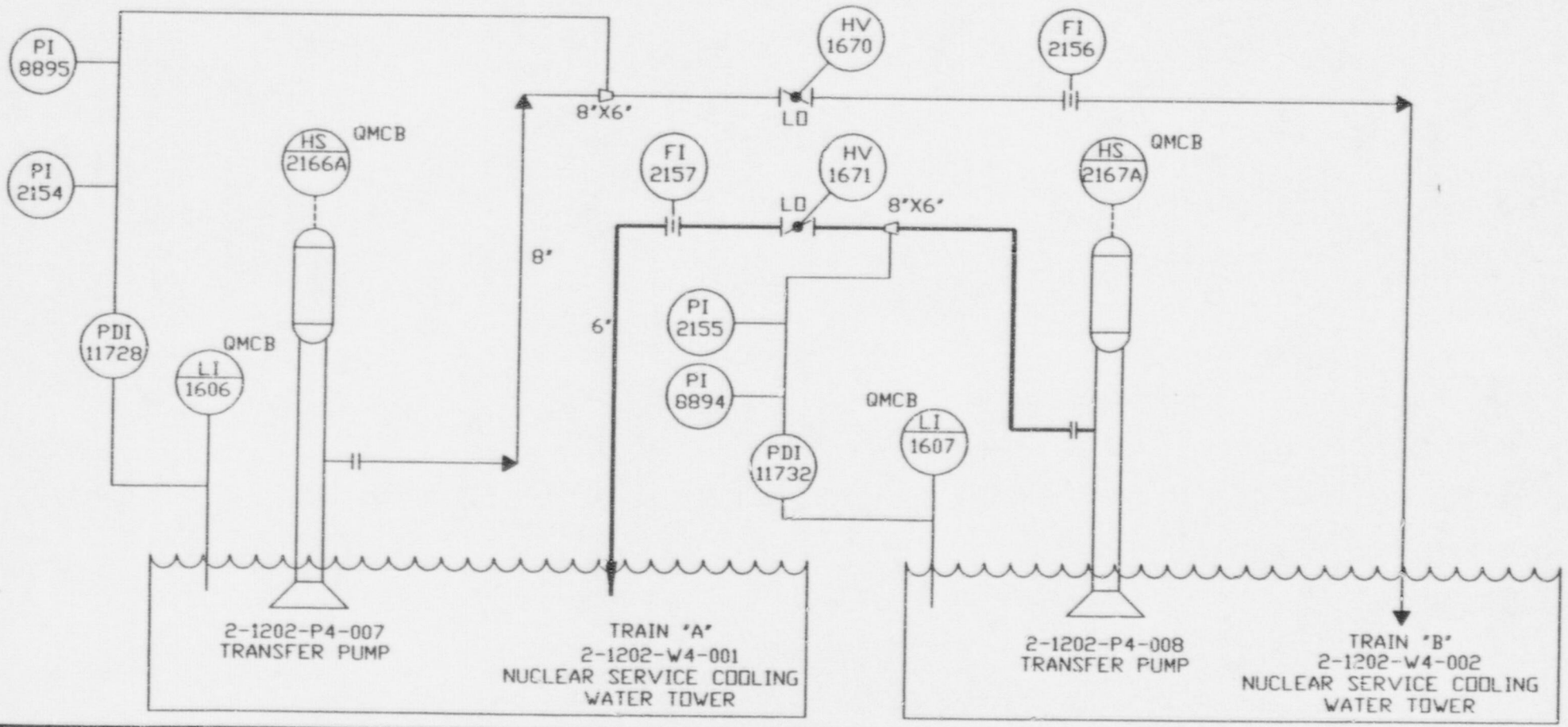
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE INSPECTION LOOP
FOR TRANSFER PUMP
2-1202-P4-007

DESIGNED	FT
DRAWN	DRC
TYPED	
CHECKED	VS
SCALE	NONE
CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 256	1 OF 1	3

NOTE: THIS IS A SIMPLIFIED DIAGRAM USED TO DEPICT A TEST CIRCUIT. REFER TO THE P&ID FOR DETAILS



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	WS	ISSUED FOR PST	FT				
1	1-26-88	MSS	RLS	UPDATED TO REV. 20 2X4DB133-1 & REV. 19 2X4DB133-2	JJC				
2	4-19-89	TEV	JMA	ADDED PI-8894 & P-8895; DELETED MSCV HEADERS	JJC				
3	12-2-96	DWR	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE INSPECTION LOOP
FOR TRANSFER PUMP
2-1202-P4-008

DESIGNED	FT	DRAWN	DRC	
TYPED		CHECKED	WS	
SCALE	NONE	CONTINUED ON SHEET		
	PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
	N/A	N/A	ISI-D- 257	1 OF 1	3

CCW Pumps
(2-1203-P4-001, 002, 003, 004, 005, & 006)

System Function	Remove waste heat from the spent fuel pool heat exchangers, RHR heat exchangers and the RHR pump seal coolers during plant operation, plant cooldown and during a postulated post-accident condition. This heat energy is then transferred by the component cooling water heat exchangers to the NSCWS. The CCWS functions as an intermediate system between a radioactive fluid system and the non-radioactive NSCWS, which operates at a higher system pressure. This arrangement greatly reduces the probability of radioactive fluid leakage to the enviroment by means of the NSCWS.
Quantity	6
Type	Horizontal, centrifugal, single-stage, split volute with mechanical seals
Manufacturer/Model	Ingersoll-Rand/10x18 SE
Rated Capacity	5000 gpm (each)
Rated Total Dynamic Head	160 feet
Driver	
Type	Electric Motor, Westinghouse, LAC-LLD, 5008-S
Horsepower	300
Speed	1761 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	2X4AF01-109 & 2X4AF01-110
Instruction Book	2X4AF01-137
Physical Location	Aux Bldg, Level A, Rooms R-A96 & R-A98
P&ID	2X4DB136
Surveillance Procedure	14803-2
Pump Test Loop Diagrams	ISI-D-258 through ISI-D-263
Test Parameter Sheets	Page 16-3 through 16-8

Test Parameter Table - Pump 2-1203-P4-001
(Figure ISI-D-258)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1878	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1858	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11794	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1203-P4-002
(Figure ISI-D-259)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Instrumentation Utilized Range	Instrumentation Utilized Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1881	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1859	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11795	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1203-P4-003
(Figure ISI-D-260)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1879	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1860	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11796	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1203-P4-004
(Figure ISI-D-261)

Parameter	Test Freq.	Instrumentation Utilized			Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
		I.D. No.(3)	Range	Req. Acc.					
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1882	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1861	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11797	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1203-P4-005
(Figure ISI-D-262)

Parameter	Test Freq.	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	Comments
		I.D. No.(3)	Range	Req. Acc.	Value	Range	Range	Range	
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1880	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1862	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11798	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

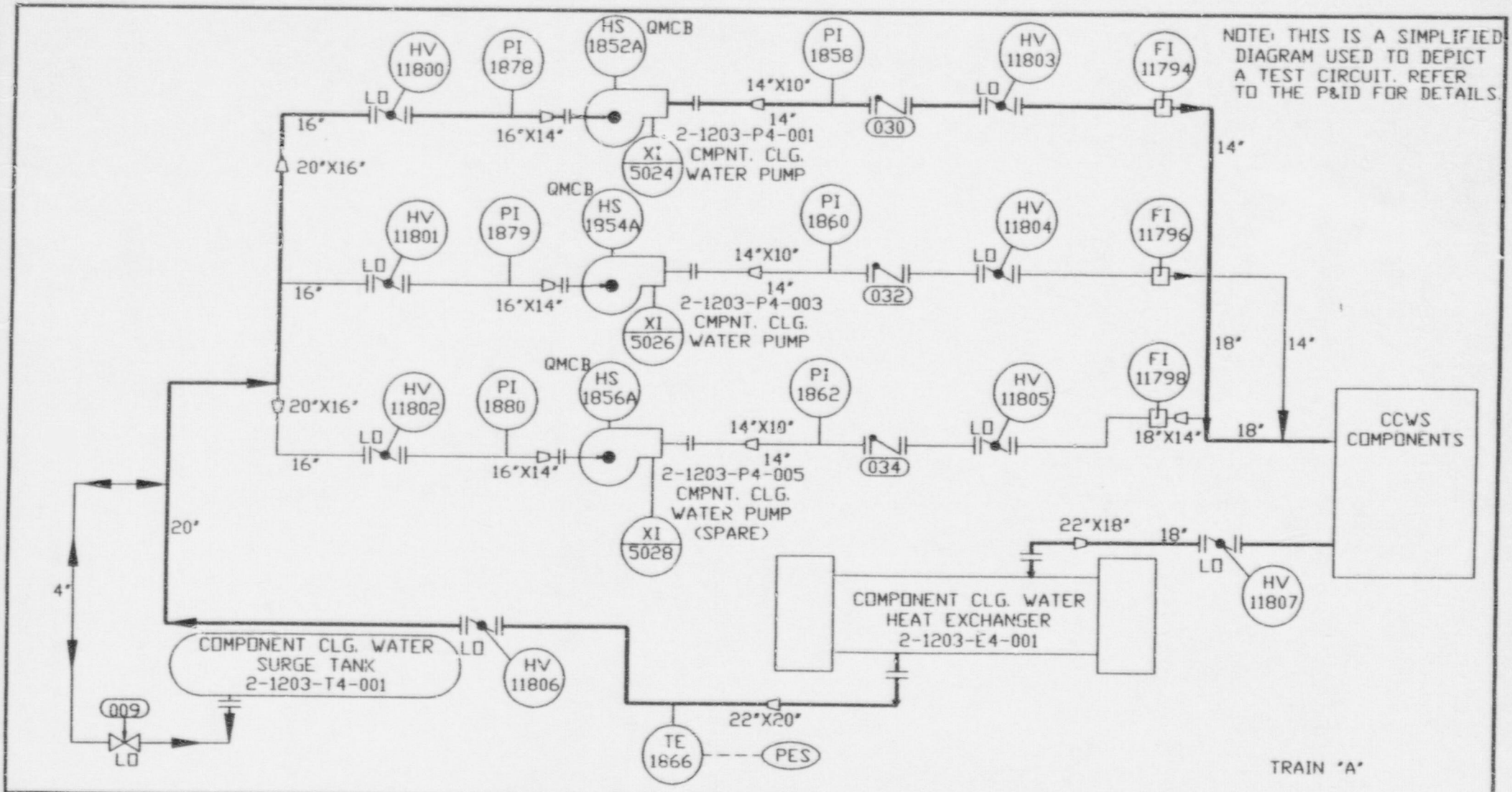
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1203-P4-006
(Figure ISI-D-263)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-1883	0-60 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-1863	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-11799	0-10000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



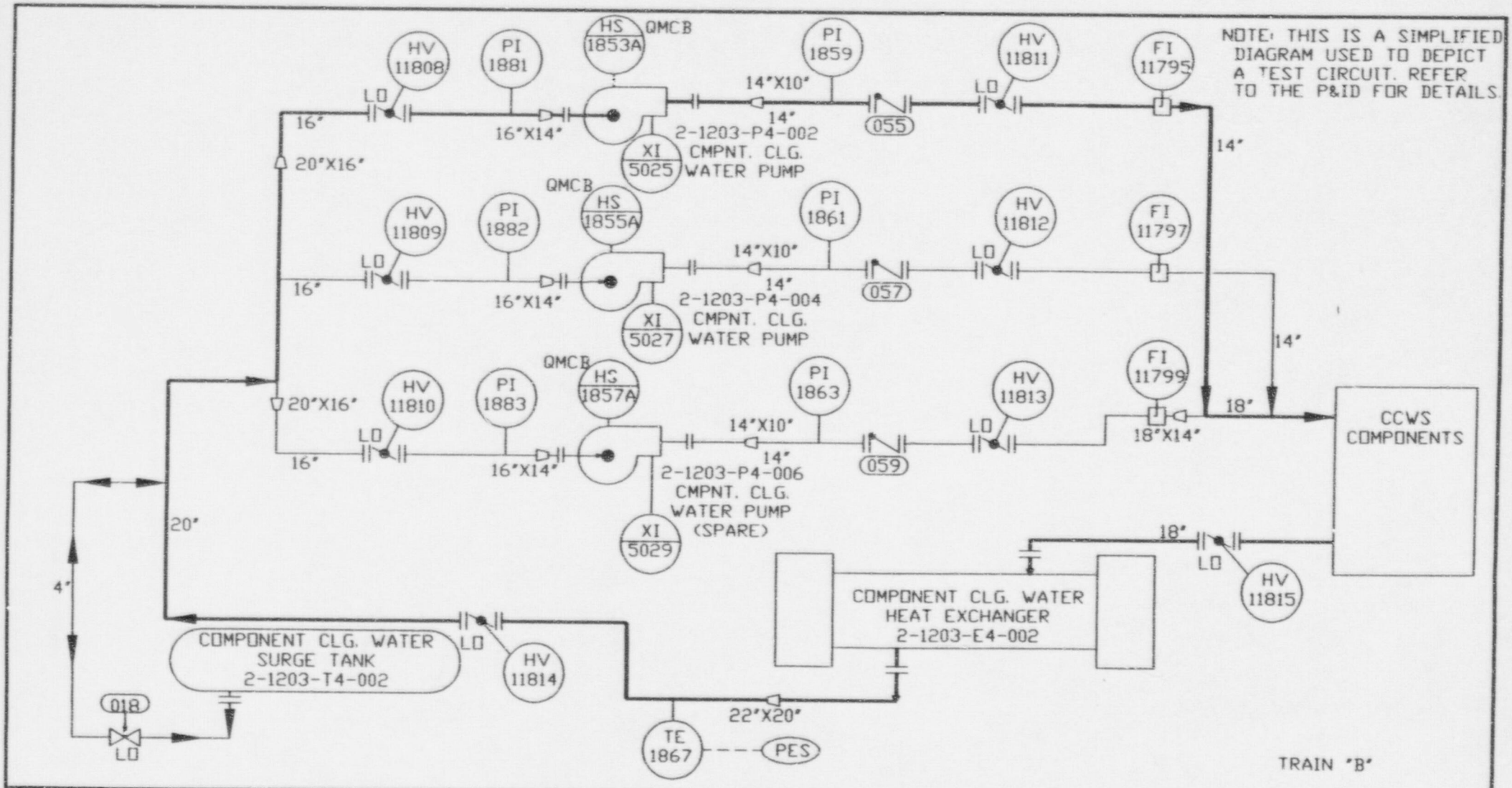
REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5	REMARKS
0	9-5-84	BGS	WS	ISSUED FOR PST	FT					
1	1-26-88	MSS	RLB	UPDATED TO REV. 14 OF 2X4DB136	JJC					
2	12-2-96	BVR	DMJ	REDRAWN IN ACAD13	DMJ					

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP 2-1203-P4-001

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 258	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-9-94	BGS	WS	ISSUED FOR PST	FT				
1	1-26-99	MSS	RLB	UPDATED TO REV. 14 OF 2X4DB136	JJC				
2	12-2-96	DVR	DMS	REDRAWN IN ACAD13	DMS				

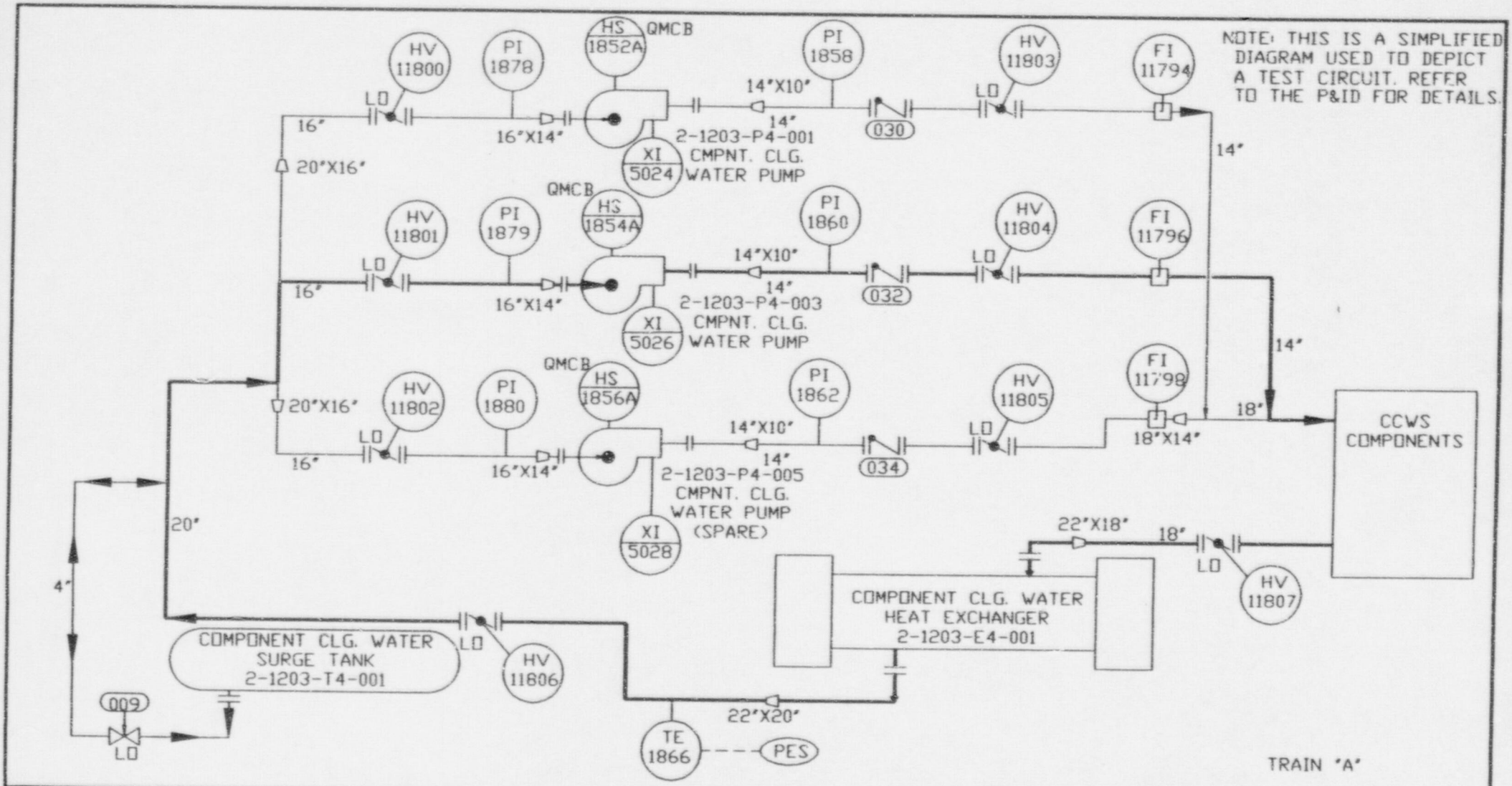
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP 2-1203-P4-002

DESIGNED FT | DRAWN DRC | TYPED | CHECKED WS | SCALE NONE | CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 259	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-3-84	BGS	WS	ISSUED FOR PST	FT				
1	1-26-88	MES	RLB	UPDATED TO REV. 14 OF 2X4DB136	JJC				
2	12-2-96	DVR	DMS	REDRAWN IN ACAD13	DMS				

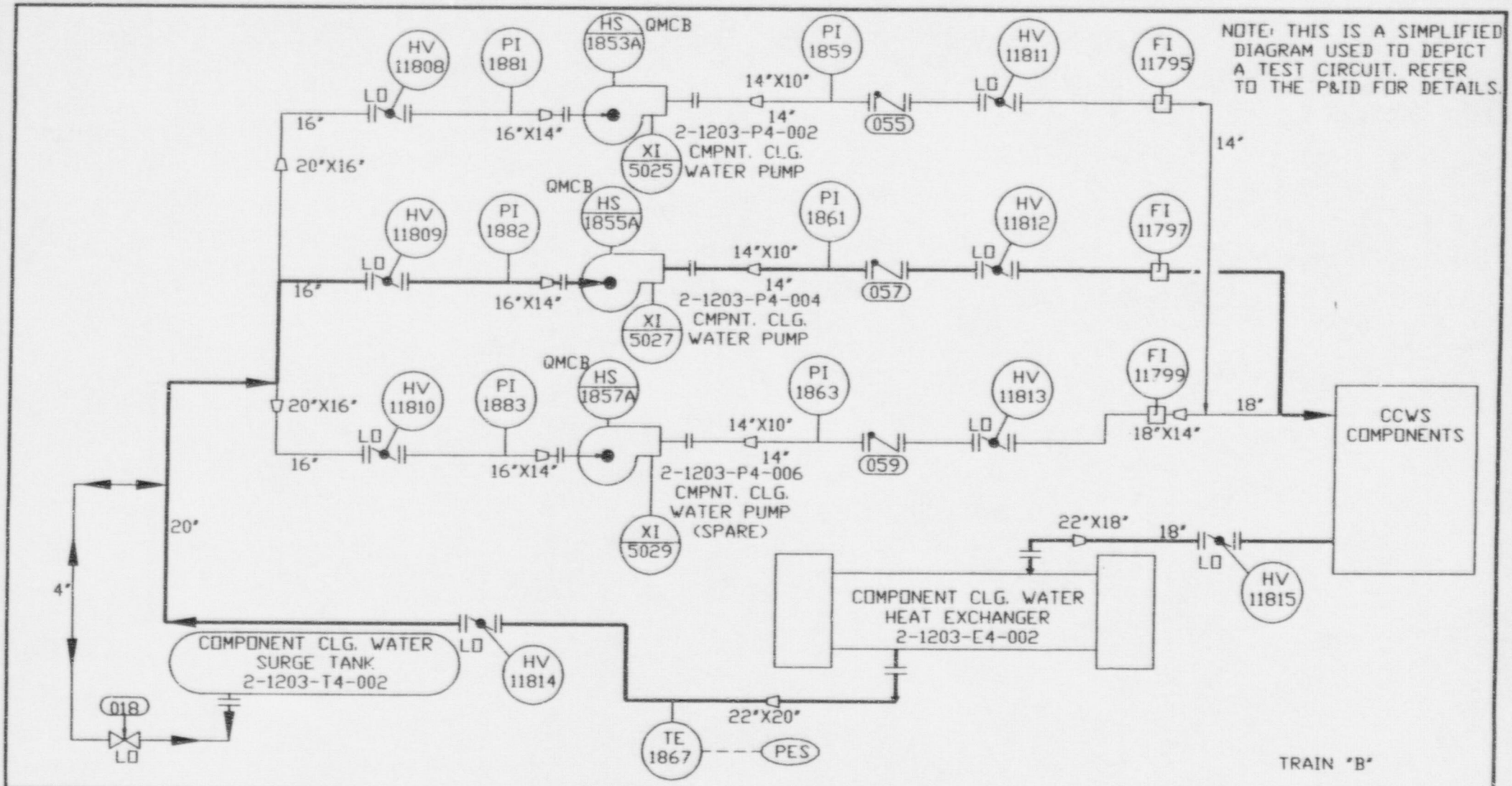
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP
2-1203-P4-003

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 260	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-3-84	BGS	VS	ISSUED FOR PST	FT				
1	1-25-88	CL	RLB	UPDATED TO REV. 14 OF 2X4DB136	JJC				
2	12-2-96	SVR	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

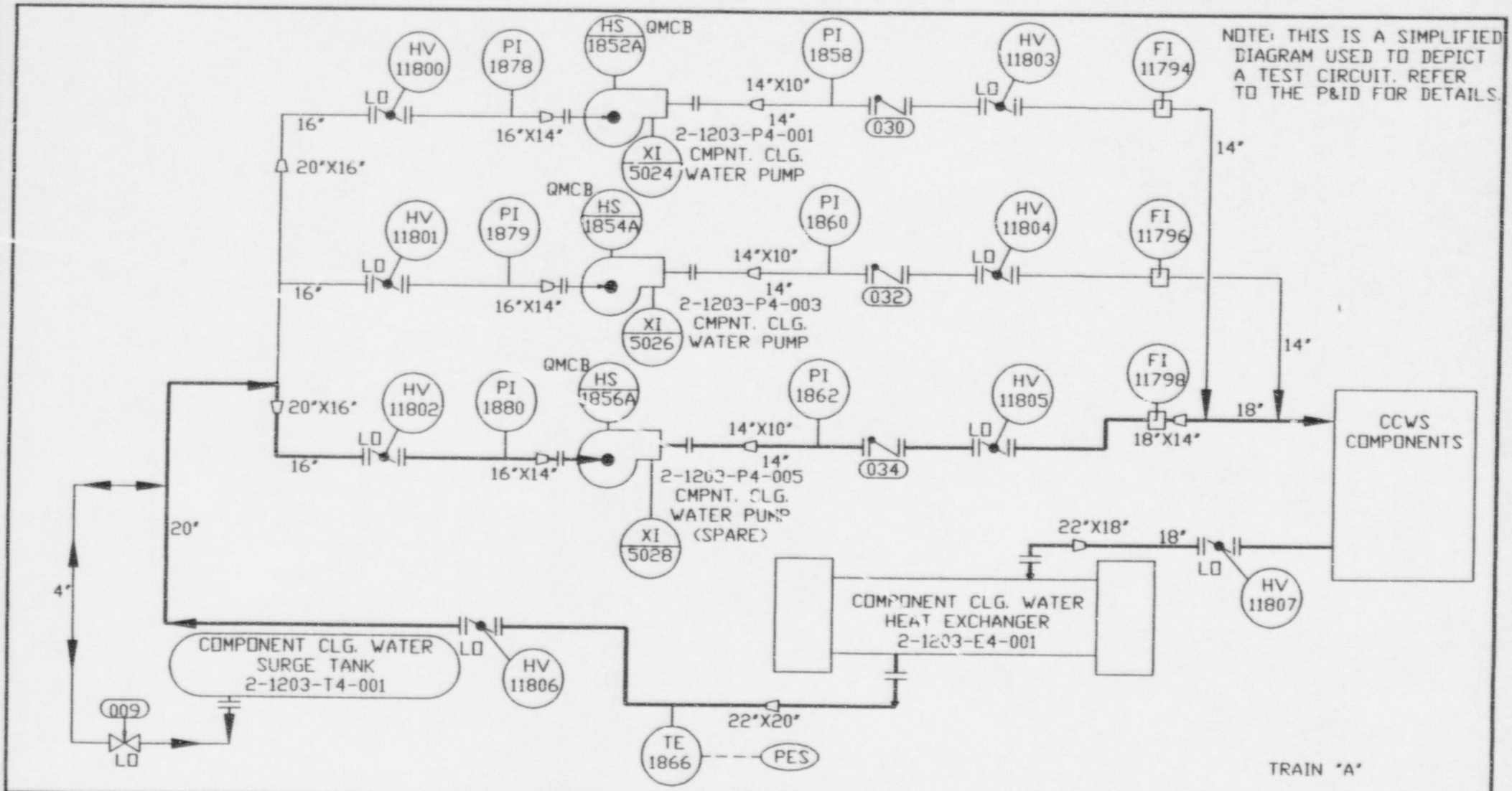
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2

PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP 2-1203-P4-004

DESIGNED FT DRAWN DRC
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJECT	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 261	1 OF 1	2
N/A			



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	RGS	VS	ISSUED FOR PST	FT				
1	1-26-88	CL	RLB	UPDATED TO REV. 14 OF EX4D3136	JJC				
2	12-2-96	DVR	DMS	REDRAWN IN ACAD13	DMS				

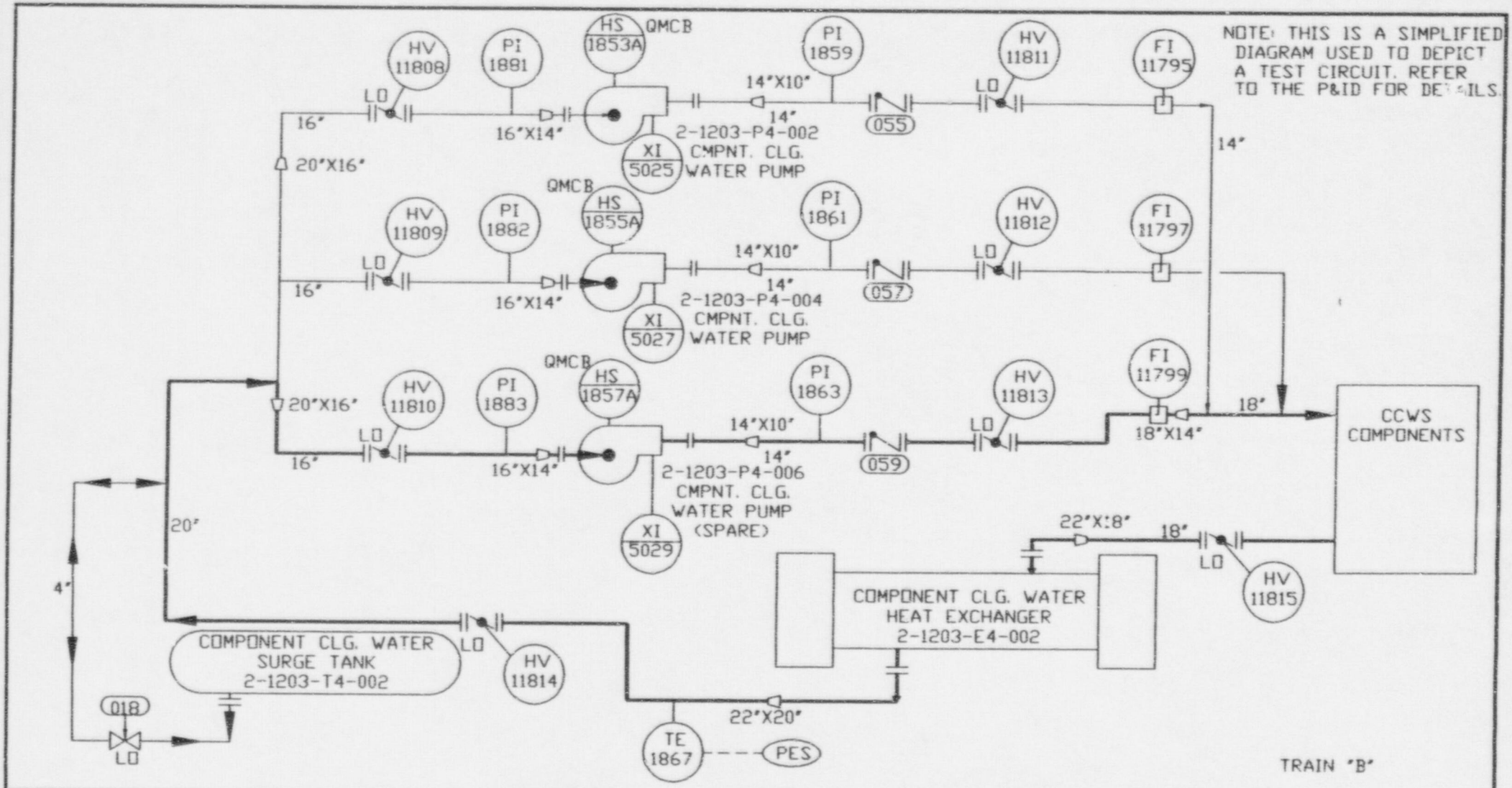
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP 2-1203-P4-005

DESIGNED FT | DRAWN DRC
TYPED | CHECKED VS
SCALE NONE | CONTINUED ON SHEET

PROJ.#	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 262	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-3-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	C.L.	RLB	UPDATED TO REV. 14 OF 2X4DB136	JJC				
2	12-2-96	DVR	DWS	REDRAWN IN ACAD13	DWS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR COMPONENT COOLING WATER PUMP
2-1203-P4-006

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	VS
SCALE	NONE	CONTINUED ON SHEET	

	PROJ.NO.	DRAWING NUMBER	SHEET	REV.
	N/A	N/A	ISI-D-263	1 OF 1	2

SI Pumps
(2-1204-P6-003, & 004)

System Function	The SI system provides emergency core cooling and serves no other purpose. The primary function of the ECCS is to remove the stored and fission product decay heat from the reactor core following an accident in order to prevent fuel rod damage.
Quantity	2
Type	Horizontal, centrifugal, 11-stage
Manufacturer/Model	Pacific Model 3-in., JHF
Rated Capacity	440 gpm
Rated Head	2630 ft.
Driver	
Type	Electric Motor, Westinghouse, Frame 5809 H
Horsepower	450
Speed	3600 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	2
Project Class	212
Outline Drawing	2X6AG02-10, 13 & 15
Instruction Book	2X6AG02-016
Physical Location	Aux Bldg, Level B, Rooms R-B117 & R-B119
P&ID	2X4DB121
Surveillance Procedure	14804-2
Pump Test Loop Diagrams	ISI-D-264 & ISI-D-265
Test Parameter Sheets	Page 17-2 & 17-3

Test Parameter Table - Pump 2-1204-P6-003
(Figure ISI-D-264)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-0977	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	Test Gage	NA	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0968	0-100 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

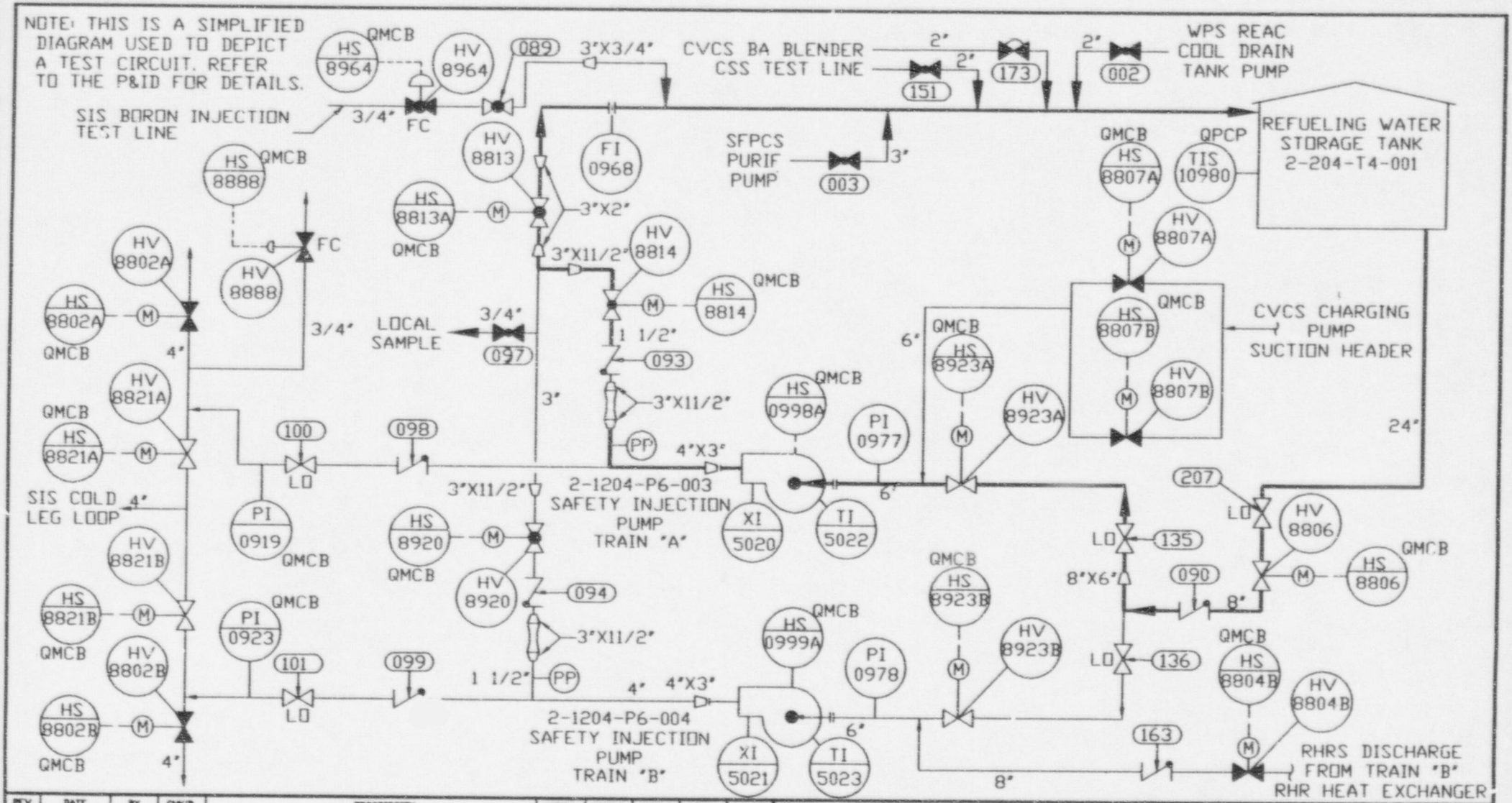
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1204-P4-004
(Figure ISI-D-265)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-0978	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	Test Gage	NA	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0968	0-100 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	CL	RLB	UPDATED TO REV. 29 OF 2X4DB121	JJC				
2	12-2-96	DWR	DMS	REDRAWN IN ACAD13	DMS				

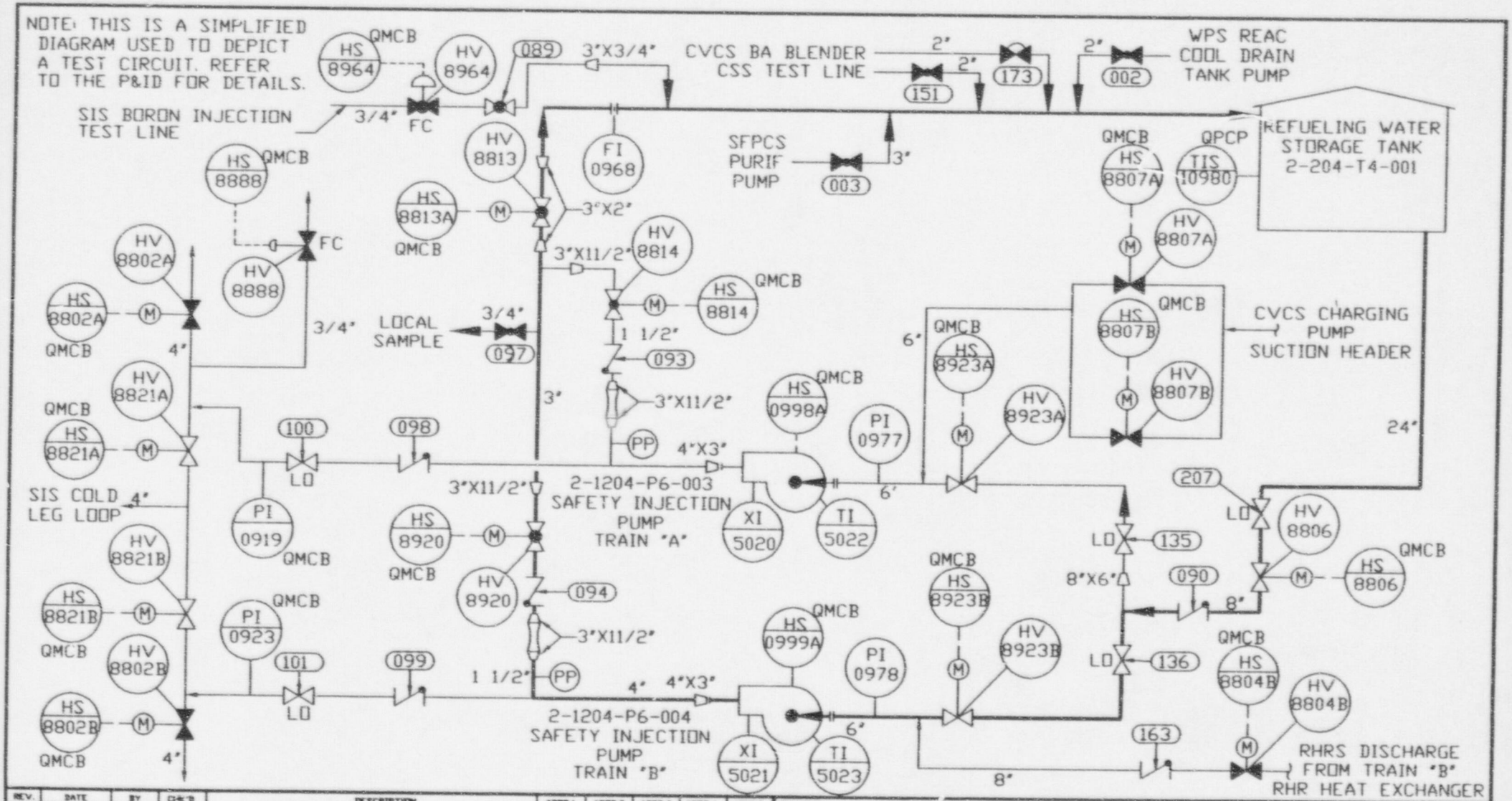
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR SAFETY INJECTION PUMP
2-1204-P6-003

DESIGNED FT DRAWN BRC
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 264	1 OF 1	2



REV.	DATE	BY	CH'K'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	5-24-84	BGS	WS	ISSUED FOR PST	FT				
1	1-26-88	C.L.	RLB	UPDATED TO REV. 20 OF 2X4DB121	JJC				
2	12-2-96	DVR	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR SAFETY INJECTION PUMP 2-1204-P6-004

DESIGNED FT DRAWN DRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.#	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 265	1 OF 1	2

RHR Pumps
(2-1205-P6-001, & 002)

System Function	The primary function is to remove heat energy from the reactor core and reactor coolant system during plant cooldown and refueling operations. As a secondary function, RHR is used to transfer refueling water between the refueling water storage tank and the refueling cavity at the beginning and end of refueling operations. Portions of the RHR system also serve as part of the ECCS during the injection and recirculation phases of a LOCA.
Quantity	2
Type	Vertical, centrifugal, single stage
Manufacturer/Model	Ingersoll-Dresser, 8X20WDF
Rated Capacity	3000 gpm
Rated Head	375 ft.
Driver	
Type	Westinghouse LLD squirrel-cage induction motor
Horsepower	400
Speed	1780 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	2
Project Class	212
Outline Drawing	AX6AF02-20007
Instruction Book	AX6AF02-20030
Physical Location	Aux Bldg, Level D, Rooms R-D21 & R-D22
P&ID	2X4DB122
Surveillance Procedure	14805-2 & 14812-2
Pump Test Loop Diagrams	ISI-D-266 & ISI-D-267
Test Parameter Sheets	Page 18-2 & 18-3

Test Parameter Table - Pump 2-1205-P6-001
(Figure ISI-D-266)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-8884	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-8886	0-400 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0618A	0-5000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1205-P6-002
(Figure ISI-D-216)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-8885	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-8887	0-400 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0619A	0-5000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

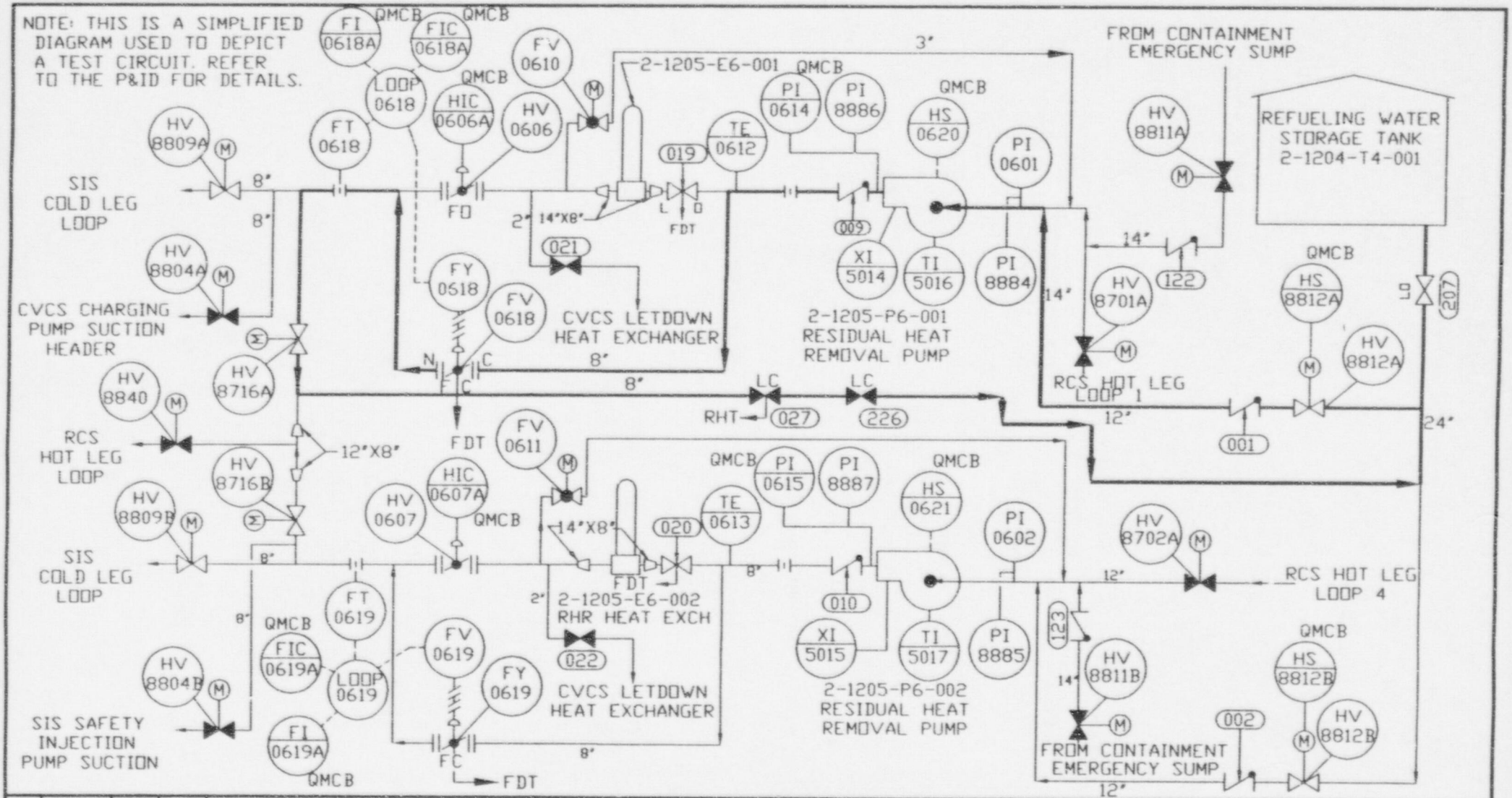
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1205-P6-002
(Figure ISI-D-216)

Parameter	Test Freq.	Instrumentation Utilized			Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
		I.D. No.(3)	Range	Req. Acc.					
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-8885	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-8887	0-400 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0619A	0-5000 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of GPC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



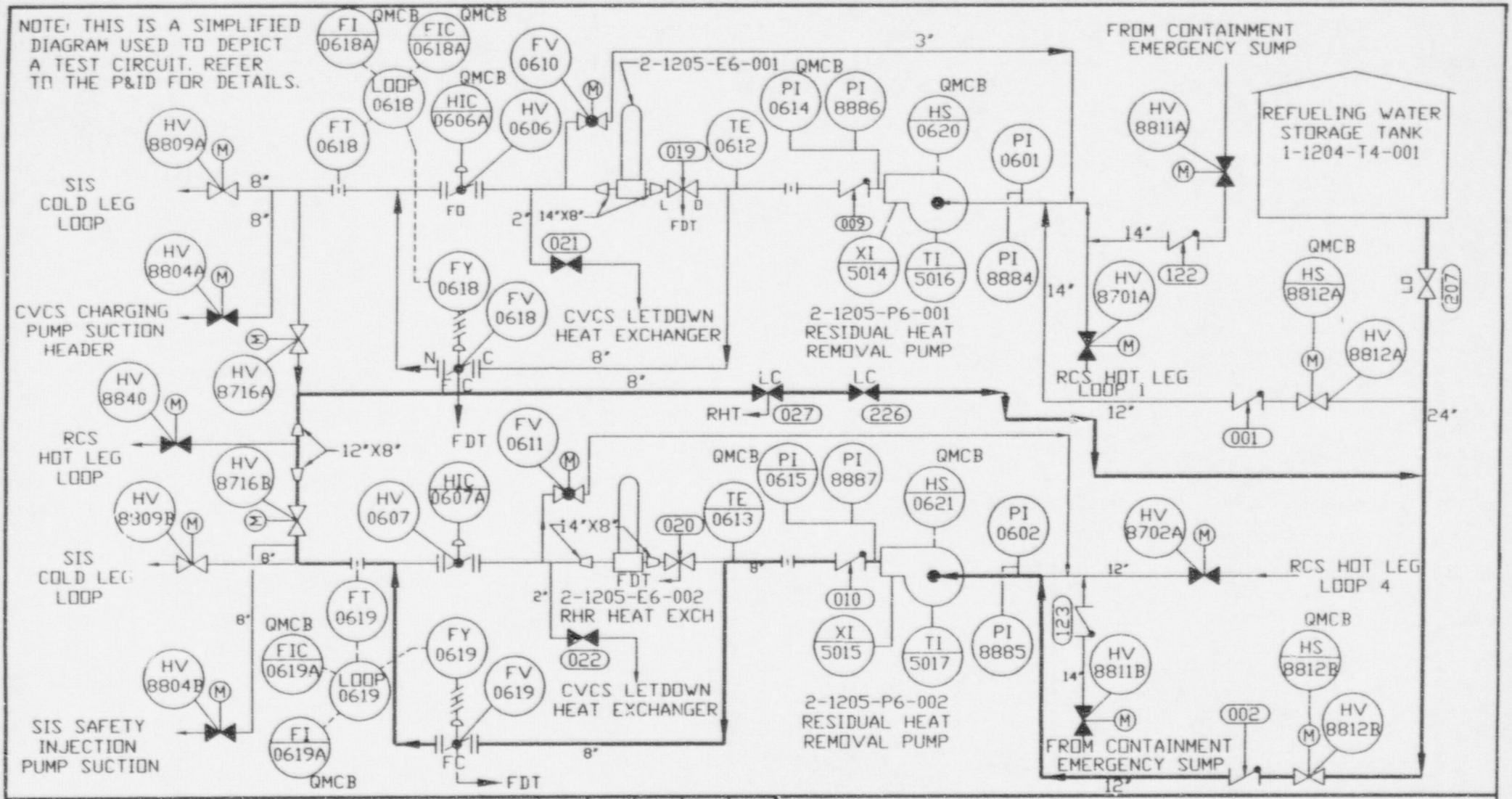
REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	C.L.	R.L.B	UPDATED TO REV.17 OF 2X4DB122	JJC				
2	4-19-89	TEV	JWA	ADDED PI - 8884, & 8885, & 8886, & 8887	JJC				
				DELETED MINI-FLOW TEST					
3	12-2-96	JWB		REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR RESIDUAL HEAT REMOVAL PUMP
2-1205-P6-001

DESIGNED	FT	DRAWN	DRC	
TYPED		CHECKED	VS	
SCALE	NONE	CONTINUED ON SHEET		
PROJ.I.D.		DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 266	1 OF 1	3



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	CL	RLB	UPDATED TO REV.17 OF 2X4DB122					
2	4-19-89	TEV	JMA	ADDED PI - 8884, & 8885, & 8886, & 8887					
				DELETED MINI-FLOW TEST					
3	12-2-96	BWR		REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR RESIDUAL HEAT REMOVAL PUMP
2-1205-P6-002

DESIGNED FT | DRAWN DRC
TYPED | CHECKED VS
SCALE NONE | CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 267	1 OF 1	3

CS Pumps
(2-1206-P6-001, & 002)

System Function	Containment spray limits the peak pressure in the containment to less than design pressure following a LOCA or a main steam line break inside containment. Trisodium phosphate is mixed with recirculated spray water in the containment sump region for pH control and to enhance absorption of the airborne fission product iodine and to retain the iodine in the containment sump solution to limit calculated offsite doses to less than 10CFR100 limits.
Quantity	2
Type	Horizontal, centrifugal
Manufacturer/Model	Goulds Model 3415
Capacity	2600 gpm
Total Dynamic Head	450 ft.
Driver	
Type	Westinghouse electric motor, Frame 5010S
Horsepower	400
Speed	1777 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	2
Project Class	212
Outline Drawing	2X6AD02-10
Instruction Book	2X6AD02-18
Physical Location	Aux Bldg, Level D, Rooms R-D04 & R-D05
P&ID	2X4DB131
Surveillance Procedure	14806-2
Pump Test Loop Diagrams	ISI-D-268 & ISI-D-269
Test Parameter Sheets	Page 19-2 & 19-3

Test Parameter Table - Pump 2-1206-P6-001
(Figure ISI-D-268)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-0972	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-0974	0-300 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0929	0-400 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

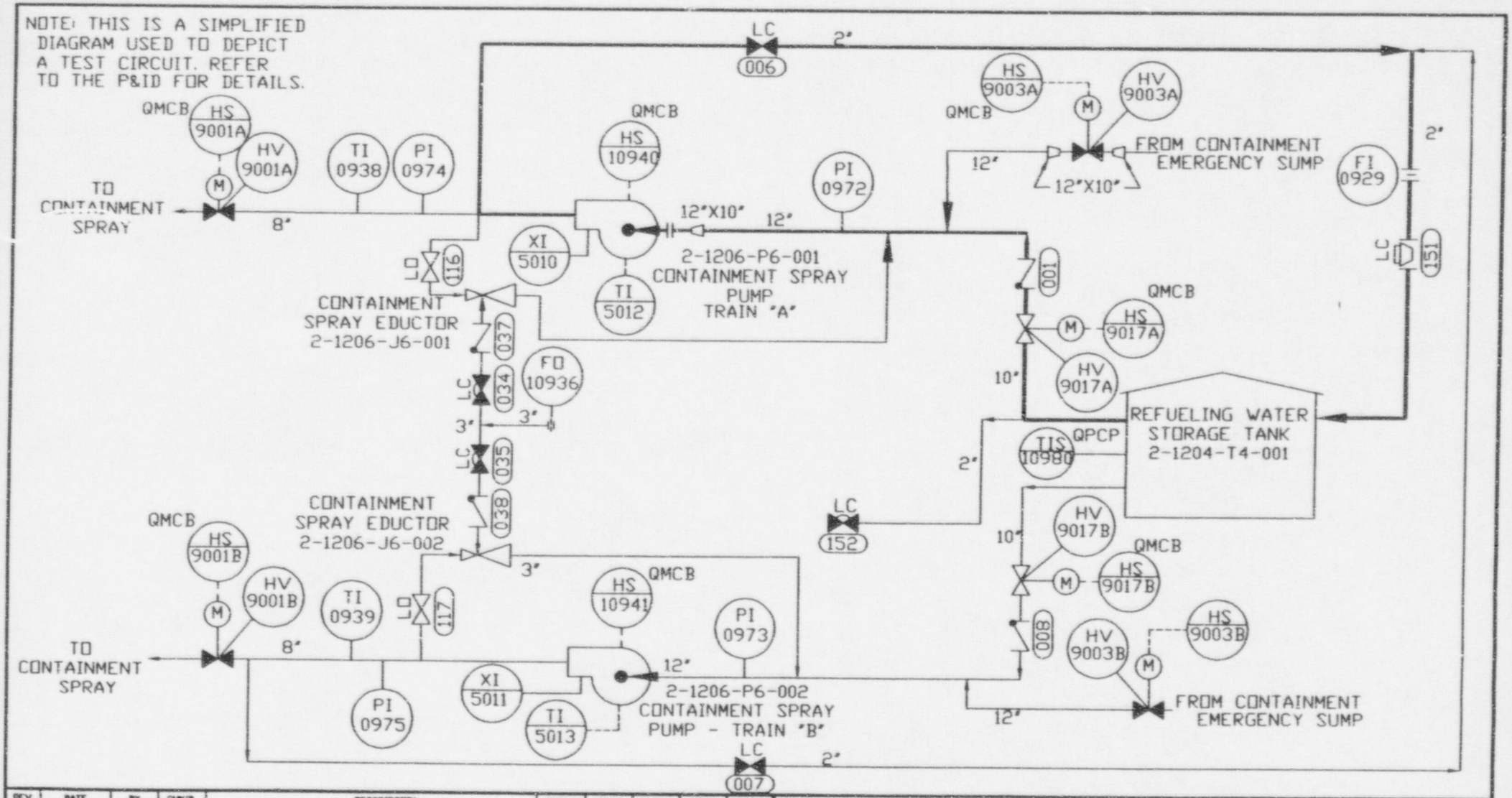
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1206-P6-002
(Figure ISI-D-269)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-0973	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-0975	0-300 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-0929	0-400 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-3-84	BDS	VS	ISSUED FOR PST	FT				
1	1-26-88	CL	RLB	UPDATED TO REV.15 OF 2X4DB131	JJC				
2	4-19-89	TEV	JMA	REVISED VALVES - 006,007 & 151	JJC				
3	11-13-95	VS	DMS	REMOVED SPRAY ADDITIVE TK & VALVES 029, 0994A AND B	DMS				
				CHANGED FI 0930 TO FO 10936					
4	12-2-96	BVR	[illegible]	REDRAWN IN ACAD13	[illegible]				

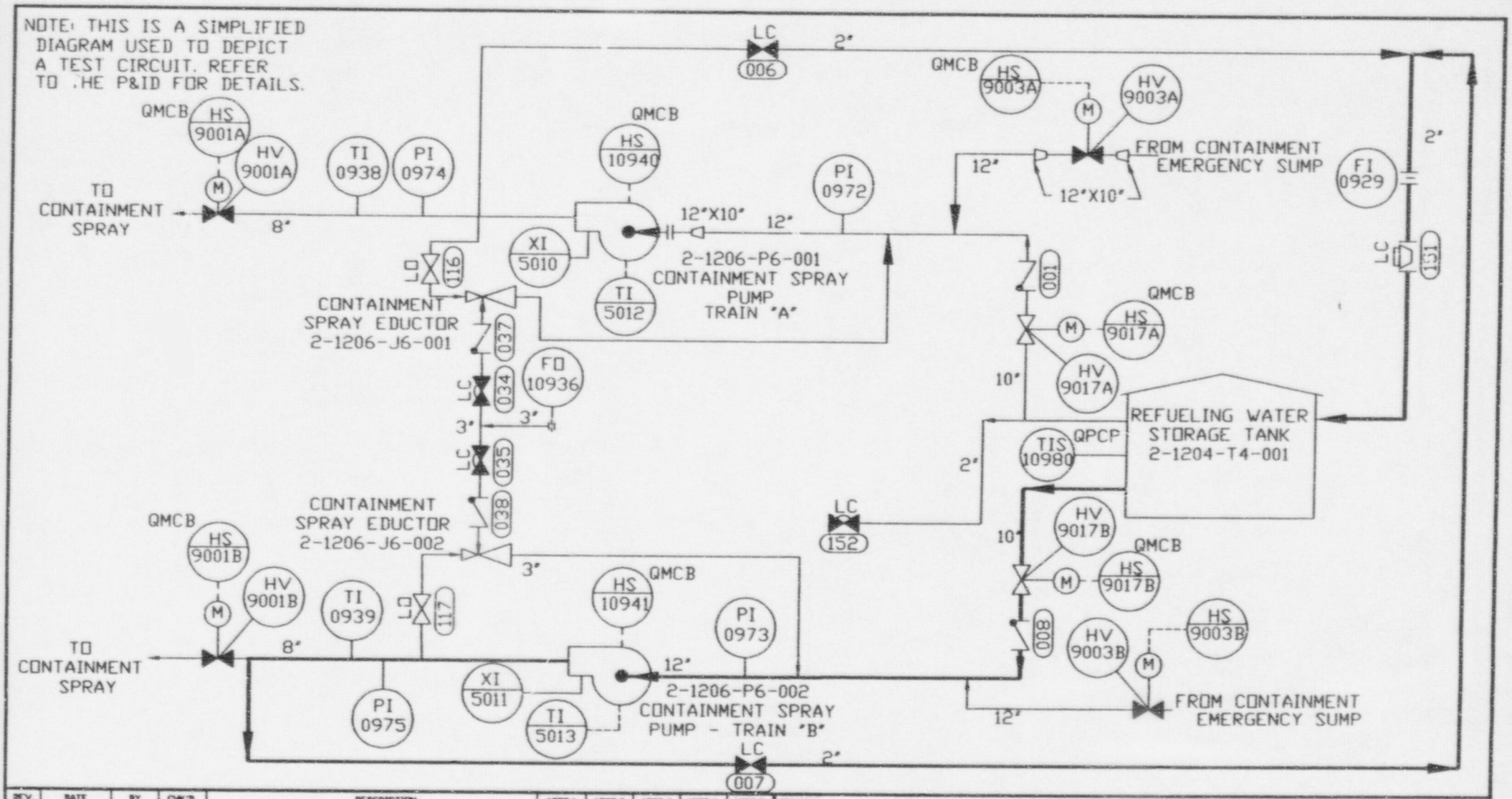
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP FOR CONTAINMENT SPRAY PUMP 2-1206-P6-001

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	VS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 268	1 OF 1	4



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-3-84	BGS	WS	ISSUED FOR FST	FT				
1	1-25-88	C.L.	RLB	UPDATED TO REV.15 OF 2X4DB131	JJC				
2	4-19-89	TEV	JMA	REVISED VALVES - 006,007 & 151	JJC				
3	11-13-90	WS	DMS	REMOVED SPRAY ADDITIVE TK & VALVES 829, 8994A AND B	DMS				
				CHANGED FI 0930 TO FO 10936					
4	12-2-96	BVR	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR CONTAINMENT SPRAY PUMP
2-1206-P6-002

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 269	1 OF 1	4

CVCS Pumps
CENTRIFUGAL CHARGING PUMPS
(2-1208-P6-002, & 003)

System Function	The primary functions of the CVCS are to: • Regulate reactor coolant chemistry for reactivity and corrosion control • Maintains the water level in the pressurizer of the RCS • Maintains seal-water injection flow to the reactor coolant pump • Provide a means of filling, draining and pressure testing the RCS • Provide injection flow to the RCS following actuation of SIS
Quantity	2
Type	Horizontal, centrifugal, 11 stage
Manufacturer/Model	Pacific, IJ 2-1/2 in., RL
Capacity	150 gpm
Total Dynamic Head	5800 ft.
Driver	
Type	Westinghouse electric motor
Horsepower	600
Speed	1800 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	2
Project Class	212
Outline Drawing	2X6AH02-100
Instruction Book	2X6AH02-85
Physical Location	Aux Bldg, Level C, Rooms R-C16 & R-C17
P&ID	2X4DB116-2
Surveillance Procedure	14808-2
Pump Test Loop Diagrams	ISI-D-270 & ISI-D-271
Test Parameter Sheets	Page 20-2 & 20-3

Test Parameter Table - Pump 2-1208-P6-002
(Figure ISI-D-270)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-8891	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-8472	0-4000 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-10120	0-80 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

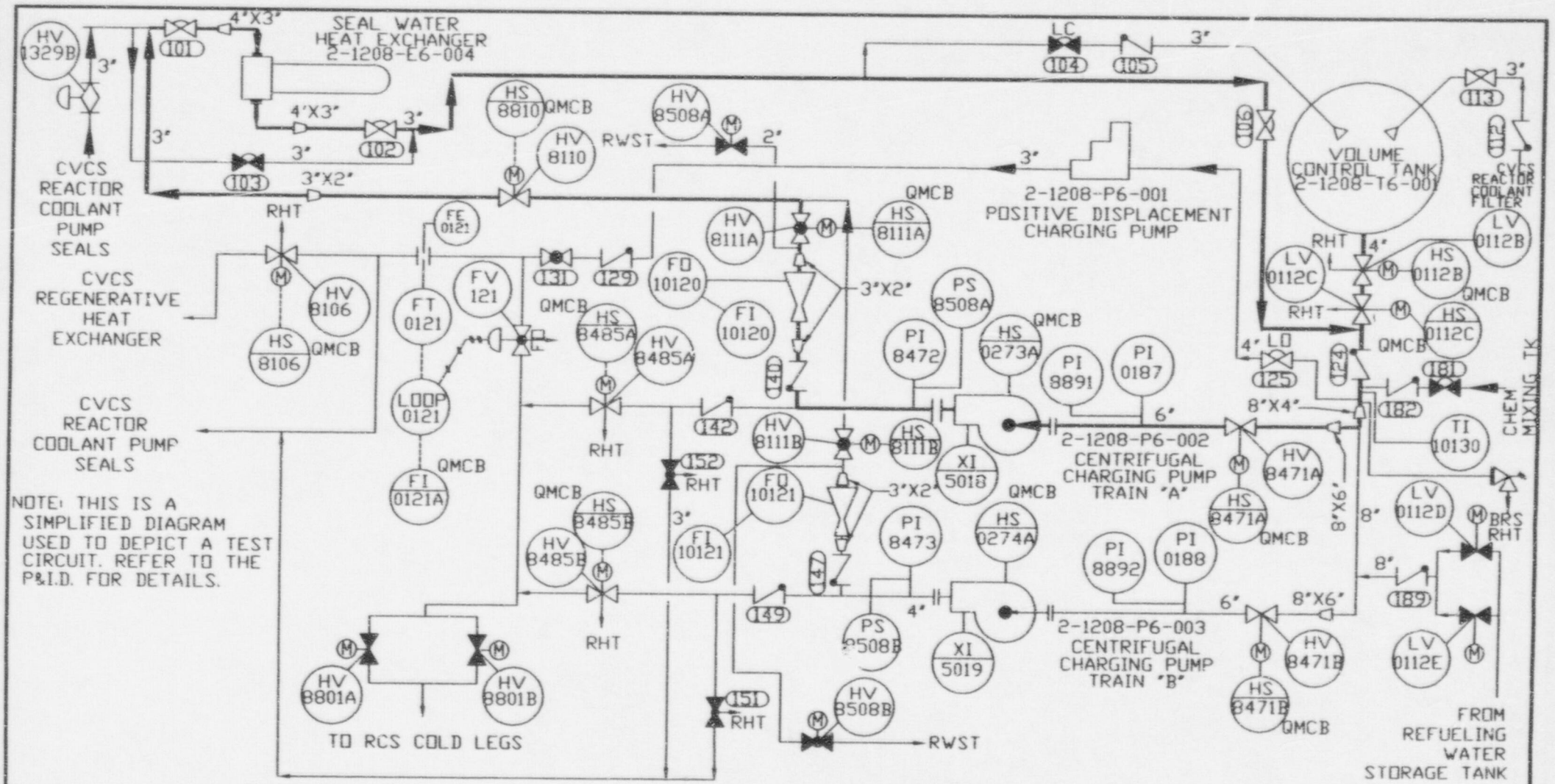
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing

Test Parameter Table - Pump 2-1208-P6-003
(Figure ISI-D-271)

Parameter	Test Freq.	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	Comments
		I.D. No.(3)	Range	Req. Acc.	Value	Range	Range	Range	
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-8892	0-100 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-8473	0-4000 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-10121	0-80 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



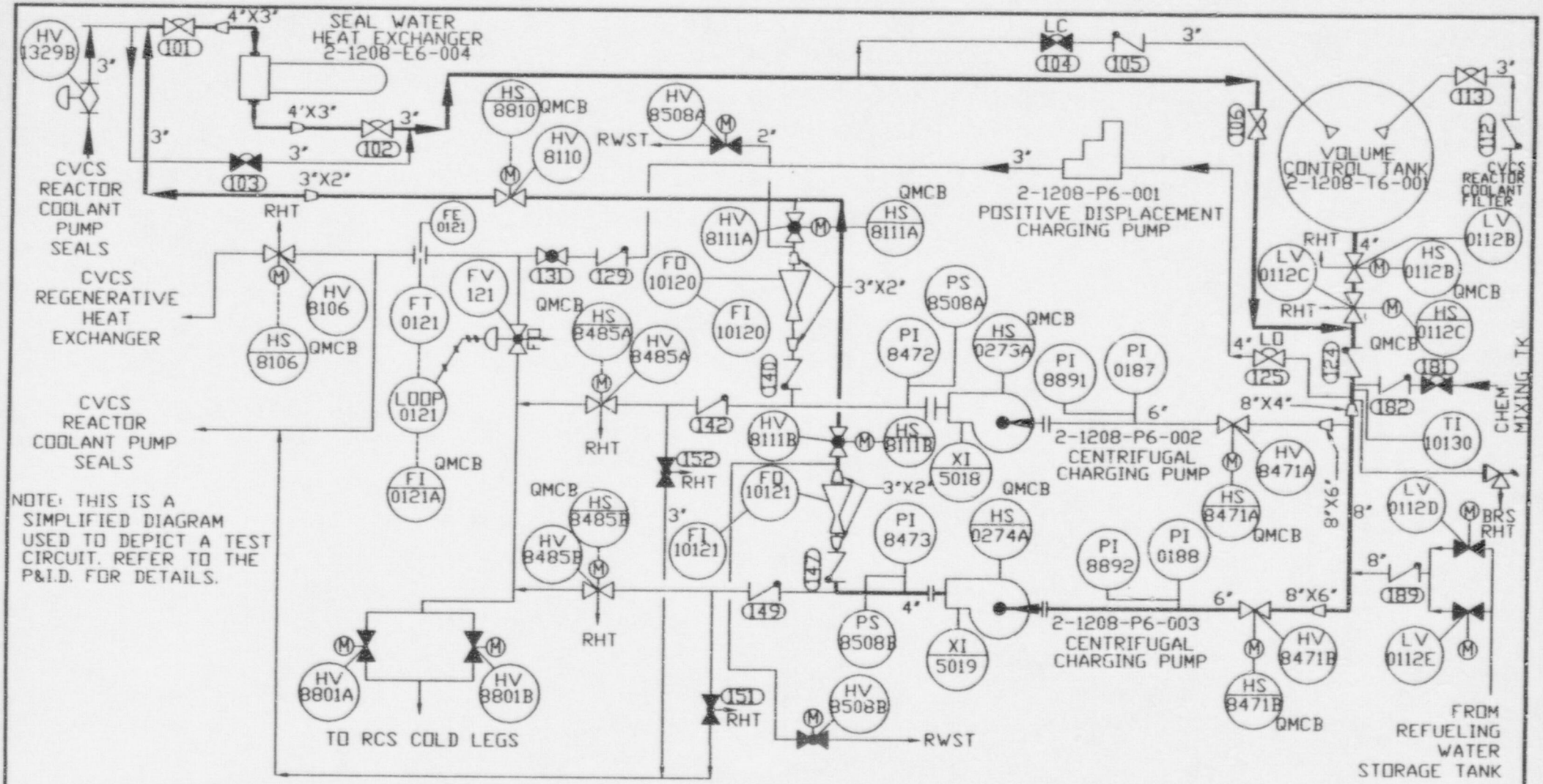
REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	C.L.	RLB	UPDATED TO REV.13 OF 2X4DB116-2	JJC				
2	4-19-89	TEV	JRA	ADDED PI 8891, 8892	JJC				
3	12-6-93	VS	MRG	RELOCATED 2" BRANCH CONN'S ; ADDED PS 8508A & B	MB				
4	11-13-95	VS	DMS	CHANGED PI 118 AND PI 119 TO PI 8472 AND PI 8473	DMS				
5	12-2-96	DVR	DAS	REDRAWN IN ACAD13	DAS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR CENTRIFUGAL CHARGING PUMP
2-1208-P6-002

DESIGNED	FT	DRAWN	DRC		
TYPED		CHECKED	VS		
SCALE	NONE	CONTINUED ON SHEET			
	PROJ.I.D.	DRAWING NUMBER		SHEET	REV.
	N/A	N/A	ISI-D- 270	1 OF 1	5



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	WS	ISSUED FOR PST	FT				
1	1-06-88	C.L.	RLB	UPDATED TO REV.15 OF 2X4DB116-2	JJC				
2	4-19-89	TEV	JWA	ADDED PI 8891, 8892	JJC				
3	12-2-93	WS	BRG	RELOCATED 2" BRANCH CONN'S ; ADDED PS 8508A & B	MB				
4	11-13-95	WS	DMS	CHANGED PI 118 AND PI 119 TO PI 8472 AND PI 8473	DMS				
5	12-2-96	DVR	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR CENTRIFUGAL CHARGING PUMP
2-1208-P6-003

DESIGNED	FT	DRAWN	DRC
TYPED		CHECKED	WS
SCALE	NONE	CONTINUED ON SHEET	

PROJ.#	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D-- 271	1 OF 1	5

BORIC ACID TRANSFER PUMPS
(2-1208-P6-006 & 007)

System Function	Provides boric acid to the CVCS for use in RCS inventory control and makeup to systems requiring reactor grade borated water. The boric acid transfer system also provides boric acid for emergency boration of the RCS.
Quantity	2
Type	Canned motor
Manufacturer/Model	Chempump Model GVH-1K
Design Flowrate	75 gpm
Design Head	235 ft.
Driver	
Type	Electric motor
kW	15.5
Speed	3450 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	2X6AH02-45 & 2X6aH02-92
Instruction Book	2X6AA07-10
Physical Location	Aux Bldg, Level D, Rooms R-D106 & R-D123
P&ID	2X4DB118
Surveillance Procedure	14811-2
Pump Test Loop Diagrams	ISI-D-277 & ISI-D-278
Test Parameter Sheets	Page 21-2 & 21-3

Test Parameter Table - Pump 2-1208-P6-006
(Figure ISI-D-277)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-10115	-15 to +15 psig	± 2%	NA	NA	NA	NA	Relief Request RR-P-1
Outlet Pressure (Po)	Qtr	PI-0113	0-160 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-40001	0-100 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

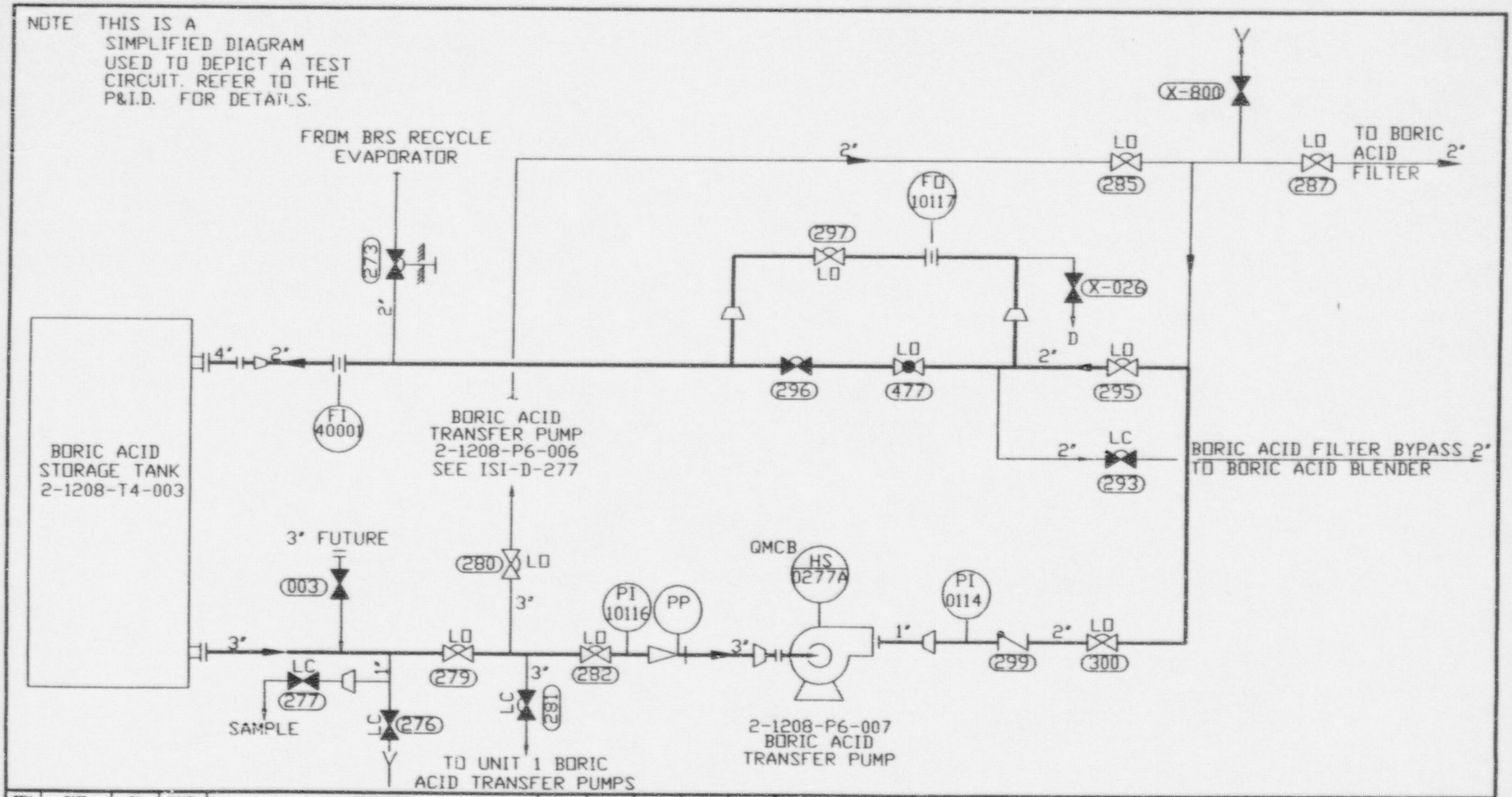
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1208-P6-007
(Figure ISI-D-278)

Parameter	Test Freq.	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	Comments
		I.D. No.(3)	Range	Req. Acc.	Value	Range	Range	Range	
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-10116	-15 to +15 psig	± 2%	NA	NA	NA	NA	Relief Request RR-P-1
Outlet Pressure (Po)	Qtr	PI-0114	0-160 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-40001	0-100 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	1-26-88	C.L.	RLB	ISSUED FOR PST / IST	JJC				
1	5-16-89	TEV	JRA	REVISED TEST FLOW PATH	JJC				
2	12-2-96	DVR	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

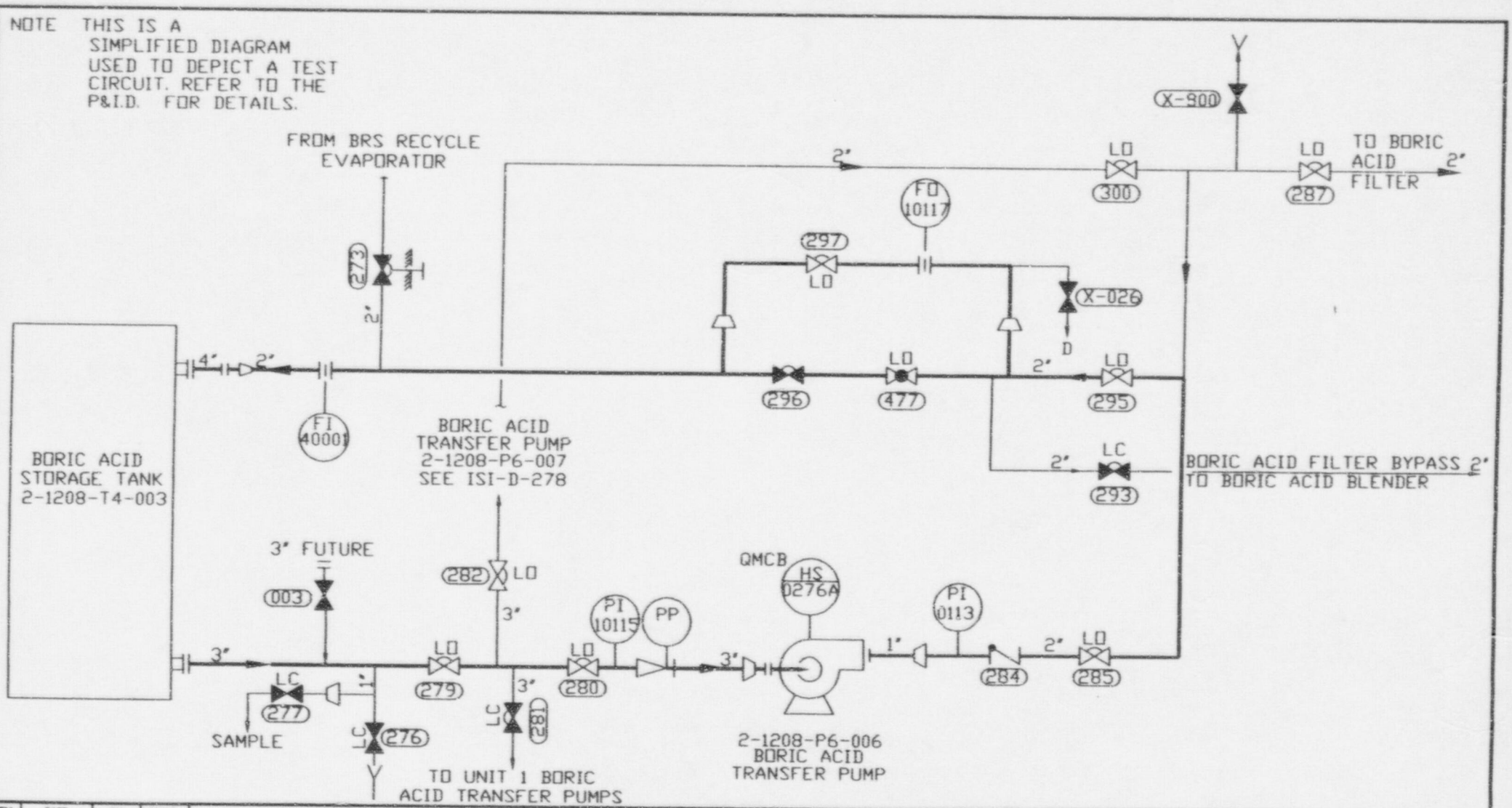
Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2

PUMP INSERVICE TESTING LOOP FOR BORIC ACID TRANSFER PUMP 2-1208-P6-007

DESIGNED	JJC	DRAWN	C.L.
TYPED		CHECKED	RLB
SCALE	NONE	CONTINUED ON SHEET	

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 278	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	1-26-89	C.L.	RLB	ISSUED FOR PST / IST	JJC				
1	5-16-89	TEV	JWA	REVISED TEST FLOW PATH	JJC				
2	12-2-96	BVR	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2

PUMP INSERVICE TESTING LOOP FOR BORIC ACID TRANSFER PUMP 2-1208-P6-006

DESIGNED J.J.C. DRAWN C.L.
TYPED CHECKED R.L.B.
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	ISI-D- 277	1 OF 1	2

AFW Pumps
(2-1302-P4-001, 002 & 003)

System Function	Supply water to the steam generators whenever the reactor coolant temperature is above 350°F and the main feedwater system is not in operation, i.e., during startup, cooldown, or emergency conditions resulting in a loss of main feedwater. Automatically provides feedwater for the removal of reactor core decay heat following a loss of main feedwater. This prevents damage to the reactor core until the reactor coolant temperature is brought from a Hot Standby condition to the point at which RHR may be placed into operation. AFW supplies feedwater to the steam generators at a flowrate sufficient to support normal low-power transients such as startup, cooldown, and hot standby.

Turbine Driven AFW Pump (2-1302-P4-001)

Quantity	1
Type	Horizontal, centrifugal, 5 stage, split-case
Manufacturer/Model	Ingersoll-Rand, Model 6HMTA
Capacity	1175 gpm
Total Dynamic Head	3500 ft.
Driver	
Type	Terry Turbine, Model GS-2N, non-condensing, single-stage, mechanical drive
Horsepower	1603
Speed	4250 rpm
Power Supply	Steam
Code Class	3
Project Class	313
Outline Drawing	2X4AF03-88
Instruction Book	2X4AF03-20031

Turbine Driven AFW Pump (2-1302-P4-001) (cont)

Physical Location	AFW pump house
P&ID	2X4DB161-2
Surveillance Procedure	14810-2
Pump Test Loop Diagrams	ISI-D-272
Test Parameter Sheets	Page 22-4

Motor-Driven AFW Pumps (2-1302-P4-002 & 003)

Quantity	2
Type	Horizontal, centrifugal, 6 stage, split-case
Manufacturer/Model	Ingersoll-Rand, Model 4HMTB
Design Flowrate	630 gpm
Total Dynamic Head	3500 ft.
Driver	
Type	Westinghouse electric motor, LLD 5810 H
Horsepower	900
Speed	3600 rpm
Power Supply	4160V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	2X4AF03-87
Instruction Book	2X4AF03-20030
Physical Location	AFW pump house
P&ID	2X4DB161-2
Surveillance Procedure	14807-2
Pump Test Loop Diagrams	ISI-D-273 & ISI-D-274
Test Parameter Sheets	Page 22-5 & 22-6

Test Parameter Table - Pump 2-1302-P4-001
(Figure ISI-D-272)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	Qtr	SI-15109A	0-6000	±2%	Nr	NA	NA	NA	Speed is set to reference value
Inlet Pressure (Pi)	Qtr	PI-5110A	0-30 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-5107A	0-2000 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-15100	0-200 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pamp 2-1302-P4-002
(Figure ISI-D-273)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-5128A	0-30 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-5140A	0-2000 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-15101	0-200 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

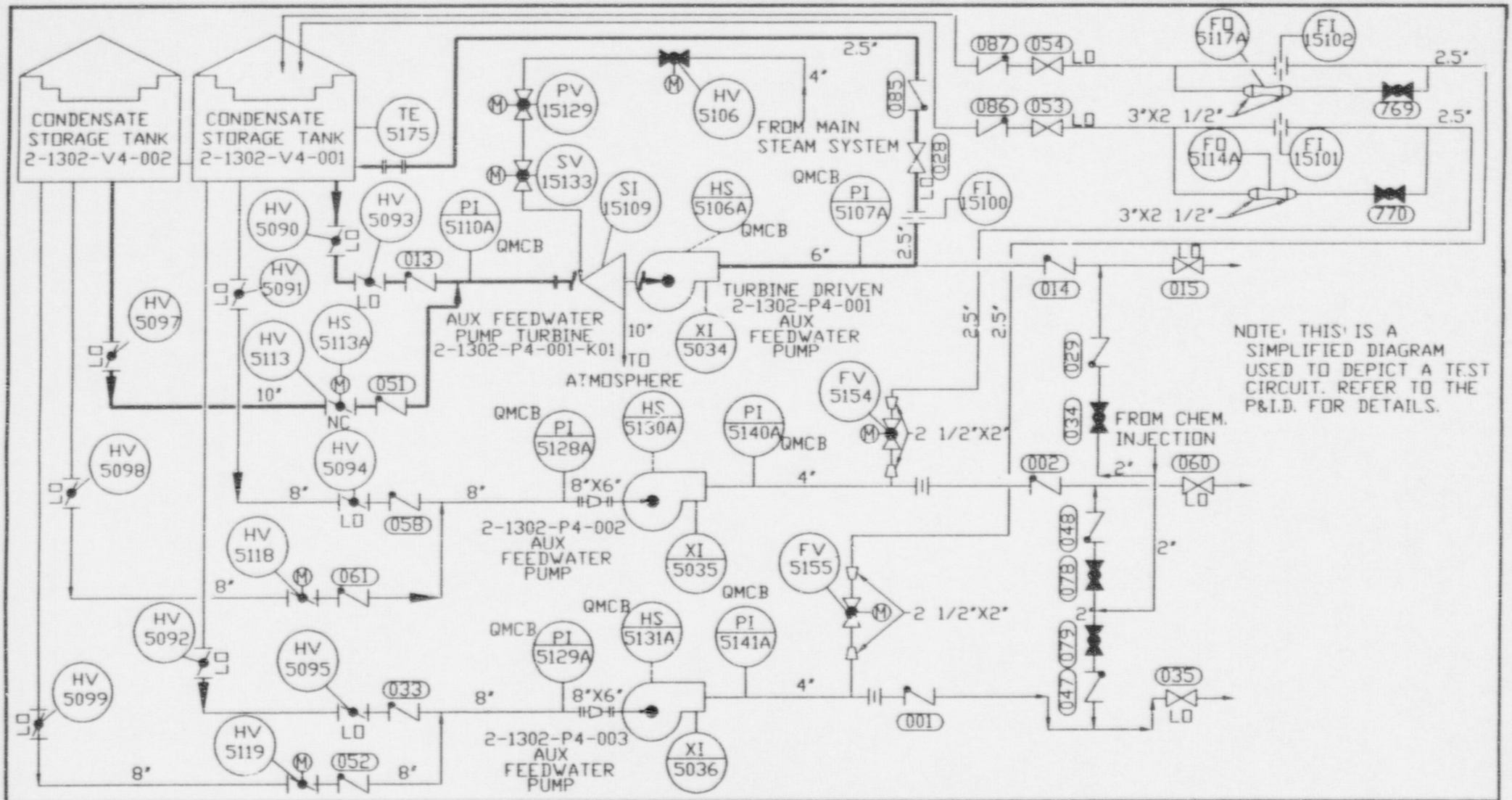
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1302-P4-003
(Figure ISI-D-274)

Parameter	Test Freq.	Instrumentation Utilized I.D. No.(3)	Range	Req. Acc.	Ref. Value	Acceptable Range	Alert Range	Action Range	Comments
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-5129A	0-200 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-5141A	0-2000 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-15102	0-200 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	WS	ISSUED FOR PST	FT				
1	1-26-88	C.L.	R.L.B	UPDATED TO REV.10 OF 2X4DB161-2	JJC				
2	12-2-96	SVR		REDRAWN IN ACAD13	GMS				

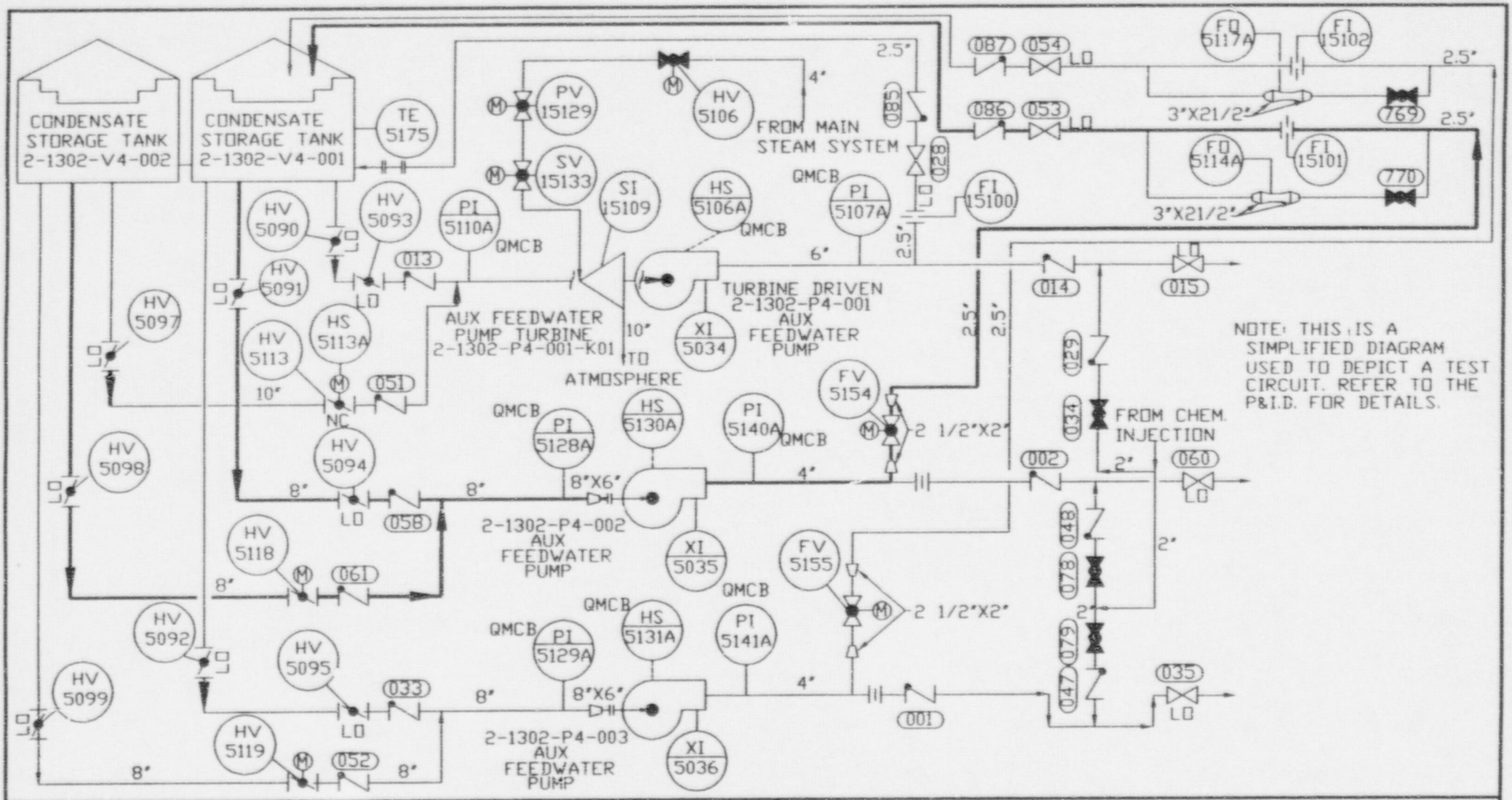
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR AUXILLARY FEEDWATER PUMP
2-1302-P4-001

DESIGNED FT DRAWN DRC
TYPED CHECKED WS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV
N/A	N/A	ISI-D- 272	1 OF 1	2



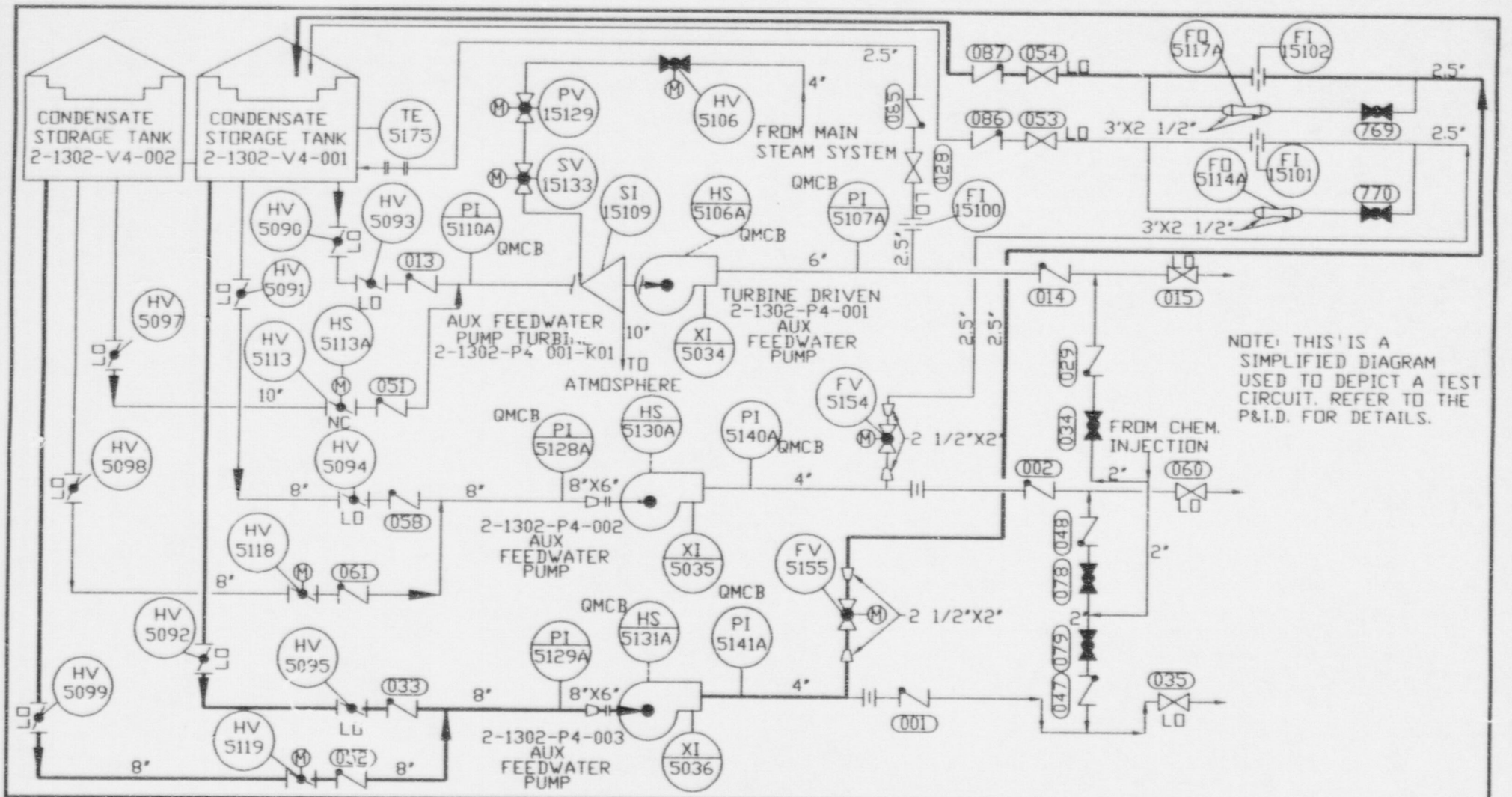
REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	C.L.	RLB	UPDATED TO REV.18 OF 2X4D3161-2	JJC				
2	12-2-96	DWR		REDRAWN IN ACAD13	DWS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR AUXILLARY FEEDWATER PUMP
2-1302-P4-002

DESIGNED FT		DRAWN DRC	
TYPED		CHECKED VS	
SCALE NONE		CONTINUED ON SHEET	
PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D-273	1 OF 1	2



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-89	CL	RLB	UPDATED TO REV.18 OF 2X4DB161-2	JJC				
2	12-2-96	DVR		REDRAWN IN ACAD13	DAS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR AUXILLARY FEEDWATER PUMP
2-1302-P4-003

DESIGNED FT DRAWN DRC
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D-2274	1 OF 1	2

ESF Pumps
(2-1592-P7-001, & 002)

System Function	During normal operation, the ESF chilled-water system is in standby mode; it is activated during emergency conditions upon receipt of a safety injection signal, containment ventilation isolation, or control room isolation signal. The ESF chilled-water system serves air handling units located in the safety-related areas of the plant to ensure the integrity of the cooling system during plant emergency situation.
Quantity	2
Type	Centrifugal
Manufacturer	Goulds
Capacity	600 gpm
Total Dynamic Head	125 ft.
Driver	
Type	Westinghouse electric motor
Horsepower	30
Speed	1800 rpm
Power Supply	480V, 60 Hz, 3 phase
Code Class	3
Project Class	313
Outline Drawing	2X4AJ05-28
Instruction Book	AX4AJ05-86
Physical Location	Control Bldg, EL 260 ft., Rooms R-310 & R-308
P&ID	2X4DB221
Surveillance Procedure	14809-2
Pump Test Loop Diagrams	ISI-D-275 & ISI-D-276
Test Parameter Sheets	Page 23-2 & 23-3

Test Parameter Table - Pump 2-1592-P7-001
(Figure ISI-D-275)

Parameter	Test Freq.	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	Comments
		I.D. No.(3)	Range	Req. Acc.	Value	Range	Range	Range	
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-22410	0-30 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-22414	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-22425	0-750 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

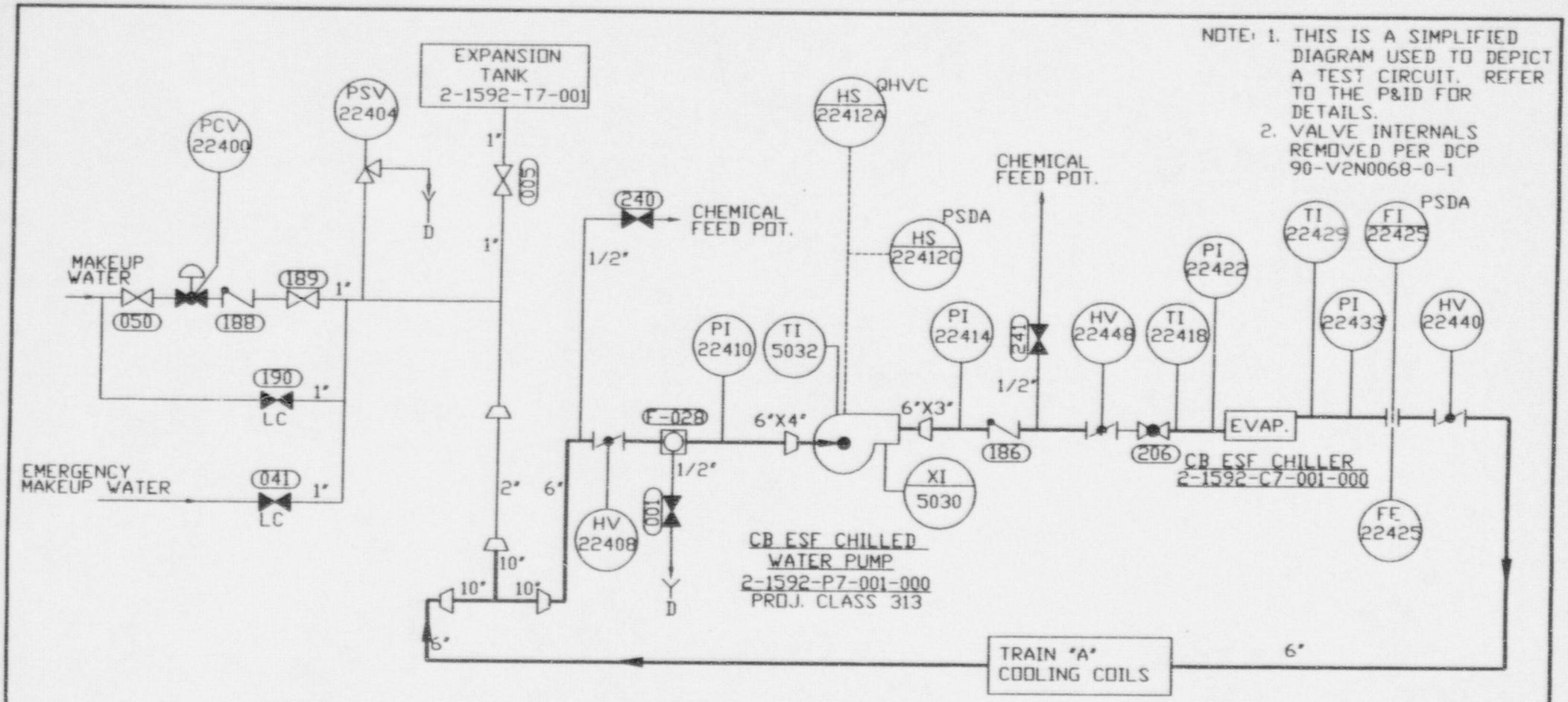
1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.

Test Parameter Table - Pump 2-1592-P7-002
(Figure ISI-D-276)

Parameter	Test Freq.	Instrumentation Utilized			Ref.	Acceptable	Alert	Action	Comments
		I.D. No.(3)	Range	Req. Acc.	Value	Range	Range	Range	
Speed (N)	NA	NA	NA	NA	NA	NA	NA	NA	Constant speed driver
Inlet Pressure (Pi)	Qtr	PI-22411	0-30 psig	± 2%	NA	NA	NA	NA	NA
Outlet Pressure (Po)	Qtr	PI-22415	0-200 psig	± 2%	NA	NA	NA	NA	NA
Differ. Pressure (ΔP)	Qtr	NA(1)	NA	± 2%	ΔPr	.90 - 1.10ΔPr	NA	<.90 or >1.10ΔPr	NA
Flowrate (Q)	Qtr	FI-22426	0-750 gpm	± 2%	Qr	NA	NA	NA	Flowrate is set at reference value
Vib. Amp. (V)(4)	Qtr	(2)	NA	± 5%	Vr	≤ 2.5Vr	> 2.5Vr - 6Vr or >.325 in/s	>6Vr or >.70 in/s	NA

Notes:

1. Differential pressure is calculated as, ΔP = Po - Pi
2. Portable vibration instruments are utilized.
3. At the discretion of SNC, instrumentation other than that listed, which meets the requirements of the OM Code, may be utilized for measuring test parameters.
4. Measurements are taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump-bearing housing and in the axial direction on each accessible thrust bearing housing.



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	CL	RLB	UPDATED TO REV.11 OF 2X4582E21	JJC				
2	1-21-91	VS	VLV	REMOVED VALVE 186 INTERNALS	MB				
3	12-2-96	BVR	DMS	REDRAWN IN ACAD13	DMS				

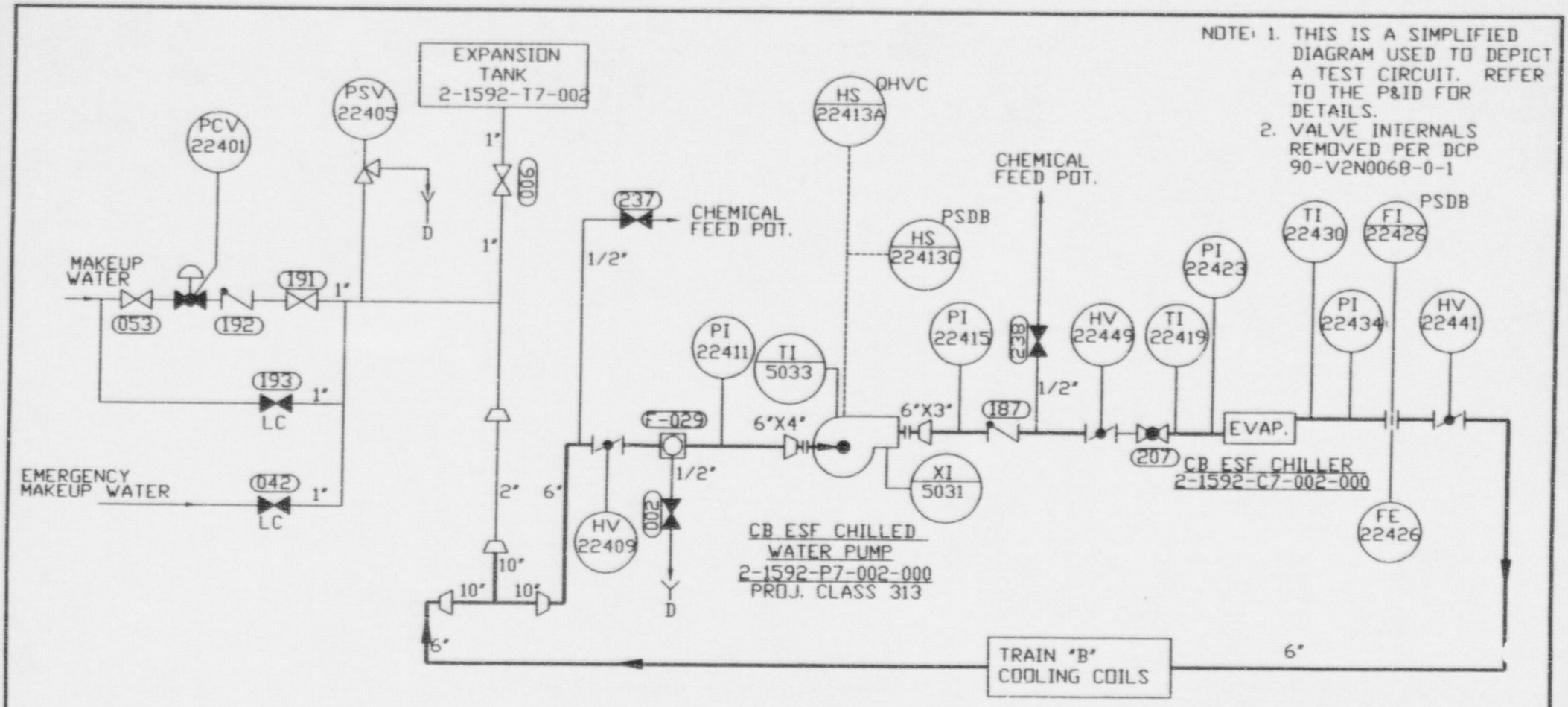
REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR CB ESF CHILLED WATER PUMP
TRAIN "A" 2-1592-P7-001-000

DESIGNED FT | DRAWN BGS
TYPED | CHECKED VS
SCALE NONE | CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 275	1 OF 1	3



REV.	DATE	BY	CHK'D	DESCRIPTION	APPR.1	APPR.2	APPR.3	APPR.4	APPR.5
0	9-5-84	BGS	VS	ISSUED FOR PST	FT				
1	1-26-88	C.L.	R.L.B	UPDATED TO REV.11 OF 2X4BR01	JHC				
2	1-21-91	VS	V.L.V	REMOVED VALVE 187 INTERNALS	MB				
3	12-2-96	BVR	DMS	REDRAWN IN ACAD13	DMS				

REMARKS

Southern Company Services, Inc. FOR Southern Nuclear Operating Company

VOGTLE ELECTRIC GENERATING PLANT
UNIT 2
PUMP INSERVICE TESTING LOOP
FOR CB ESF CHILLED WATER PUMP
TRAIN "B" 2-1592-P7-002-000

DESIGNED FT DRAWN BGS
TYPED CHECKED VS
SCALE NONE CONTINUED ON SHEET

PROJ.I.D.	DRAWING NUMBER	SHEET	REV.
N/A	N/A	ISI-D- 276	1 OF 1	3

PUMP RELIEF REQUEST LOG

Relief Request Number	Status
RR-P-1	Submitted for NRC Review.
RR-P-2	Submitted for NRC Review.
RR-G-1	Submitted for NRC Review.
RR-G-2	Submitted for NRC Review.

PUMP RELIEF REQUEST
RR-P-1

SYSTEM:	Chemical Volume and Control System (CVCS)
PUMPS:	Boric Acid Transfer 1-1208-P6-006 and -007 and 2-1208-P6-006 and -007
CLASS:	3
TEST REQUIREMENT:	ISTB 4.7.1(b)(1) requires the full scale range of analog instruments to be not greater than three times the reference value.
BASIS FOR RELIEF:	Suction pressure gages PI-10115 and PI-10116 have a full scale range of 30 inches of mercury to 15 psig, or -15 psig to 15 psig with an accuracy of ±0.15 psig. Since pressure readings when the pump is running will always be positive, the range of interest for IST is 0 - 15 psig. The actual suction pressure experienced during surveillance testing is approximately 2 psig which results in a maximum allowable range of 0 - 6 psig to satisfy the Code requirements. The Code allowable tolerance would be ±0.12 psig (0.02 x 6). Since the only purpose for measuring suction pressure is to use in determining differential pressure, for comparison to the test reference value, a total difference of 0.03 (0.15 - 0.12) psig in the measurement of differential pressure will have no impact on the repeatability or adequacy of the pump test. Therefore, the existing suction pressure gages provide adequate means for measuring the pump suction pressure and do not jeopardize the adequacy of the testing being performed.
ALTERNATE TESTING:	None. The existing suction pressure gages will be utilized for IST of the referenced pumps.

PUMP RELIEF REQUEST
RR-P-2

SYSTEM: All included in scope of IST Program

PUMPS: All included in scope of IST Program

CLASS: 2 and 3

TEST REQUIREMENT: ISTB 6.1 - If deviations fall within the required action range of Table ISTB 5.2-1, the pump shall be declared inoperable until the cause of the deviation has been determined and the condition corrected

BASIS FOR RELIEF: The ASME Section XI Code, 1989 Edition, subsection IWP-3230(c) states that;

"Corrective action shall be either replacement or repair per IWP-3111, or shall be an analysis to demonstrate that the condition does not impair pump operability and that the pump will still fulfill its function. A new set of reference values shall be established after such analysis."

The OMc-1994 Addenda (ISTB 6.2.2) and the OM 1995 edition (ISTB 6.2.2) both state that;

"If the measured test parameter values fall within the required action range of Table 5.2.1-1, Table 5.2.1-2, Table 5.2.2-1, or Table 5.2.3-1, as applicable, the pump shall be declared inoperable until either the cause of the deviation has been determined and the condition corrected, or an analysis of the pump is performed and new reference values are established in accordance with ISTB 4.6."

The Code applicable for the first interval IST Program (1983 ASME XI), and the latest issued Code both provide for analysis of pump test data in lieu of repair or replacement of the pump if the test parameters fall within the required action range. The OM Code-1990 Edition did not include such provisions. Communications with members of the OM Code Committee indicate that this was an oversight and that it was never intended to delete the ability to analyze the test data and determine if the pump is still capable of performing its intended safety function.

ALTERNATE TESTING: Should pump test parameters fall within the required action range of Table ISTB 5.2-2 (OM Code 1990 Edition), then the OM Code 1995 Edition, subsection ISTB 6.2.2 will be utilized. Since subsection ISTB 4.6 in the 1995 Code Edition references ISTB 6.2.2, subsection ISTB 4.6 from the OM Code 1995 Edition will also be applied.

GENERAL RELIEF REQUEST

RR-G-1

SYSTEMS: All in Scope of IST Program

VALVES: All in Scope of IST Program

PUMPS: All in Scope of IST Program

CLASS: 1, 2 and 3

TEST REQUIREMENT: The version of 10CFR50 in effect on May 31, 1996, paragraph 50.55a(b)(2) specifies the applicable Code to be the ASME XI, 1988 Addenda through 1989 Edition. The 1989 Edition of ASME XI references OM part 6 and 10 for inservice pump and valve testing respectfully. Paragraph 50.55a(b)(2)(viii) of the CFR specifies the Code applicable to inservice pump and valve testing to be the ASME/ANSI part 6 and ASME/ANSI part 10 of the OMa-1988 Addenda to the OM-1987 Edition.

BASIS FOR RELIEF: The ASME/ANSI OM document was issued as a Code with the ASME OM Code-1990 Edition. This edition was amended with the OMa Code-1991 Addenda, the OMb Code-1992 Addenda, and the OMc Code-1994 Addenda. The ASME OM Code-1995 Edition was issued in early 1995. With each addenda and edition of the ASME OM Code, the ASME OM Code Committee has included updated inservice testing requirements based on improved knowledge, operating history and experience and changes in testing technology. Beginning with the ASME OM Code-1990 Edition, the format of the document was also changed to read like a Code instead of a standard as it was initially drafted. Therefore, application of later versions of the ASME OM Code, than specified in 10CFR50, should enhance the quality of the IST Program.

ALTERNATE TESTING: The ASME OM Codes utilized for update of the Vogtle Inservice Testing Program shall be:

IST of Valves (except safety/relief valves) - ASME OM Code-1990 Edition

IST of Pumps - ASME OM Code-1990 Edition

IST of Safety/Relief Valves - ASME OM Code 1995 Edition (ASME OM Code-1995 Edition, Appendix I, augments the rules of Subsection ISTC 4.4.)

The NRC previously approved use of the above referenced Codes in a letter dated November 27, 1996. This relief request is identical to RR-G-1 included in the IST Valve Program.

GENERAL RELIEF REQUEST

RR-G-2

SYSTEMS: All in Scope of Unit 2 IST Program

VALVES: All in Scope of Unit 2 IST Program

PUMPS: All in Scope of Unit 2 IST Program

CLASS: 1, 2 and 3

TEST REQUIREMENT: The version of 10CFR50 in effect on May 31, 1996, paragraph 50.55a(f)(4)(ii), specifies that inservice testing to verify operational readiness of pumps and valves required for safety, conducted during successive 120-month intervals must comply with the requirements of the latest edition and addenda of the Code incorporated by reference in paragraph 10CFR50.55a(b) 12 months prior to the start of the 120-month interval.

BASIS FOR RELIEF: The commercial operation date for Vogtle Unit 1 was May 31, 1987. The commercial operation date for Vogtle Unit 2 was May 20, 1989. Maintaining both units on the same interval schedule allows both IST programs to be developed utilizing the same edition of the applicable Codes, will make it easier for involved personnel to become familiar with the Code requirements, will ensure a greater degree of consistency for IST between the units, and will reduce the cost associated with surveillance procedure revisions for the program update and for maintenance of the program documents.

ALTERNATE TESTING: Update the Vogtle Nuclear Plant Unit 2 IST Program concurrent with the Unit 1 second 10-year interval IST Program update due on May 31, 1997. The Unit 2 IST Program will be updated concurrent with the Unit 1 IST Program in accordance with the applicable regulations for the remainder of the plant life.

The NRC previously approved use of the above referenced Codes in a letter dated November 27, 1996. This relief request is identical to RR-G-1 included in the IST Valve Program.