FPL.

MAY 2 4 2013

L-2013-113
10 CFR 50.55a

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

RE: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Inservice Inspection Plan
Submittal of Relief Request No. 12

Pursuant to 10 CFR 50.55a(a)(3)(ii), Florida Power and Light (FPL) requests relief from ASME Section XI, section IWB-5200, subsection IWB-5222, paragraph (b), for the Class 1 pressure test boundaries subject to system pressurization identified in Table 1 and plant drawings of the attached Relief Request No 12. The relief is requested on the basis that hardship and unusual difficulty exists without compensating increase in the level of quality and safety. As discussed in the attached Relief Request, the use of the proposed alternative provides reasonable assurance of structural integrity or leak tightness of the subject components.

Due to the extended refueling outages for the extended power uprate (EPU) Turkey Point plant modifications, FPL is invoking the provision of ASME Code Section XI, IWA-2430(d)1 to extend the Fourth 10-Year ISI interval by 1-year for both Turkey Point Units 3 and 4 to complete the required inservice inspections during the refueling outages for Cycle 27 and Cycle 28 for Units 3 and Units 4 respectively, and to credit those inspections/examinations to the Fourth 10-Year ISI Interval. Accordingly, FPL requests the approval of the attached Relief Request No. 12 by February 1, 2014 to support the Unit 3 refueling outage for Cycle 27 currently scheduled in the Spring of 2014, and the Turkey Point Unit 4 refueling outage activities currently scheduled for Cycle 28 in the Fall of 2014.

If you have any questions or require additional information, please contact Robert Tomonto, Licensing Manager, at (305) 246-7327.

Very truly yours,

Michael Kiley
Site Vice President
Turkey Point Nuclear Plant

Attachment

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

A047
NRR

10 CFR 50.55a Relief Request Number 12

**Proposed Alternative
in Accordance with 10 CFR 50.55a (a)(3)(ii)**

**Hardship or Unusual Difficulty
Without Compensating Increase in Level of Quality or Safety**

1. ASME Code Component(s) Affected:

The affected components associated with this relief request are the Turkey Point Units 3 and 4 Class 1 pressure retaining components within the identified system boundary listed in Table 1 and the attached plant drawings.

2. Applicable Code Edition and Addenda:

The code of record for the Turkey Point Units 3 and Unit 4 for the Fourth 10-year Inservice Inspection (ISI) interval is the 1998 Edition with Addenda through 2000 of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV), Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components."

3. Applicable Code Requirement:

The ASME B&PV Section XI 1998 Edition with Addenda through 2000, Table IWB-2500-1, Section IWB-5200 "System Test Requirements", subsection IWB-5222 "Boundaries", paragraph (b), requires that "The pressure retaining boundary during the system leakage test conducted at or near the end of each inspection interval shall extend to all Class 1 pressure retaining components within the system boundary."

4. Basis for Hardship or Unusual Difficulty without Compensating Increase In level of Quality or Safety

Turkey Point Units 3 and 4 request relief from IWB-5222(b) in accordance with 10 CFR 50.55a(a)(3)(ii) on the basis that hardship or unusual difficulty exists, without a compensating increase in the level of quality and safety. The attached Table 1 and plant drawings identify the Class 1 pressure retaining components that are associated with the requested relief.

The reason for the relief is discussed below.

Turkey Point Units 3 and 4 design of Class 1 vents and drains typically consist of a single isolation valve with a capped/blind flanged end that constitutes the Class 1 system boundary. Many of these valves are not readily accessible due to their physical locations and radiation/contamination levels in the area. Pressurization of these locations for testing would be performed in Mode 3 and would involve opening these single isolation valves to pressurize to the extended Class 1 pressure retaining components within the system

boundary. After performance of the required VT-2 visual examination, these single isolation valves would be closed, isolating a high temperature, pressurized volume of water between the isolation valve and the capped/blind flanged end. This results in an undesirable plant configuration that would be conducive to pressure lock or the initiation of system leakage from valve packing or capped/blind flanged ends.

In addition, the piping associated with the vents and drains will contain pressurized reactor coolant fluid between the valve and cap/blind flange. During the subsequent refueling outage, after depressurization of the reactor coolant system, the valve would need to be opened prior to cap/blind flange removal in order to release the pressurized slug of reactor coolant system fluid contained between the valve and cap/blind flange. This will need to be performed in order to eliminate a safety hazard.

Turkey Point Units No. 3 and 4 design also requires substantial effort to extend the Class 1 system boundary where check valves or non-redundant components serve as the first system isolation from the reactor coolant system. Such configurations may require check valve disassembly or other temporary configurations to achieve test pressures at upstream piping and valves. Since the Class 1 system pressure testing is performed in Mode 3, these temporary configurations could conflict with Technical Specification requirements and valve alignments. Establishing and restoring such temporary configurations could also result in an unwarranted increase in worker radiation exposures.

Relief is requested from fully pressurizing piping between the first and second isolation device on small bore size vent, drain, test, and fill lines in the Reactor Coolant System (RCS), which range in size from 0.5 inch to 2 inches. The configurations are either two small isolation valves in series, a valve and blind flange, or a valve and cap. In certain configurations, the piping between the two isolation boundaries will tee to a third valve that is also the second isolation boundary. The piping segments provide the design required double isolation barrier for the reactor coolant pressure boundary. The code required leakage test would be performed in Mode 3 at the normal operating temperature and pressure.

Leakage testing of these piping segments at nominal operating pressure in Mode 3 would require the opening of the inboard isolation valve at the normal operating RCS temperature and pressure conditions. In doing so, the design requirement for two primary coolant pressure boundary isolation devices would be violated. Additionally, opening of these valves introduces the potential risk for spills and personnel contamination. For configuration where blind flanges or caps are installed as the isolation device, opening of the inboard valve introduces the possibility of a personnel safety hazard if a flange or cap fails in the presence of inspection personnel.

A VT-2 visual examination is performed on these piping segments through the entire length as part of the Class 1 system inspection at the conclusion of each refueling outage. This leakage test does not specifically pressurize past the first isolation valve. Also, this leakage test is considered successful when no external or visible leakage is identified. Since this type of test assures that the combined first and second isolation devices are effective in

maintaining the reactor coolant pressure boundary at normal operating temperature and pressure, the increase in safety achieved from the code required leakage test (IWB-5222(b)) is not commensurate with the hardship of performing such code required leakage testing.

14-inch Residual Heat Removal (RHR) Motor Operated Valves (MOV)

Turkey Point Unit 3: This piping segment consists of approximately 26 feet of 14-inch piping between RHR inlet valves MOV-3-750 and MOV-3-751. Within this piping segment there is a 3/4 inch pipe branch with a 3/4 inch valve that branches off into a two 1/2 inch valves.

Turkey Point Unit 4: This piping segment consists of approximately 44 feet of 14 inch piping between RHR inlet valves MOV-4-750 and MOV-4-751. Within this piping segment there is a 1 inch pipe branch with a 1 inch valve that branches off into a 1 inch valve and a 1/2 inch valve. Also, within this 14-inch piping segment, there is a 3/4 inch vent valve.

MOV-3/4-750 and MOV-3/4-751 are interlocked to avoid over-pressurization of the RHR system. The interlock prevents manual opening of the valves with RCS pressure above the required pressure interlock setpoint.

A VT-2 visual examination is performed on these piping segments through the entire length as part of the Class 1 system inspection at the conclusion of each refueling outage. This proposed system pressure test does not specifically pressurize past the first isolation valve. It is possible that the piping becomes pressurized due to minor leakage past the first isolation valve. The leakage test is considered successful when no external or visible leakage is identified. This test will provide assurance that the combined first and second isolation devices are effective in maintaining the reactor coolant pressure boundary at normal operating temperature and pressure.

Based on the above, extension of the pressure retaining boundary during system leakage tests to Class 1 pressure retaining components within the system boundary represents a hardship and unusual difficulty that does not provide a compensating increase in the level of quality and safety.

Safety Injection Loops Low Head Check Valves 3-875A/B/C, 4-875A/B/C, and Upstream Piping

These six piping segments consist of 10-in. piping spans connected to an 8-in. and 2-in. piping span along with 3/4 inch and 1 inch connections with valves. Pressure testing in Mode 3 would require a pressure source be connected at each segment location. In so doing, the design requirement for two primary coolant pressure boundary isolation devices would be violated. For test locations located overhead and away from normal personnel access areas, ladders or scaffolding would have to be installed to provide access to the piping segment and to open the valve.

The piping segments are inspected using VT-2 visual examination as part of the Class 1 system inspection at the conclusion of each refueling outage. The proposed system

pressure test will not specifically pressurize past the first isolation valve for this inspection. It is possible that the piping becomes pressurized due to minor leakage past the first isolation valve. However, the pressure in the segment will be at least at the operating pressure of the emergency core cooling system accumulators, which are pressurized to between 600 psig and 660 psig.

The acceptance criteria will be that no external or visible leakage will be allowed for the test to be successful. Therefore, based on the above, the imposition of the ASME Code requirements on the plant would cause a significant burden that would not be compensated by an increase in the level of quality and safety. The proposed alternative provides reasonable assurance that the subject line segments' leakage integrity will be maintained.

Safety Injection Loops High Head Check Valves 3-874A/B, 4-874A/B, and Upstream Piping

These two piping segments consist of a 2-in. piping span between two check valves oriented toward the RCS. Pressure testing of these piping segments at nominal operating pressure in MODE 3 would require a modification to allow pressurizing to the normal operating RCS temperature and pressure conditions.

A VT-2 visual examination is performed on these piping segments through the entire length as part of the Class 1 system inspection at the conclusion of each refueling outage. The proposed system pressure test will not specifically pressurize past the first isolation valve for this inspection. It is possible that the piping becomes pressurized due to minor leakage past the first isolation valve. The acceptance criteria will be that no external or visible leakage will be allowed for the test to be successful.

Based on the above, it has been determined that compliance with the ASME Code requirement to perform the system pressure test on the subject line segments would result in a hardship that would not be compensated by an increase in quality and safety. The proposed alternative provides reasonable assurance that the subject line segments' leakage integrity will be maintained.

5. Proposed Alternative and Basis for Use:

Title 10 of the Code of Federal Regulations (10 CFR), Section 50.55a(g)(4), specifies that ASME Code Class 1, 2, and 3 components (including supports) must meet the requirements, except for the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI to the extent practical within the limitations of design geometry and materials of construction of the components.

Paragraph 50.55a(a)(3) of 10 CFR Part 50 states, in part, that alternatives to the requirements of 10 CFR 50.55a(g) may be used when authorized by the NRC if the licensee demonstrates (i) the proposed alternatives would provide an acceptable level of quality and safety, or if (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

FPL is requesting authorization of an alternative to the requirements of the ASME Code Section XI, IWB-5222(b) pursuant to 10 CFR 50.55a(a)(3)(ii).

The proposed alternative for this request relief uses leakage testing. The Class 1 system boundary will be maintained in a normal, operational alignment during leakage tests for the items identified within Table 1 constituting exceptions to the Code-required boundary of IWB-5222(b). The VT-2 visual examination will extend to the Class 1 pressure retaining components within the system boundary during the performance of each system leakage test required by Table IWB-2500-1 examination category B-P. Items within Table 1 will be visually examined for evidence of leakage during system leakage testing without being pressurized.

Based on the discussion provided in Section 4, it is concluded that compliance with the specified requirements would result in hardship or unusual difficulty without compensating increase in the level of quality and safety, while the proposed alternative provides reasonable assurance of structural integrity or leak tightness of the subject components.

6. Duration of Proposed Alternative:

Relief Request No. 12 is requested for Turkey Point Units 3 and 4 for the Fourth 10-Year ISI Interval. The Unit 3 Fourth 10-Year ISI Interval began February 22, 2004 to February 21, 2014 and the Unit 4 Fourth 10-Year Interval began April 15, 2004 to April 14, 2014.

Due to the extended refueling outages for the extended power uprate (EPU) Turkey Point plant modifications, FPL is invoking the provision of ASME Code Section XI, IWA-2430(d)1 to extend the Fourth 10-Year ISI interval by 1-year for both Turkey Point Units 3 and 4 to complete the required inservice inspections during the refueling outages for Cycle 27 and Cycle 28 for Units 3 and Units 4 respectively, and to credit those inspections/examinations to the Fourth 10-Year ISI Interval.

7. Precedent

Similar relief has been granted for H.B Robinson Steam Electric Plant Unit No.2, Docket No. 50-261, TAC No. ME 8255, ML12181A26.

8. Attachments

Plant Drawings referenced in Table 1

Table 1
Relief Request No. 12
Turkey Point Unit 3 Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Diameter	Pipe Schedule	Approx Length	Exam Category	Drawing No.	Boundary Exception(s)
Drain line below PZR safety valve RV-3-551A (pipe piece between 3-545 and 3-545A)	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5613-M-3041 Sh. 2	Valve 3-545 remains closed to avoid pressurizing downstream Class 1 pipe piece and valve 3-545A
Drain line below PZR safety valve RV-3-551B (pipe piece between 3-546 and 3-546A and 3-585)	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 2 ft.	B-P	5613-M-3041 Sh. 2	Valve 3-546 remains closed to avoid pressurizing downstream Class 1 pipe piece and valves 3-546A and 3-585
Drain line below PRZ safety valve RV-3-551C (pipe piece between 3-547and 3-547A)	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5613-M-3041 Sh. 2	Valve 3-547 remains closed to avoid pressurizing downstream Class 1 pipe piece and valve 3-547A
RCS loop intermediate loop "A" drain valve, liquid waste disposal piping, and leak-off valve.	1	2 in.	A376 TP316 SMLS Sch. 160	≤1 ft.	B-P	5613-M-3041 Sh. 1	Valve 3-508A remains closed to avoid pressurizing downstream Class 1 piping and valves 3-508B and 3-542
		3/4 in.	A376 TP316 SMLS Sch. 160	28 ft.			
RCS loop intermediate loop "B" drain valve and liquid waste disposal piping	1	2 in.	A376 TP316 SMLS Sch. 160	≤1 ft.	B-P	5613-M-3041 Sh. 1	Valve 3-515A remains closed to avoid pressurizing downstream Class 1 piping and valve 3-515B.
RCS loop intermediate loop "C" drain valve and liquid waste disposal piping	1	2 in.	A376 TP316 SMLS Sch. 160	≤1 ft.	B-P	5613-M-3041 Sh. 1	Valve 3-505A remains closed to avoid pressurizing downstream Class 1 piping and valve 3-505B.
RCP "A" seal injection drain valve and blind flange	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5613-M-3047 Sh. 3	Valve 3-300A remains closed to avoid pressurizing downstream pipe piece and flange
RCP "A" seal water bypass vent valve and blind flange	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5613-M-3047 Sh. 3	Valve 3-300C remains closed to avoid pressurizing downstream pipe piece and flange

Table 1
Relief Request No. 12
Turkey Point Unit 3 Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Diameter	Pipe Schedule	Approx Length	Exam Category	Drawing No.	Boundary Exception(s)
RCP "B" seal injection drain valve and cap	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5613-M-3047 Sh. 3	Valve 3-300D remains closed to avoid pressurizing downstream pipe piece and cap
RCP "B" seal water bypass Vent valve and blind flange.	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5613-M-3047 Sh. 3	Valve 3-300F remains closed to avoid pressurizing downstream pipe piece and flange
RCP "C" seal injection drain valve and cap	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5613-M-3047 Sh. 3	Valve 3-300G remains closed to avoid pressurizing downstream pipe piece and cap
RCP "C" seal water bypass Vent valve and blind flange.	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5613-M-3047 Sh. 3	Valve 3-300J remains closed to avoid pressurizing downstream pipe piece and flange
Auxiliary spray line vent valve and upstream piping	1	2 in.	A376 TP316 SMLS Sch. 160	139 ft.	B-P	5613-M-3047 Sh. 2	Valve CV-3-311 remains closed to avoid pressurizing downstream piping up to check valve 3-313 and vent pipe and vent valve 3-120J
		3/4 in	A376 TP316 SMLS Sch. 160	≤ 1 ft.			
Safety injection loop cold leg injection check valve 3-875A and upstream piping	1	3/4 in. 1 in	A376 TP316 SMLS Sch. 160	≤ 3 ft.	B-P	5613-M-3064 Sh. 1	Check valve 3-875A to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves: 3-868A, 3-873D, 3-873A, 3-876A, 3-875D, 3-940A, 3-884B, and 3-941J
		2 in.	A376 TP316 SMLS Sch. 160	100 ft.			
		8 in.	A376 TP316 SMLS Sch. 120	3 ft.			
		10 in.	A376 TP316 SMLS Sch. 140	35 ft.			

Table 1
Relief Request No. 12
Turkey Point Unit 3 Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Diameter	Pipe Schedule	Approx Length	Exam Category	Drawing No.	Boundary Exception(s)
Safety injection loop cold leg injection check valve 3-875B and upstream piping	1	3/4 in. 1 in.	A376 TP316 SMLS Sch. 160	≤ 5 ft.	B-P	5613-M-3064 Sh. 1	Check valve 3-875B to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves 3-868B, 3-873E, 3-873B 3-875E, 3-940B, 3-884D, 3-941K, 3-941R, 3-941V, 3-876B and 3-876D
		2 in.	A376 TP316 SMLS Sch. 160	70 ft.			
		8 in.	A376 TP316 SMLS Sch. 120	10 ft.			
		10 in.	A376 TP316 SMLS Sch. 140	58 ft.			
Safety injection loop cold leg injection check valve 3-875C and upstream piping	1	3/4 in. 1 in.	A376 TP316 SMLS Sch. 160	≤ 3 ft.	B-P	5613-M-3064 Sh. 1	Check valve 3-875C to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves 3-868C, 3-873F, 3-873C, 3-940C, 3-884F, 3-875F, 3-876E, 3-942A, and 3-876C.
		2 in.	A376 TP316 SMLS Sch. 160	69 ft.			
		8 in.	A376 TP316 SMLS Sch. 120	18 ft.			
		10 in.	A376 TP316 SMLS Sch. 140	41 ft.			
Residual heat removal motor-operated valve MOV-3-750 and common suction piping	1	14 in.	A376 TP316 SMLS Sch. 140	26 ft.	B-P	5613-M-3050 Sh. 1	Valve MOV-3-750 to remain closed to avoid pressuring downstream piping and valves, MOV-3-751, 3-750B, 3-750C and 3-750D.
		3/4 in. 1/2 in.	A376 TP316 SMLS Sch. 160	3 ft.			
Downstream piping of CV-3-310B	1	3 in.	A376 TP316 SMLS Sch. 160	45 ft.	B-P	5613-M-3047 Sh. 2	Valve CV-3-310B to remain closed to avoid pressurizing downstream piping up to check valve 3-312B

Table 1
Relief Request No. 12
Turkey Point Unit 3 Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Diameter	Pipe Schedule	Approx Length	Exam Category	Drawing No.	Boundary Exception(s)
Safety Injection check valves 3-874A, 3-874B and upstream piping	1	2 in.	A376 TP316 SMLS Sch. 160	222 ft.	B-P	5613-M-3062 Sh. 1	Check valves 3-874A and 3-874B to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves MOV-3-866A and B, 3-941C and D, and 3-957
		3/4 in.	A376 TP316 SMLS Sch. 160	≤1 ft.			
Pressurizer Spray line drain valve and cap	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤1 ft.	B-P	5613-M-3041 Sh. 2	Valve 3-568 remains closed to avoid pressurizing downstream pipe piece and cap
Pressurizer Spray line drain valve and cap	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤1 ft.	B-P	5613-M-3041 Sh. 2	Valve 3-569 remains closed to avoid pressurizing downstream pipe piece and cap
Regenerative Heat Exchanger outlet drain line and cap	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5613-M-3047 Sh. 1	Valve 3-201A remains closed to avoid pressurizing downstream pipe piece and cap

Table 1
Relief Request No.12
Turkey Point Unit 4 Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Diameter	Pipe Schedule	Approx Length	Exam Category	Drawing No.	Boundary Exception(s)
Drain line below PZR safety valve RV-4-551A (pipe piece between 4-545 and 4-545A)	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3041 Sh. 2	Valve 4-545 remains closed to avoid pressurizing downstream Class 1 pipe piece and valve 4-545A
Drain line below PZR safety valve RV-4-551B (pipe piece between 4-546, 4-546A, and 4-585)	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 2 ft.	B-P	5614-M-3041 Sh. 2	Valve 4-546 remains closed to avoid pressurizing downstream Class 1 pipe piece and valves 4-546A and 4-585
Drain line below PRZ safety valve RV-4-551C (pipe piece between 4-547and 4-547A)	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3041 Sh. 2	Valve 4-547 remains closed to avoid pressurizing downstream Class 1 pipe piece and valve 4-547A
RCS loop intermediate loop "A" drain valve, liquid waste disposal piping, and leak-off valve	1	2 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3041 Sh. 1	Valve 4-508A remains closed to avoid pressurizing downstream Class 1 piping and valves 4-508B and 4-542
		3/4 in.	A376 TP316 SMLS Sch. 160	28 ft.			
RCS loop intermediate loop "B" drain valve and liquid waste disposal piping	1	2 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3041 Sh. 1	Valve 4-515A remains closed to avoid pressurizing downstream Class 1 piping and valve 4-515B.
RCS loop intermediate loop "C" drain valve and liquid waste disposal piping	1	2 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3041 Sh. 1	Valve 4-505A remains closed to avoid pressurizing downstream Class 1 piping and valve 4-505B.
RCP "A" seal injection drain valve and blind flange	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3047 Sh. 3	Valve 4-300A remains closed to avoid pressurizing downstream pipe piece and flange

Table 1
Relief Request No.12
Turkey Point Unit 4 Affected Class 1 Pressure Retaining Components

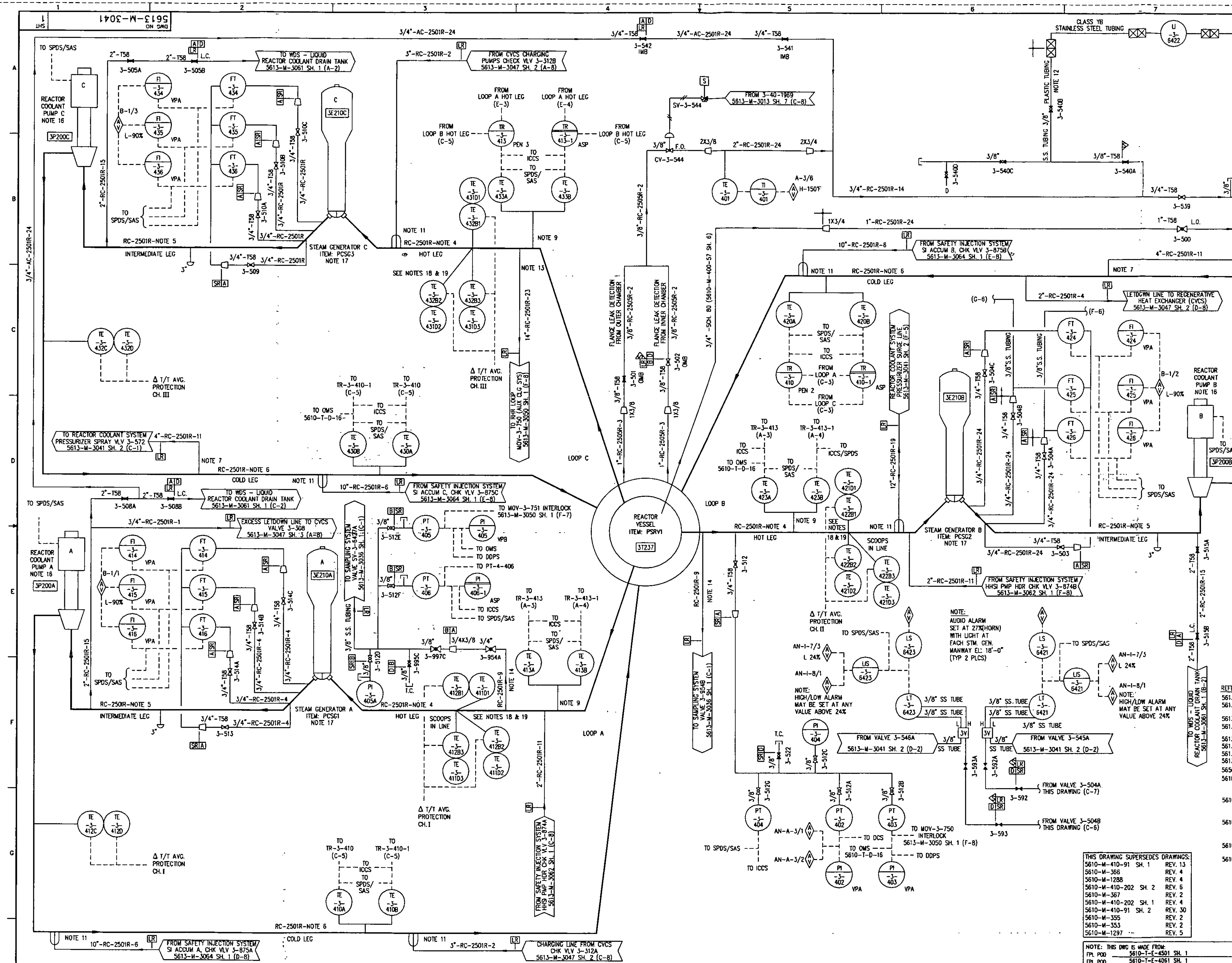
Affected Line or Component	Code Class	Pipe Diameter	Pipe Schedule	Approx Length	Exam Category	Drawing No.	Boundary Exception(s)
RCP "A" seal water bypass vent valve and blind flange	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3047 Sh. 3	Valve 4-300C remains closed to avoid pressurizing downstream pipe piece and flange
RCP "B" seal injection drain valve and cap	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3047 Sh. 3	Valve 4-300D remains closed to avoid pressurizing downstream pipe piece and cap
RCP "B" seal water bypass Vent valve and blind flange.	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3047 Sh. 3	Valve 4-300F remains closed to avoid pressurizing downstream pipe piece and flange
RCP "C" seal injection drain valve and cap	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3047 Sh. 3	Valve 4-300G remains closed to avoid pressurizing downstream pipe piece and cap
RCP "C" seal water bypass Vent valve and blind flange.	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3047 Sh. 3	Valve 4-300J remains closed to avoid pressurizing downstream pipe piece and flange
Piping downstream of CV-4-311	1	2 in.	A376 TP316 SMLS Sch. 160	142 ft.	B-P	5614-M-3047 Sh. 2	Valve CV-4-311 remains closed to avoid pressurizing downstream piping up to check valve 4-313.
Safety injection loop cold leg injection check valve 4-875A and upstream piping	1	3/4 in. 1 in	A376 TP316 SMLS Sch. 160	≤ 3 ft.	B-P	5614-M-3064 Sh. 1	Check valve 4-875A to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves 4-868A, 4-868D, 4-873D, 4-873A, 4-876A, 4-875D, 4-876E 4-940A, 4-884B, and 4-941J
		2 in.	A376 TP316 SMLS Sch. 160	89 ft.			
		8 in.	A376 TP316 SMLS Sch. 120	15 ft.			

Table 1
Relief Request No.12
Turkey Point Unit 4 Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Diameter	Pipe Schedule	Approx Length	Exam Category	Drawing No.	Boundary Exception(s)
		10 in.	A376 TP316 SMLS Sch. 140	46 ft.			
Safety injection loop cold leg injection check valve 4-875B and upstream piping	1	3/4 in. 1 in.	A376 TP316 SMLS Sch. 160	≤ 4 ft.	B-P	5614-M-3064 Sh. 1	Check valve 4-875B to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves 4-868B, 4-868E, 4-873E, 4-873B, 4-875E, 4-940B, 4-884D, 4-941K, 4-941R, 4-941V, 4-876B and 4-876D
		2 in.	A376 TP316 SMLS Sch. 160	110 ft.			
		8 in.	A376 TP316 SMLS Sch. 120	21 ft.			
		10 in.	A376 TP316 SMLS Sch. 140	59 ft.			
Safety injection loop cold leg injection check valve 4-875C and upstream piping	1	3/4 in. 1 in.	A376 TP316 SMLS Sch. 160	≤ 4 ft.	B-P	5614-M-3064 Sh. 1	Check valve 4-875C to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves 4-868F, 4-868C, 4-873F, 4-873C, 4-940C, 4-941L, 4-884F, 4-875F, 4-876C
		2 in.	A376 TP316 SMLS Sch. 160	87 ft			
		8 in.	A376 TP316 SMLS Sch. 120	5 ft.			
		10 in.	A376 TP316 SMLS Sch. 140	49 ft.			
Residual heat removal motor-operated valve MOV-4-750 and common suction piping	1	14 in.	A376 TP316 SMLS Sch. 140	44 ft.	B-P	5614-M-3050 Sh. 1	Valve MOV-4-750 to remain closed to avoid pressuring downstream piping and valves, MOV-4-751, 4-750A, 4-750B, 4-750C and 4-750D.
		3/4 in. 1/2 in. 1 in.	A376 TP316 SMLS Sch. 160	10 ft.			

Table 1
Relief Request No.12
Turkey Point Unit 4 Affected Class 1 Pressure Retaining Components

Affected Line or Component	Code Class	Pipe Diameter	Pipe Schedule	Approx Length	Exam Category	Drawing No.	Boundary Exception(s)
Piping downstream of CV-4-310B	1	3 in.	A376 TP316 SMLS Sch. 160	48 ft.	B-P	5614-M-3047 Sh. 2	Valve CV-4-310B to remain closed to avoid pressurizing downstream piping up to check valve 4-312B
Safety Injection check valves 4-874A, 4-874B and upstream piping	1	2 in.	A376 TP316 SMLS Sch. 160	140 ft.	B-P	5614-M-3062 Sh. 1	Check valves 4-874A and 4-874B to remain closed to avoid disassembly or other temporary configurations required to achieve test pressures at upstream piping and valves MOV-4-866A and B, 4-941C and D, and 4-957
		3/4 in. 1 in.	A376 TP316 SMLS Sch. 160	≤ 3 ft.			
Pressurizer Spray line drain valve and cap	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3041 Sh. 2	Valve 4-568 remains closed to avoid pressurizing downstream pipe piece and cap
Pressurizer Spray line drain valve and cap	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3041 Sh. 2	Valve 4-569 remains closed to avoid pressurizing downstream pipe piece and cap
Regenerative Heat Exchanger outlet drain line and flange	1	3/4 in.	A376 TP316 SMLS Sch. 160	≤ 1 ft.	B-P	5614-M-3047 Sh. 1	Valve 4-201A remains closed to avoid pressurizing downstream pipe piece and flange



NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2.
2. DELETED.
3. REACTOR, STEAM GENERATORS AND PRESSURIZER DESIGNED IN ACCORDANCE WITH ASME SECTION III (1965) FOR CLASS A VESSELS. NEW STEAM GENERATOR COMPONENTS FABRICATED TO ASME SECTION III-1974 (SUMMER 1976). REPLACEMENT REACTOR VESSEL CLOSURE HEAD DESIGNED, FABRICATED, AND TESTED TO ASME SECTION III, 1989 EDITION (NO ADDENDA), CLASS 1 VESSEL. PIPING IN ACCORDANCE WITH ASA B31.1 (1955) WITH CODE CASES N-7 AND N-10 AND SPECIAL NDE REQUIREMENTS.
4. HOT LEG PIPING, 29" INSIDE DIAMETER.
5. INTERMEDIATE LEG PIPING, 31" INSIDE DIAMETER.
6. COLD LEG PIPING, 27.5" INSIDE DIAMETER.
7. SPRAY LINE SCOOP, REFERENCE DRAWING 5610-M-410-54.
8. RESISTANCE TEMPERATURE DETECTOR BYPASS HOT LEG LINE SCOOPS. REFERENCE DRAWING 5610-M-410-123.
9. RESISTANCE TEMPERATURE DETECTOR INSTALLED IN WELL. REFERENCE DRAWING 5610-M-410-52.
10. DELETED.
11. – SYMBOL INDICATES THERMAL SLEEVE FITTING. REFERENCE DRAWINGS 5610-M-410-49, -50, -55, -56 AND PRESSURIZER MANUAL.
12. STAINLESS STEEL/PLASTIC TUBING IS IN USE FOR REDUCED RCS INVENTORY DURING MID-LOOP CONDITIONS MODES (5 & 6) LEVEL INDICATOR SHALL BE ISOLATED AND TUBING DISCONNECTED DURING MODES 1 THRU 4.
13. RESIDUAL HEAT REMOVAL LOOP (ACS) CONNECTION LOCATED ON BOTTOM OF PIPE AT 45° ANGLE FROM VERTICAL.
14. PIPING REFERENCE TO THIS NOTE IS 3/4" NOMINAL OUTSIDE DIAMETER, 0.234" INSIDE DIAMETER.
15. IMB = INSIDE MISSILE BARRIER
    OMB = OUTSIDE MISSILE BARRIER
16. FOR REACTOR COOLANT PUMP CONNECTIONS TO SYSTEMS NOT SHOWN ON THIS DRAWING SEE REFERENCE DRAWINGS 5613-M-3041 SH. 3 AND 5613-M-3047 SH. 3.
17. FOR STEAM GENERATOR CONNECTIONS TO SYSTEMS NOT SHOWN ON THIS DRAWING SEE 5613-M-3072 SH. 1 MAIN STEAM SYSTEM AND 5613-M-3074 SH. 3 FEEDWATER SYSTEM.
18. THE THERMOWELLS ARE NUMBERED B1, B2, & B3 (WITH B1 AT THE TOP) CLOCKWISE LOOKING TOWARDS THE REACTOR VESSEL.
19. THE RTD CONTAINS DUAL ELEMENTS, THEREFORE HAS AN INSTALLED SPARE.

REFERENCE DRAWINGS

5613-M-3041 SH. 2	REACTOR COOLANT SYSTEM
5613-M-3041 SH. 3	REACTOR COOLANT SYSTEM REACTOR COOLANT PUMPS
5613-M-3036 SH. 1	SAMPLE SYSTEM - NSSS
5613-M-3047 SH. 3	CVCS - SEAL WATER INJECTION TO RCP
5613-M-3050 SH. 1	RESIDUAL HEAT REMOVAL SYSTEM
5613-M-3062 SH. 1	SAFETY INJECTION SYSTEM
5613-M-3064 SH. 1	SAFETY INJECTION ACCUMULATOR SYSTEM
5613-M-3061 SH. 1	WASTE DISPOSAL SYSTEM - LIQUIDS
5650-M-3065 SH. 1	NITROGEN & HYDROGEN SYSTEMS
5610-T-D-2	CONTROL SYSTEM DIAGRAM, CONTROL, PROTECTION SAFEGUARDS AND STATUS MONITORING SYSTEMS
5610-T-D-15	CONTROL SYSTEM DIAGRAM, PRESSURIZER LEVEL CONTROL & PROTECTION AND CHARGING PUMP CONTROL
5610-T-D-16A	CONTROL SYSTEM DIAGRAM, PRESSURIZER PRESSURE PROTECTION AND OVERPRESSURE MITIGATION SYSTEM
5610-T-D-16B	CONTROL SYSTEM DIAGRAM, PRESSURIZER PRESSURE CONTROL
5610-T-L1 (SERIES)	LOGIC DIAGRAMS

THIS DRAWING SUPERSEDES DRAWINGS:

5610-M-410-91	SH. 1	REV. 13
5610-M-366		REV. 4
5610-M-1288		REV. 4
5610-M-410-202	SH. 2	REV. 6
5610-M-367		REV. 2
5610-M-410-202	SH. 1	REV. 4
5610-M-410-91	SH. 2	REV. 30
5610-M-355		REV. 2
5610-M-353		REV. 2
5610-M-1297		REV. 5

NOTE: THIS DWG IS MADE FROM:
FPL POD 5610-T-E-4501 SH. 1 REV. 90
FPL POD 5610-T-E-4061 SH. 1 REV. 65

POD

REV	DATE	REVISION	BY	CH	APP	APP
29	6-12-09	ISSUED AS-BUILT PER CRN-M-12566 (PC/M 09-005).	RH	RV	BRG	PRB
28	3-20-08	ISSUED AS-BUILT PER CRN M-12280 (PC/M 07-095).	RH	RV	PJV	PRB
27	10-23-07	ISSUED AS-BUILT PER CRN-M-12029 (PC/M 07-021).	RH	RV	PJV	MCT
26	7-10-06	ISSUED AS-BUILT PER CRN E-17247 (PC/M 03-106).	RH	BB	-	TS
25	6/22/06	ISSUED AS-BUILT PER CRN M-11658 (PC/M 03-106).	RH	RV	RSV	JTL
24	3-26-06	ISSUED AS-BUILT PER PC/M 04-012 & INCORP. CRN M-11529.	RH	SB	BSG	JTL
23	11-17-04	ISSUED AS-BUILT PER PC/M 03-057 AND INCORP. CRN-M-11190.	RV	SB	CMZ	JTL
22	11-09-04	ISSUED AS-BUILT PER PC/M 04-012 AND INCORP. CRN-M-11143.	RV	RH	ASD	JMM
21	05-19-03	ISSUED AS-BUILT PER CRN-M-10612 (PC/M 02-065).	RH	RV	AAP	CMZ
20	10-12-01	ISSUED AS-BUILT PER CRN-M-10420 (PC/M 98-008).	RH	RH	BP	TS
19	09-28-01	ISSUED AS-BUILT PER PC/M 99-051.	RH	RV	ASD	JM
18	04-06-00	ISSUED AS-BUILT PER CRN-M-9993 (PC/M 99-061).	JPC	JZ	—	JRH

FPL

TURKEY POINT NUCLEAR UNIT 3

P & I D

REACTOR COOLANT SYSTEM

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

DRAWING NUMBER 5613-M-3041
SYS 041
SHEET 1
REV 29

5613-M-3041_SH 1.DWG

DWG NO 5613-M-3064 SHT 1

NOTE: THIS DWG IS MADE FROM:

FPL PDD	5610-T-E-4501 SH. 1	REV. 90
FPL PDD	5610-T-E-4510 SH. 2	REV. 72
FPL PDD	5610-T-E-4515 SH. 2	REV. 22

THIS DRAWING SUPERSEDES DRAWINGS:

5610-M-356	REV. 3
5610-M-370	REV. 3
5610-M-470-45 SH. 4	REV. 4
5610-M-470-45 SH. 3	REV. 10
5610-M-470-5 SH. 3	REV. 31
5610-M-470-5 SH. 4	REV. 26
5610-M-369	REV. 5
5610-M-450-53	REV. 22
5610-M-1300	REV. 4

NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2.
2. ALL SAFETY-RELATED PIPING AND ASSOCIATED COMPONENTS DEPICTED ON THIS DRAWING ARE WITHIN THE SCOPE OF LICENSE RENEWAL UNLESS NOTED OTHERWISE.
3. ALL COMPONENTS ON THIS DRAWING ARE WITHIN THE SEISMIC/Q-BOUNDARY.
4. REQUIRED FOR CONTAINMENT LEAK RATE TEST.
5. BREAKERS ON VALVES MOV-3-865A,B, & C ARE LOCKED OPEN.
6. IMB = INSIDE MISSILE BARRIER.
7. N_2 SUPPLY VENT VALVE HCV-3-936 OPENS AT 900 PSIG UNDER SEAT.
8. VALVE 3-883R IS LOCKED TO ASSURE ADEQUATE MAKEUP TO ACCUMULATORS AND TO RESTRICT FLOW DURING HIGH HEAD SAFETY INJECTION FUNCTIONS.
9. SCHEDULE 140 PIPE.
10. A 3/16" HOLE IS BORED IN DISC TO PROVIDE A RELIEF PATH FROM BETWEEN DISCS IN DIRECTION OF ARROW.
11. INTERDISC RELIEF NOT REQUIRED PER PCM 89-228
12. 325 FT^3 OF N_2 @ 850 PSIG 876-907 FT^3 OF 1950 PPM BA
13. THIS VALVE IS CONSIDERED TO BE LOCKED CLOSED BY VIRTUE OF ITS DESIGN WHICH REQUIRES A SPECIAL TOOL TO OPERATE THE REACH ROD.

REFERENCE DRAWINGS:

5613-M-3036 SH. 1	SAMPLE SYSTEM
5613-M-3041 SH. 1	REACTOR COOLANT SYSTEM LOOPS
5613-M-3041 SH. 2	REACTOR COOLANT SYSTEM PRESSURIZER
5613-M-3050 SH. 1	RESIDUAL HEAT REMOVAL
5613-M-3062 SH. 1	SAFETY INJECTION SYSTEM
5613-M-3065 SH. 1	NITROGEN & HYDROGEN
5613-M-3061 SH. 1	WASTE DISPOSAL SYSTEM

POD

REV	DATE	REVISION	BY	CH	APP	APP
18	2-3-99	ISSUED AS-BUILT PER CRN-M-9564 (PC/M 98-045).	RH	RV	DF	JJC
26	5-28-12	ISSUED AS-BUILT PER EC 242466.	RV	SB	-	BAB
25	3-29-09	ISSUED AS-BUILT PER CRN's M-12613, M-12614, M-12619, M-12623 & M-12626 (PC/M 09-003).	RV	BB	MCT	DM
24	5-22-06	ISSUED AS-BUILT PER CRN-M-11669 (PC/M.03-106).	RH	RV	BSG	JTL
23	6-23-03	ISSUED AS-BUILT PER CRN-M-10746 (PC/M 02-065).	RH	RV	AAP	JTL
22	10-17-01	ISSUED AS-BUILT PER PC/M 01-014.	RH	RV	ASD	JMM
21	10-02-01	ISSUED AS-BUILT FOR PC/M 93-047.	RH	JK	PRB	JM
20	5-10-00	ISSUED AS-BUILT PER CRN'S M-10039 & M-10065 (PC/M 99-061).	RH	RV	JK	ASD
19	3-18-00	ISSUED AS-BUILT PER CRN-M-9923 (PC/M 99-046) AND CRN-M-9993 (PC/M 99-051).	JPG	RH	JK	ASD
0	4-2-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPN-91-044.	CFH	MD	RAS SYM	LRB

FPL

TURKEY POINT NUCLEAR UNIT 3

P & I D

SAFETY INJECTION ACCUMULATOR SYSTEM INSIDE CONTAINMENT

STONE & WEBSTER ENGINEERING CORP. FT. LAUDERDALE, FLORIDA

DRAWING NUMBER 5613-M-3064

SYS 064

REV 26

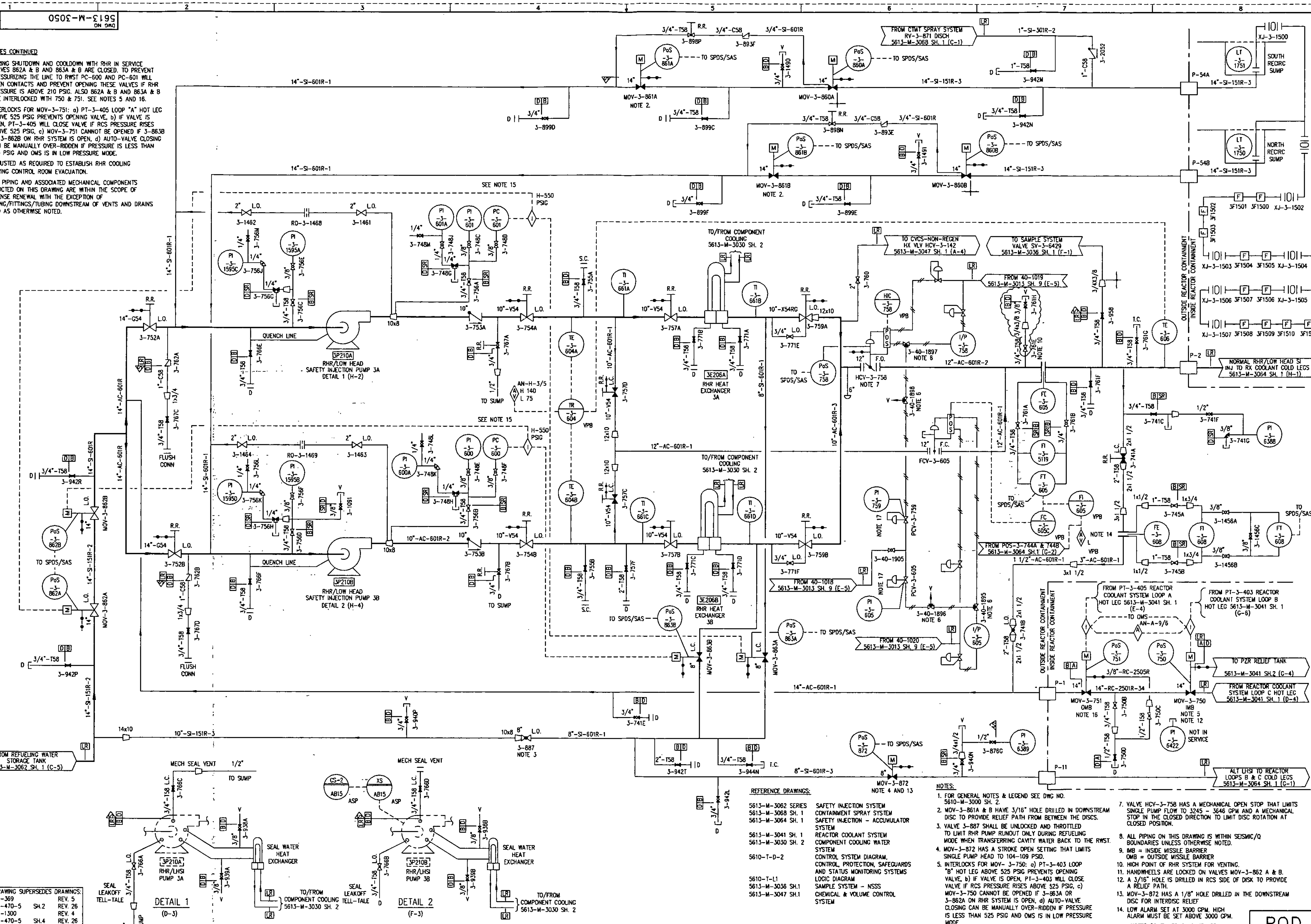
SHEET 1

5613-M-3064_SH 1.DWG

DWG NO	SHT
5613-M-3050	1

NOTES CONTINUED

15. DURING SHUTDOWN AND COOLDOWN WITH RHR IN SERVICE VALVES 862A & B AND 863A & B ARE CLOSED. TO PREVENT PRESSURIZING THE LINE TO RWST PC-600 AND PC-601 WILL OPEN CONTACTS AND PREVENT OPENING THESE VALVES IF RHR PRESSURE IS ABOVE 210 PSIG. ALSO 862A & B AND 863A & B ARE INTERLOCKED WITH 750 & 751. SEE NOTES 5 AND 16.
16. INTERLOCKS FOR MOV-3-751: a) PT-3-405 LOOP "A" HOT LEG ABOVE 525 PSIG PREVENTS OPENING VALVE, b) IF VALVE IS OPEN, PT-3-405 WILL CLOSE VALVE IF RCS PRESSURE RISES ABOVE 525 PSIG, c) MOV-3-751 CANNOT BE OPENED IF 3-863B OR 3-862B ON RHR SYSTEM IS OPEN, d) AUTO-VALVE CLOSING CAN BE MANUALLY OVER-RIDDEN IF PRESSURE IS LESS THAN 525 PSIG AND OMS IS IN LOW PRESSURE MODE.
17. ADJUSTED AS REQUIRED TO ESTABLISH RHR COOLING DURING CONTROL ROOM EVACUATION.
18. ALL PIPING AND ASSOCIATED MECHANICAL COMPONENTS DEPICTED ON THIS DRAWING ARE WITHIN THE SCOPE OF LICENSE RENEWAL WITH THE EXCEPTION OF PIPING/FITTINGS/TUBING DOWNSTREAM OF VENTS AND DRAINS AND AS OTHERWISE NOTED.



REFERENCE DRAWINGS:

5613-M-3062 SERIES	SAFETY INJECTION SYSTEM
5613-M-3068 SH. 1	CONTAINMENT SPRAY SYSTEM
5613-M-3064 SH. 1	SAFETY INJECTION - ACCUMULATOR SYSTEM
5613-M-3041 SH. 1	REACTOR COOLANT SYSTEM
5613-M-3030 SH. 2	COMPONENT COOLING WATER SYSTEM
5610-T-D-2	CONTROL SYSTEM DIAGRAM, CONTROL, PROTECTION, SAFEGUARDS AND STATUS MONITORING SYSTEMS
5610-T-L1	LOGIC DIAGRAM
5613-M-3036 SH.1	SAMPLE SYSTEM - NSSS
5613-M-3047 SH.1	CHEMICAL & VOLUME CONTROL SYSTEM

NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2.
2. MOV-3-861A & B HAVE 3/16" HOLE DRILLED IN DOWNSTREAM DISC TO PROVIDE RELIEF PATH FROM BETWEEN THE DISCS.
3. VALVE 3-887 SHALL BE UNLOCKED AND THROTTLED TO LIMIT RHR PUMP RUNOUT ONLY DURING REFUELING MODE WHEN TRANSFERRING CAVITY WATER BACK TO THE RWST.
4. MOV-3-872 HAS A STROKE OPEN SETTING THAT LIMITS SINGLE PUMP HEAD TO 104-109 PSID.
5. INTERLOCKS FOR MOV- 3-750: a) PT-3-403 LOOP "B" HOT LEG ABOVE 525 PSIG PREVENTS OPENING VALVE, b) IF VALVE IS OPEN, PT-3-403 WILL CLOSE VALVE IF RCS PRESSURE RISES ABOVE 525 PSIG, c) MOV-3-750 CANNOT BE OPENED IF 3-863A OR 3-862A ON RHR SYSTEM IS OPEN, d) AUTO-VALVE CLOSING CAN BE MANUALLY OVER-RIDDEN IF PRESSURE IS LESS THAN 525 PSIG AND OMS IS IN LOW PRESSURE MODE.
6. SEALED IN AS SHOWN.
7. VALVE HCV-3-758 HAS A MECHANICAL OPEN STOP THAT LIMITS SINGLE PUMP FLOW TO 3245 - 3646 GPM AND A MECHANICAL STOP IN THE CLOSED DIRECTION TO LIMIT DISC ROTATION AT CLOSED POSITION.
8. ALL PIPING ON THIS DRAWING IS WITHIN SEISMIC/Q BOUNDARIES UNLESS OTHERWISE NOTED.
9. IMB = INSIDE MISSILE BARRIER
   OMB = OUTSIDE MISSILE BARRIER
10. HIGH POINT OF RHR SYSTEM FOR VENTING.
11. HANDWHEELS ARE LOCKED ON VALVES MOV-3-862 A & B.
12. A 3/16" HOLE IS DRILLED IN RCS SIDE OF DISK TO PROVIDE A RELIEF PATH.
13. MOV-3-872 HAS A 1/8" HOLE DRILLED IN THE DOWNSTREAM DISC FOR INTERDISC RELIEF
14. LOW ALARM SET AT 3000 GPM. HIGH ALARM MUST BE SET ABOVE 3000 GPM.

NOTES CONTINUES @ UPPER LEFT.

POD

THIS DRAWING SUPERSEDES DRAWINGS:		
5610-M-369		REV. 5
5610-M-470-5	SH.2	REV. 26
5610-M-1300		REV. 4
5610-M-470-5	SH.4	REV. 26
5610-M-370		REV. 3
5610-M-450-53		REV. 22
5610-M-470-5	SH.3	REV. 31
5610-M-470-45	SH.2	REV. 6
5610-M-470-45	SH.3	REV. 10
5610-M-470-45	SH.4	REV. 4

NOTE: THIS DWG IS MADE FROM:
FPL POD 5610-T-E-4510 SH.1 REV. 101
FPL POD 5610-T-E-4510 SH.2 REV. 72
FPL POD 5610-T-E-4515 SH.2 REV. 22

REV	DATE	REVISION	BY	CH	APP	APP
35	12-15-09	ISSUED AS-BUILT PER CRN-M-12962 (PC/M 08-067).	RV	BB	BSG	EB
34	3-25-09	ISSUED AS-BUILT PER CRN-M-12491 (PC/M 08-067).	RH	PJV	ASD	PRB
33	3-21-09	ISSUED AS-BUILT PER CRN-M-12492 (PC/M 08-067).	RH	AFC	ASD	SB
32	10-2-07	ISSUED. AS-BUILT PER PC/M 06-030.	RH	JPG	ASD	JMM
31	9-18-07	ISSUED AS-BUILT PER PC/M 06-057.	RH	JPG	MCT	JMM
30	6-20-07	ISSUED AS-BUILT PER CRN-M-12028 (PC/M 07-021).	RH	RV	BSG	ASD

REV	DATE	REVISION	BY	CH	APP	APP
29	1-19-07	ISSUED AS-BUILT PER CRN-M-11923 (PC/M 06-073).	RV	BB	-	PRB
28	10-20-06	ISSUED AS-BUILT PER CRN M-11829 (PC/M 03-108).	RH	RV	BSG	JTL
27	1-31-06	ISSUED AS-BUILT PER PC/M 04-104.	RH	BB	AAP	TEJ
26	1-6-06	ISSUED AS-BUILT PER PC/M 04-104. (PARTIAL)	RV	BB	JMZ	JTL
0	4-2-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	TAM	MD	RAS/SVM	LRB
—	—	AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPM-91-044.	—	—	—	—

FPL

TURKEY POINT NUCLEAR UNIT 3

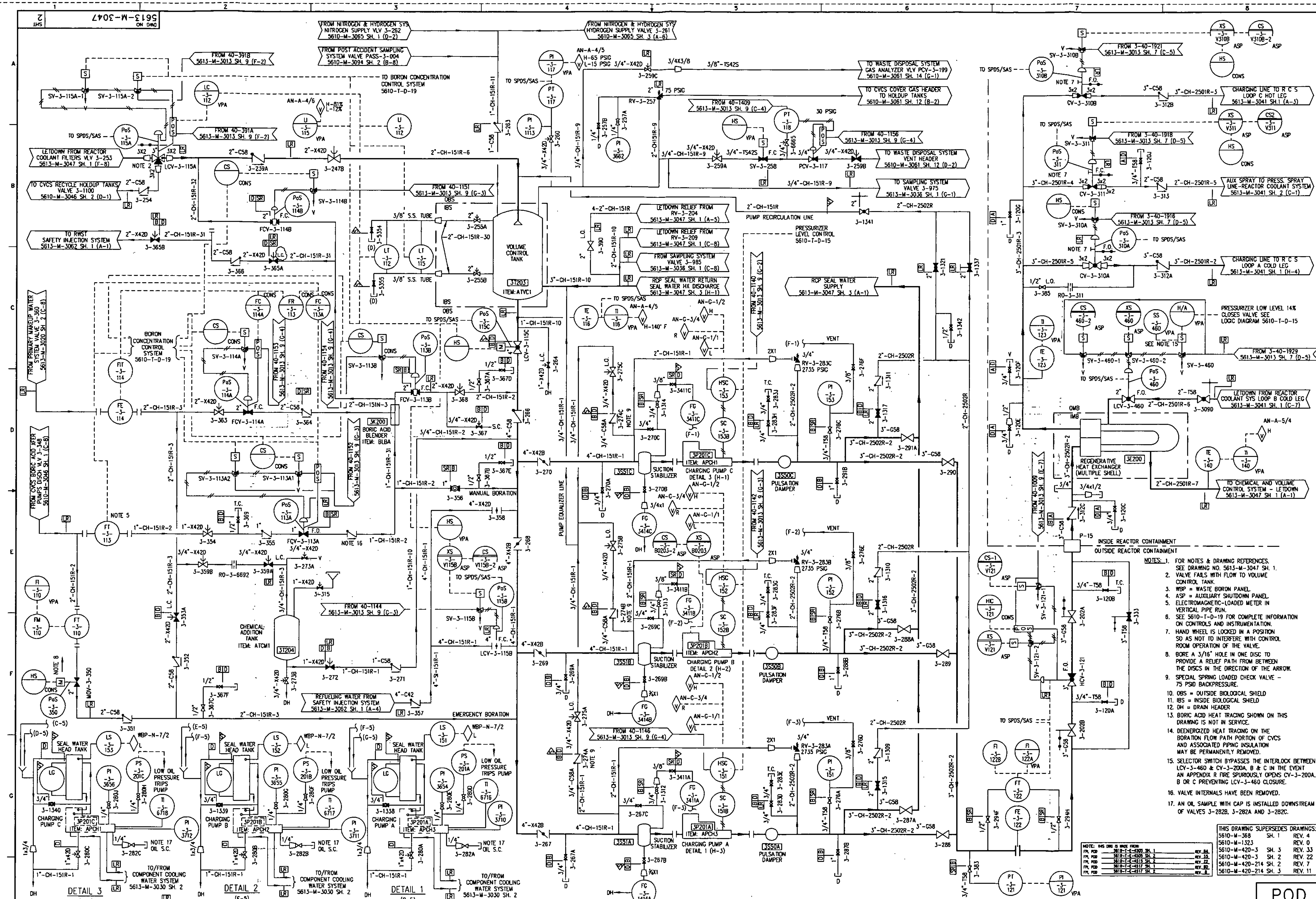
P & I D

RESIDUAL HEAT REMOVAL SYSTEM

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

DRAWING NUMBER	SYS
5613-M-3050	050
SHEET 1	REV 35

8 5613-M-3050_SH 1.DWG


5613-M-3047
SHT 2
FROM NITROGEN & HYDROGEN SYS NITROGEN SUPPLY VLV 3-262 5610-M-3065 SH. 1 (D-2)
FROM NITROGEN & HYDROGEN SYS HYDROGEN SUPPLY VALVE 3-261 5610-M-3065 SH. 3 (A-6)
FROM POST ACCIDENT SAMPLING SYSTEM VALVE PASS-3-004 5610-M-3094 SH. 2 (B-8)
TO BORON CONCENTRATION CONTROL SYSTEM 5610-T-D-19
TO WASTE DISPOSAL SYSTEM GAS ANALYZER VLV PCV-3-199 5610-M-3061 SH. 14 (G-1)
TO CVCS COVER GAS HEADER TO HOLDUP TANKS 5610-M-3061 SH. 12 (B-2)
TO WASTE DISPOSAL SYSTEM VENT HEADER 5610-M-3061 SH. 12 (D-2)
TO SAMPLING SYSTEM VALVE 3-975 5613-M-3036 SH. 1 (G-1)
LETDOWN FROM REACTOR COOLANT FILTERS VLV 3-253 5613-M-3047 SH. 1 (F-8)
TO CVCS RECYCLE HOLDUP TANKS VALVE 3-1100 5610-M-3046 SH. 2 (D-1)
TO RWST SAFETY INJECTION SYSTEM 5613-M-3062 SH. 1 (A-1)
VOLUME CONTROL TANK
LETDOWN RELIEF FROM RV-3-204 5613-M-3047 SH. 1 (A-5)
LETDOWN RELIEF FROM RV-3-209 5613-M-3047 SH. 1 (C-8)
FROM SAMPLING SYSTEM VALVE 3-985 5613-M-3036 SH. 1 (C-8)
RCP SEAL WATER RETURN SEAL WATER HX DISCHARGE 5613-M-3047 SH. 3 (H-1)
RCP SEAL WATER SUPPLY 5613-M-3047 SH. 3 (A-1)
PRESSURIZER LEVEL CONTROL 5610-T-D-15
PUMP RECIRCULATION LINE
BORON CONCENTRATION CONTROL SYSTEM 5610-T-D-19
BORIC ACID BLENDER ITEM: BLBA
MANUAL BORATION
EMERGENCY BORATION
CHEMICAL ADDITION TANK ITEM: ATCM1
REFUELING WATER FROM SAFETY INJECTION SYSTEM 5613-M-3062 SH. 1 (A-4)
SUCTION STABILIZER
CHARGING PUMP C DETAIL 3 (H-1)
CHARGING PUMP B DETAIL 2 (H-2)
CHARGING PUMP A DETAIL 1 (H-3)
PULSATION DAMPER
PUMP EQUALIZER LINE
CHARGING LINE TO R C S LOOP C HOT LEG 5613-M-3041 SH. 1 (A-3)
AUX SPRAY TO PRESS. SPRAY LINE-REACTOR COOLANT SYSTEM 5613-M-3041 SH. 2 (C-1)
CHARGING LINE TO R C S LOOP A COLD LEG 5613-M-3041 SH. 1 (H-4)
PRESSURIZER LOW LEVEL 14% CLOSES VALVE SEE LOGIC DIAGRAM 5610-T-D-15
LETDOWN FROM REACTOR COOLANT SYS LOOP B COLD LEG 5613-M-3041 SH. 1 (C-7)
REGENERATIVE HEAT EXCHANGER (MULTIPLE SHELL)
TO CHEMICAL AND VOLUME CONTROL SYSTEM - LETDOWN 5613-M-3047 SH. 1 (A-1)
INSIDE REACTOR CONTAINMENT
OUTSIDE REACTOR CONTAINMENT
SEAL WATER HEAD TANK
LOW OIL PRESSURE TRIPS PUMP
TO/FROM COMPONENT COOLING WATER SYSTEM 5613-M-3030 SH. 2
DETAIL 3 (E-5)
DETAIL 2 (F-5)
DETAIL 1 (G-5)
HYDRAULIC COUPLING
OIL COOLER
DETAIL 4
TYPICAL DETAIL FOR CHARGING PUMP OIL COOLERS
NOTE: THIS DWG IS MADE FROM:
FPL POD 5610-T-E-4505 SH. 1 REV. 84
FPL POD 5610-T-E-4505 SH. 2 REV. 55
FPL POD 5610-T-E-4515 SH. 2 REV. 22
FPL POD 5610-T-E-4517 SH. 1 REV. 80
FPL POD 5610-T-E-4517 SH. 2 REV. 8

NOTES:
1. FOR NOTES & DRAWING REFERENCES, SEE DRAWING NO. 5613-M-3047 SH. 1.
2. VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK.
3. WBP = WASTE BORON PANEL.
4. ASP = AUXILIARY SHUTDOWN PANEL.
5. ELECTROMAGNETIC-LOADED METER IN VERTICAL PIPE RUN.
6. SEE 5610-T-D-19 FOR COMPLETE INFORMATION ON CONTROLS AND INSTRUMENTATION.
7. HAND WHEEL IS LOCKED IN A POSITION SO AS NOT TO INTERFERE WITH CONTROL ROOM OPERATION OF THE VALVE.
8. BORE A 3/16" HOLE IN ONE DISC TO PROVIDE A RELIEF PATH FROM BETWEEN THE DISCS IN THE DIRECTION OF THE ARROW.
9. SPECIAL SPRING LOADED CHECK VALVE - 75 PSID BACKPRESSURE.
10. OBS = OUTSIDE BIOLOGICAL SHIELD
11. IBS = INSIDE BIOLOGICAL SHIELD
12. DH = DRAIN HEADER
13. BORIC ACID HEAT TRACING SHOWN ON THIS DRAWING IS NOT IN SERVICE.
14. DEENERGIZED HEAT TRACING ON THE BORATION FLOW PATH PORTION OF CVCS AND ASSOCIATED PIPING INSULATION MAY BE PERMANENTLY REMOVED.
15. SELECTOR SWITCH BYPASSES THE INTERLOCK BETWEEN LCV-3-460 & CV-3-200A, B & C IN THE EVENT AN APPENDIX R FIRE SPURIOUSLY OPENS CV-3-200A, B OR C PREVENTING LCV-3-460 CLOSURE.
16. VALVE INTERNALS HAVE BEEN REMOVED.
17. AN OIL SAMPLE WITH CAP IS INSTALLED DOWNSTREAM OF VALVES 3-282B, 3-282A AND 3-282C.

THIS DRAWING SUPERSEDES DRAWINGS:		
5610-M-368	SH. 1	REV. 4
5610-M-1323		REV. 0
5610-M-420-3	SH. 3	REV. 33
5610-M-420-3	SH. 2	REV. 22
5610-M-420-214	SH. 2	REV. 7
5610-M-420-214	SH. 3	REV. 11

POD

REV	DATE	REVISION	BY	CH	APP	APP
55	12/13/12	ISSUED AS-BUILT PER CRN M-12391 (EC 241742) (ITOP 12-12-043)	AFC	CBW	-	DAS
54	5/24/12	ISSUED AS-BUILT PER EC 270716.	RV	AFC	JC	AC
53	9/28/10	ISSUED AS-BUILT PER EC 241979.	RV	BB	BSG	PRB
52	8-20-10	ISSUED AS-BUILT PER CRN'S I-4272 & M-11882 (PC/M 04-047).	RV	BB	BSG	PRB
51	6-14-10	ISSUED AS-BUILT PER PC/M 04-047; INCORP. CRN'S M-11882 & I-4272 (Partial)	RH	RV	BSG	PRB
50	4/1/10	ISSUED AS-BUILT PER CRN E-18146 (PC/M 10-007).	RH	RV	-	LG

REV	DATE	REVISION	BY	CH	APP	APP
49	04-04-07	ISSUED AS-BUILT PER CRN M-11984 (PC/M 06-108).	RH	RV	LG	-
48	10/5/06	ISSUED AS-BUILT PER CRN-I-4476 (PC/M 03-106).	RH	JPG	-	PDS
47	8/29/06	ISSUED AS-BUILT PER CRN M-11551 (PC/M 02-053).	RH	BB	BSG	ASD
56	1/25/13	ISSUED AS-BUILT PER EC-DCR 277328.	AFC	BB	-	GC
0	3-5-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	MAB	MD	RAS/SVM	LRB
—	—	AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPM-91-045.	—	—	—	—

FPL

TURKEY POINT NUCLEAR UNIT 3

P & ID

CHEMICAL AND VOLUME CONTROL SYSTEM
CHARGING AND LETDOWN

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

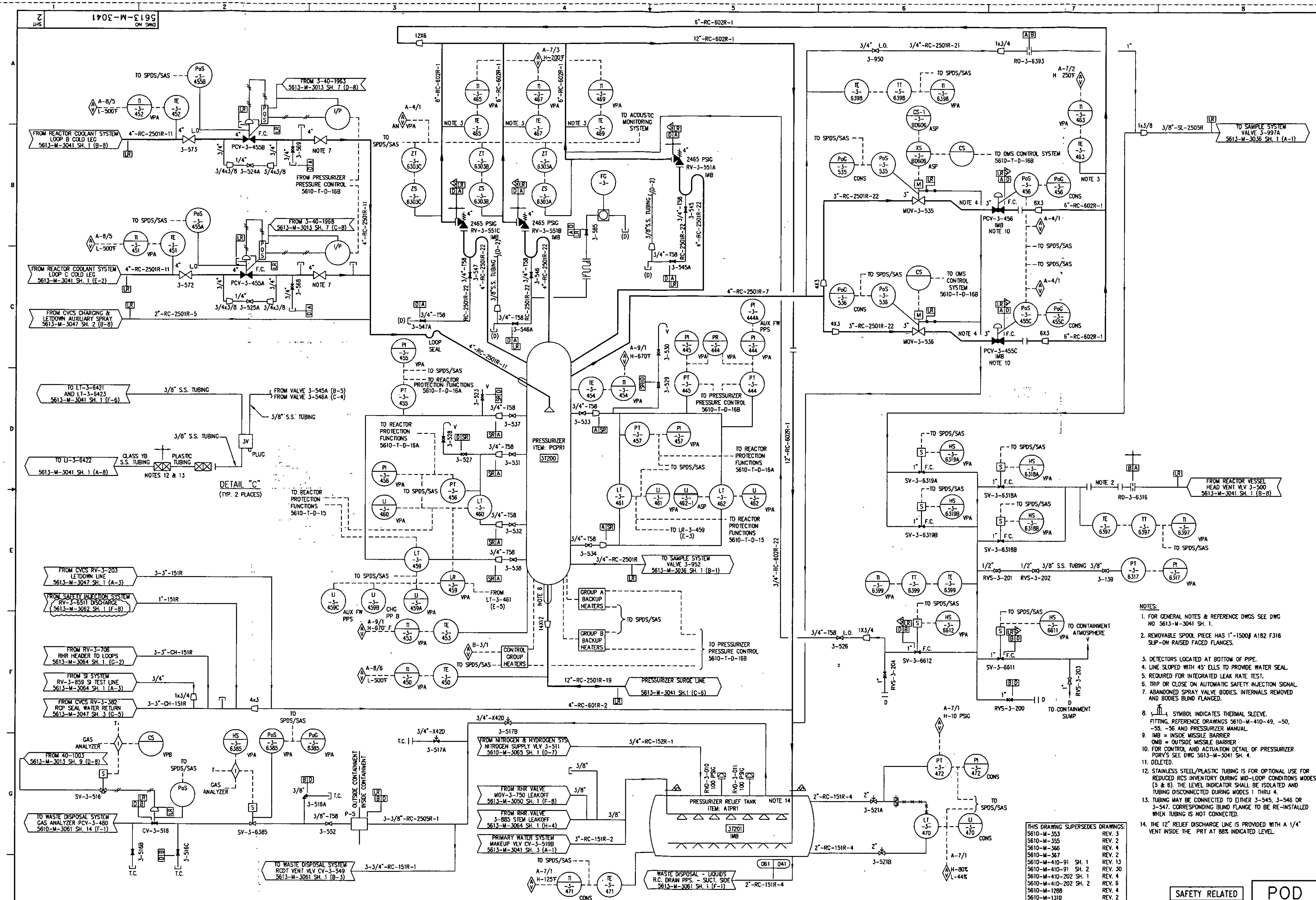
DRAWING NUMBER 5613-M-3047

SHEET 2

SYS 047

REV 56

5613-M-3047_SH 2



NOTES:

1. FOR GENERAL NOTES & REFERENCE DWGS SEE DWG NO 5613-M-3041 SH. 1.
2. REMOVABLE SPOOL PIECE HAS 1"-1500# A182 F316 SLIP-ON RAISED FACED FLANGES.
3. DETECTORS LOCATED AT BOTTOM OF PIPE.
4. LINE SLOPED WITH 45° ELLS TO PROVIDE WATER SEAL.
5. REQUIRED FOR INTEGRATED LEAK RATE TEST.
6. TRIP OR CLOSE ON AUTOMATIC SAFETY INJECTION SIGNAL.
7. ABANDONED SPRAY VALVE BODIES. INTERNALS REMOVED AND BODIES BLIND FLANGED.
8. SYMBOL INDICATES THERMAL SLEEVE. FITTING, REFERENCE DRAWINGS 5610-M-410-49, -50, -55, -56 AND PRESSURIZER MANUAL.
9. IMB = INSIDE MISSILE BARRIER
   OMB = OUTSIDE MISSILE BARRIER
10. FOR CONTROL AND ACTUATION DETAIL OF PRESSURIZER PORV'S SEE DWG 5613-M-3041 SH. 4.
11. DELETED.
12. STAINLESS STEEL/PLASTIC TUBING IS FOR OPTIONAL USE FOR REDUCED RCS INVENTORY DURING MID-LOOP CONDITIONS MODES (5 & 6). THE LEVEL INDICATOR SHALL BE ISOLATED AND TUBING DISCONNECTED DURING MODES 1 THRU 4.
13. TUBING MAY BE CONNECTED TO EITHER 3-545, 3-546 OR 3-547. CORRESPONDING BLIND FLANGE TO BE RE-INSTALLED WHEN TUBING IS NOT CONNECTED.
14. THE 12" RELIEF DISCHARGE LINE IS PROVIDED WITH A 1/4" VENT INSIDE THE PRT AT 88% INDICATED LEVEL.

THIS DRAWING SUPERSEDES DRAWINGS:	
5610-M-353	REV. 3
5610-M-355	REV. 2
5610-M-366	REV. 4
5610-M-367	REV. 2
5610-M-410-91 SH. 1	REV. 13
5610-M-410-91 SH. 2	REV. 30
5610-M-410-202 SH. 1	REV. 4
5610-M-410-202 SH. 2	REV. 6
5610-M-1288	REV. 4
5610-M-1310	REV. 2

SAFETY RELATED

POD

NOTE: THIS DWG IS MADE FROM:
FPL POD 5610-T-E-4501 SH. 1 REV 90
FPL POD 5610-T-E-4517 SH. 2 REV 8

REV	DATE	REVISION	BY	CH	APP	APP	REV	DATE	REVISION	BY	CH	APP	APP
43	7/13/12	ISSUED AS-BUILT PER EC 246977 (PC/M 09-083).	RV	BB	JN	JD	37	3-26-06	ISSUED AS-BUILT PER PC/M 04-012 AND INCORP. CRN M-11529.	RH	SB	BSG	JTL
42	7/12/12	ISSUED AS-BUILT PER EC 246924.	RH	RV	PSB	JD	36	7-11-05	ISSUED AS-BUILT PER CRN-M-11395 (PC/M 03-106).	RH	RRW	AAP	PRB
41	7/1/12	ISSUED AS-BUILT PER EC 246924 (PARTIAL).	AFC	SB	–	BP	35	12-2-04	ISSUED AS-BUILT PER PC/M 04-157.	RH	RV	AAP	JMM
40	5/24/12	ISSUED AS-BUILT PER EC 242470.	AFC	BB	–	AC	44	8-02-12	ISSUED AS-BUILT PER EC-DCR 277023.	RH	RV	–	JG
39	9/28/09	ISSUED AS-BUILT PER CRN-I-5092 (PC/M 09-070).	RV	RH	–	LG	0	2-15-91	THIS DRAWING CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	TAM	HLC	AM/RAS	LRB
38	9/25/06	ISSUED AS-BUILT PER CRN-M-11759 (PC/M 03-106)	RH	RV	BSG	JTL	—	—	AND ISSUED INTO THE FPL SYSTEM PER DCR-TPM-91-043.	—	—	—	—

FPL

TURKEY POINT NUCLEAR UNIT 3

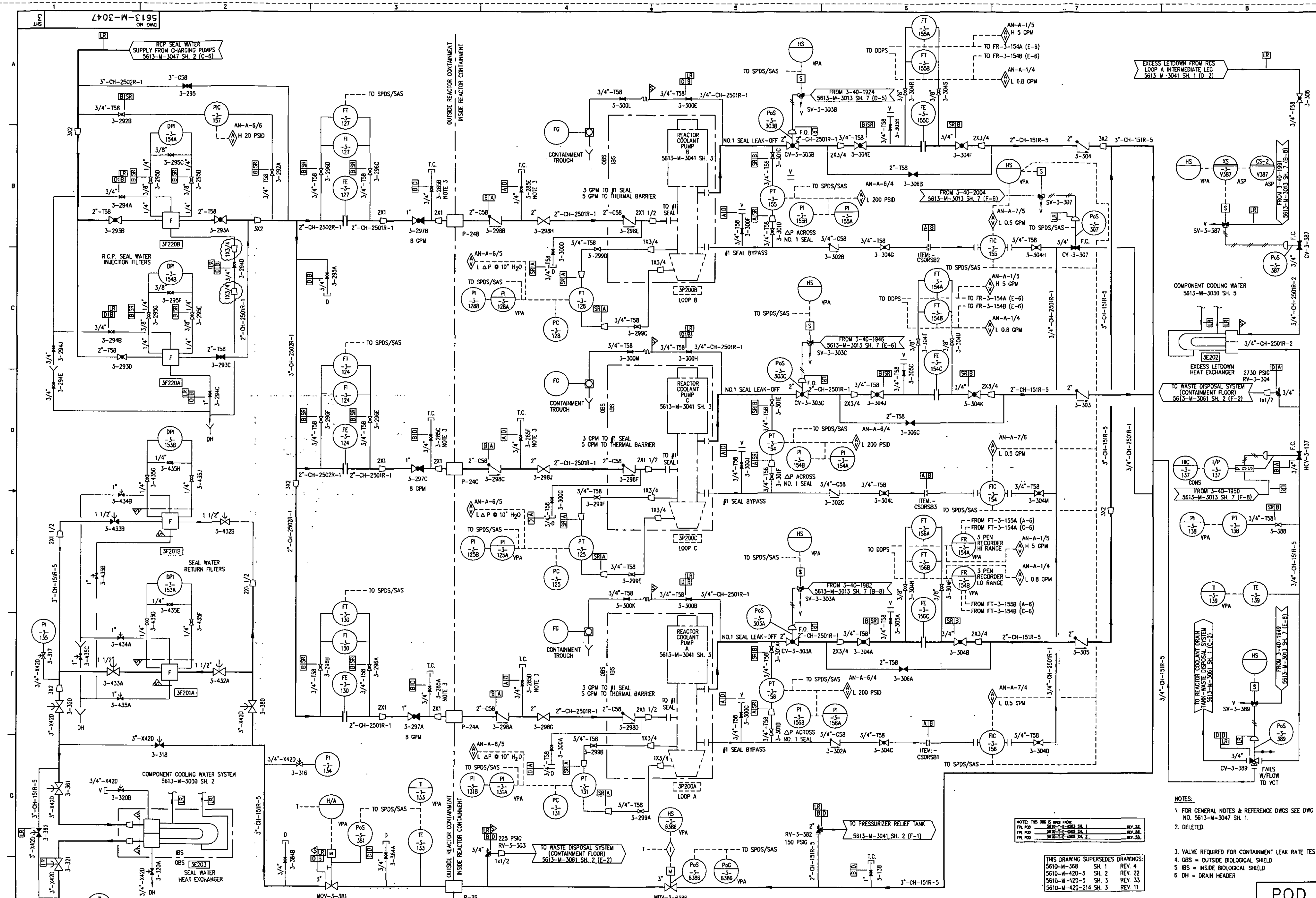
P & ID

REACTOR COOLANT SYSTEM

STONE & WEBSTER ENGINEERING CORP. FT. LAUDERDALE, FLORIDA

DRAWING NUMBER 5613-M-3041 | SYS 041 | REV 44 | SHEET 2

5613-M-3041_SH 2.DWG



NOTE: THIS DWG IS MADE FROM

FPL POD	5610-T-E-4503 SH. 1	REV. 52
FPL POD	5610-T-E-4505 SH. 1	REV. 84
FPL POD	5610-T-E-4505 SH. 2	REV. 55

THIS DRAWING SUPERSEDES DRAWINGS:

5610-M-368	SH. 1	REV. 4
5610-M-420-3	SH. 2	REV. 22
5610-M-420-3	SH. 3	REV. 33
5610-M-420-214	SH. 3	REV. 11

NOTES:

1. FOR GENERAL NOTES & REFERENCE DWGS SEE DWG NO. 5613-M-3047 SH. 1.
2. DELETED.
3. VALVE REQUIRED FOR CONTAINMENT LEAK RATE TEST.
4. OBS = OUTSIDE BIOLOGICAL SHIELD
5. IBS = INSIDE BIOLOGICAL SHIELD
6. DH = DRAIN HEADER

POD

REV	DATE	REVISION	BY	CH	APP	APP
20	5-10-00	ISSUED AS-BUILT PER CRN-M-10008 (PC/M 99-061).	RH	RV	JK	ASD
19	04-25-00	ISSUED AS-BUILT PER CRN-M-9993 (PC/M 99-061).	JPG	KCM	—	JRH
18	2-3-99	ISSUED AS-BUILT PER CRN-M-9564 (PC/M 98-045).	RH	RV	DF	JJC
17	10-23-98	ISSUED AS-BUILT PER PC/M 97-003 AND INCORP. CRN-M-9552.	RH	RV	DF	JJC
16	10-20-98	ISSUED AS-BUILT PER PC/M 97-003. (PARTIAL)	RH	RV	JZ	JJC

REV	DATE	REVISION	BY	CH	APP	APP
15	5-26-98	ISSUED AS-BUILT PER CRN-1-3716(PC/M 98-013).	RV	RH	BP	TS
23	6-12-09	ISSUED AS-BUILT PER CRN-M-12648 (PC/M 09-005).	RV	BB	BSG	PRB
22	7-6-05	ISSUED AS-BUILT PER CRN-M-11428 (PC/M 05-106).	RH	RV	CMZ	PRB
21	12-2-04	ISSUED AS-BUILT PER PC/M 04-157.	RH	RV	AAP	JMM
0	3-5-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	SM	MD	RAS/SVM	LRB
—	—	AND ~~ISSUED INTO THE FPL DWG SYSTEM~~ PER DCR-TPM-91-045.	—	—	—	—

FPL

TURKEY POINT NUCLEAR UNIT 3

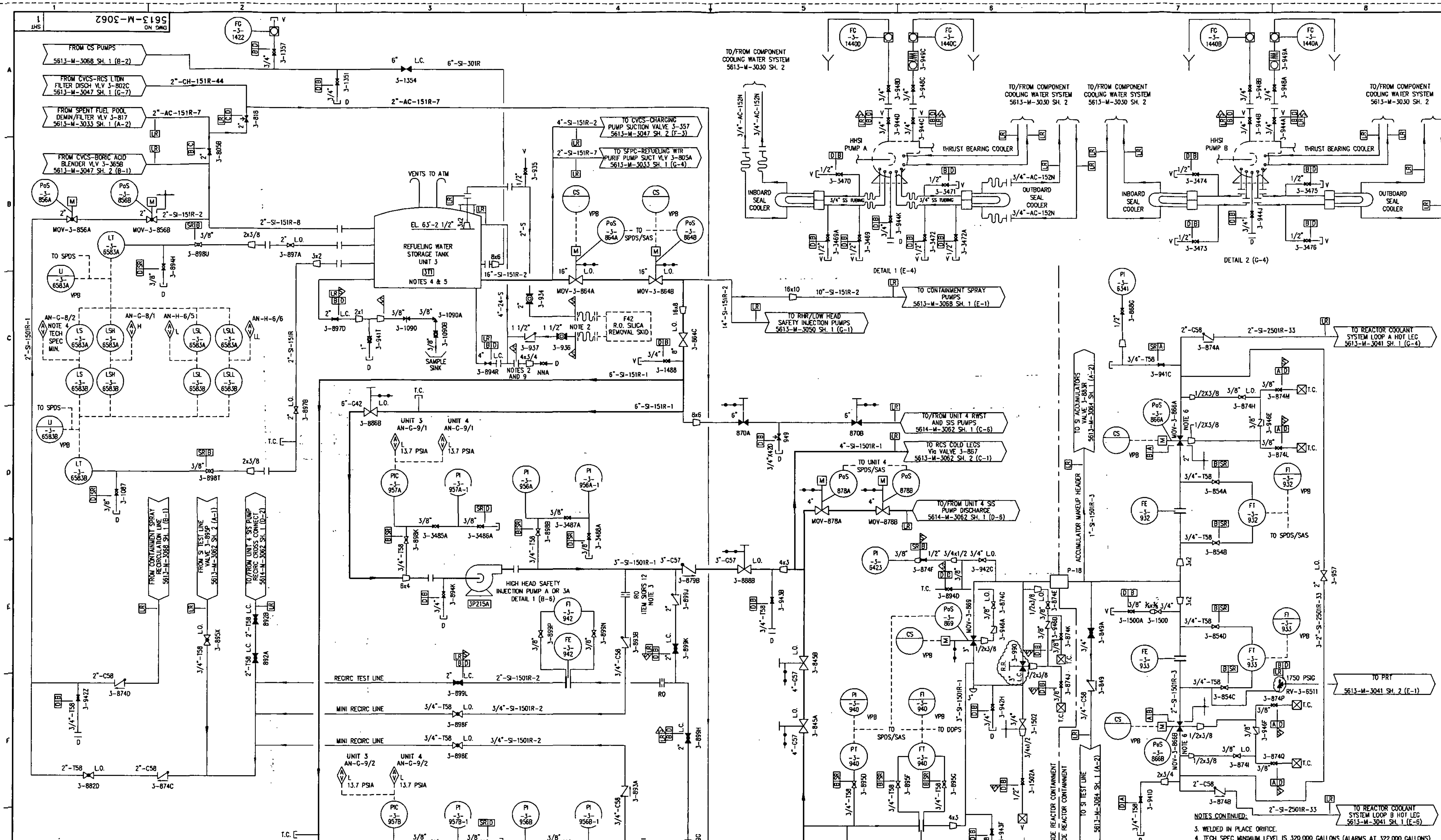
P & I D

CHEMICAL AND VOLUME CONTROL SYSTEM SEAL WATER INJECTION TO RCP

STONE & WEBSTER ENGINEERING CORP. FT. LAUDERDALE, FLORIDA

DRAWING NUMBER 5613-M-3047 | SYS 047 | SHEET 3 | REV 23

8 5613-M-3047_SH 3.DWG


5613-M-3062
DWG NO
SHT 1
FROM CS PUMPS
5613-M-3068 SH. 1 (B-2)
FROM CVCS-RCS LTDN FILTER DISCH VLV 3-802C
5613-M-3047 SH. 1 (G-7)
FROM SPENT FUEL POOL DEMIN/FILTER VLV 3-817
5613-M-3033 SH. 1 (A-2)
FROM CVCS-BORIC ACID BLENDER VLV 3-365B
5613-M-3047 SH. 2 (B-1)
TO CVCS-CHARGING PUMP SUCTION VALVE 3-357
5613-M-3047 SH. 2 (F-3)
TO SFPC-REFUELING WTR PURIF PUMP SUCT VLV 3-805A
5613-M-3033 SH. 1 (G-4)
VENTS TO ATM
REFUELING WATER STORAGE TANK UNIT 3
NOTES 4 & 5
TO CONTAINMENT SPRAY PUMPS
5613-M-3068 SH. 1 (E-1)
TO RHR/LOW HEAD SAFETY INJECTION PUMPS
5613-M-3050 SH. 1 (G-1)
F42 R.O. SILICA REMOVAL SKID
SAMPLE SINK
TO/FROM COMPONENT COOLING WATER SYSTEM
5613-M-3030 SH. 2
HHSI PUMP A
HHSI PUMP B
THRUST BEARING COOLER
INBOARD SEAL COOLER
OUTBOARD SEAL COOLER
DETAIL 1 (E-4)
DETAIL 2 (G-4)
TO/FROM UNIT 4 RWST AND SIS PUMPS
5614-M-3062 SH. 1 (C-6)
TO RCS COLD LEGS Via VALVE 3-867
5613-M-3062 SH. 2 (C-1)
TO/FROM UNIT 4 SIS PUMP DISCHARGE
5614-M-3062 SH. 1 (D-6)
TO REACTOR COOLANT SYSTEM LOOP A HOT LEG
5613-M-3041 SH. 1 (C-6)
TO REACTOR COOLANT SYSTEM LOOP B HOT LEG
5613-M-3041 SH. 1 (E-6)
TO PRT
5613-M-3041 SH. 2 (E-1)
TO SI ACCUMULATORS VALVE 3-883R
5613-M-3064 SH. 1 (A-2)
ACCUMULATOR MAKEUP HEADER
TO SI TEST LINE
5613-M-3064 SH. 1 (A-2)
OUTSIDE REACTOR CONTAINMENT
INSIDE REACTOR CONTAINMENT
FROM CONTAINMENT SPRAY RECIRCULATION LINE
5613-M-3068 SH. 1 (B-1)
FROM SI TEST LINE VALVE 3-895P
5613-M-3062 SH. 2 (A-1)
TO/FROM UNIT 4 SIS PUMP RECIRC CROSS CONNECT
5614-M-3062 SH. 1 (D-2)
HIGH HEAD SAFETY INJECTION PUMP A OR 3A
DETAIL 1 (B-6)
HIGH HEAD SAFETY INJECTION PUMP B OR 3B
DETAIL 2 (B-8)
RECIRC TEST LINE
MINI RECIRC LINE
TO SPDS/SAS
TO DOPS
WALL PENET
1750 PSIG
3-894R
4"
DFA-RWST-1
TEMP.
2 1/2"

NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2.
2. DRAIN RIG IS INSTALLED WHEN TEMPORARY REVERSE OSMOSIS (R.O.) SILICA REMOVAL SKID, F42, IS IN SERVICE. 4" FLANGE CONNECTION IS LEFT OPEN AND DRAIN RIG IS REMOVED WHEN R.O. SKID, F42, IS NOT IN SERVICE. HOSE CONNECTIONS ARE INSTALLED WHEN R.O. SKID, F42, IS INSTALLED. 2" AND 1 1/2" BLIND FLANGES SHALL BE INSTALLED WHEN R.O. SKID IS NOT IN SERVICE.

NOTES CONTINUED:

3. WELDED IN PLACE ORIFICE.
4. TECH SPEC MINIMUM LEVEL IS 320,000 GALLONS (ALARMS AT 322,000 GALLONS) HI LEVEL IS 332,000 GALLONS. LOW LEVEL IS 155,000 GALLONS, AND LO-LO LEVEL IS 60,000 GALLONS.
5. ALL HIGH POINT LINES TO/FROM THE RWST, EXCEPT THE RECIRCULATION LINE ARE CLASSIFIED AS QUALITY GROUP D, BECAUSE THE LOSS, DAMAGE OR NONFUNCTIONING OF THESE COMPONENTS WOULD NOT PREVENT THE RWST FROM PERFORMING ITS SAFETY RELATED FUNCTION. REFERENCE PC/M 89-542.
6. BREAKERS ON VALVES MOV-3-866A & B ARE LOCKED OPEN.
7. ALL PIPING ON THIS DRAWING IS WITHIN SEISMIC/Q BOUNDARIES UNLESS OTHERWISE NOTED.
8. ALL SAFETY-RELATED PIPING AND ASSOCIATED COMPONENTS DEPICTED ON THIS DRAWING ARE WITHIN THE SCOPE OF LICENSE RENEWAL, UNLESS NOTED OTHERWISE.
9. TEMPORARY FLANGE ADAPTER NOT NORMALLY INSTALLED AND STORED NEAR PORTABLE PUMP EQUIPMENT TRAILER.

REFERENCE DRAWINGS:

5613-M-3062 SH. 2	SAFETY INJECTION SYSTEM
5613-M-3064 SH. 1	SAFETY INJECTION ACCUMULATOR CVCS
5613-M-3030 SH. 2	COMPONENT COOLING WATER SYSTEM
5613-M-3033 SH. 1	SPENT FUEL POOL COOLING SYSTEM
5613-M-3041 SH. 1	REACTOR COOLANT SYSTEM
5613-M-3047 SH. 1&2	CVCS - CHARGING AND LETDOWN SYSTEM
5613-M-3050 SH. 1	RESIDUAL HEAT REMOVAL SYSTEM
5613-M-3068 SH. 1	CONTAINMENT SPRAY SYSTEM
5614-M-3062 SH. 1	SAFETY INJECTION SYSTEM
5610-T-L1 (SERIES)	LOGIC DIAGRAMS
5610-T-D-2	CONTROL SYSTEM DIAGRAM, CONTROL, PROTECTION, SAFEGUARDS AND STATUS MONITORING SYSTEMS
5610-M-3046 SH. 1	CVCS - BORON ADDITION AND RECYCLE SYSTEM

THIS DRAWING SUPERSEDES DRAWINGS:

5610-M-369		REV. 5
5610-M-370		REV. 3
5610-M-380		REV. 5
5610-M-470-5	SH. 1	REV. 21
5610-M-470-5	SH. 2	REV. 26
5610-M-470-5	SH. 4	REV. 26
5610-M-470-45	SH. 1	REV. 5
5610-M-470-45	SH. 2	REV. 6
5610-M-470-45	SH. 4	REV. 4
5610-M-1300		REV. 4
5610-M-1387		REV. 2

NOTE: THIS DWG IS MADE FROM:

FPL POD	5610-T-E-4501 SH. 1	REV. 90
FPL POD	5610-T-E-4505 SH. 1	REV. 84
FPL POD	5610-T-E-4505 SH. 2	REV. 55
FPL POD	5610-T-E-4510 SH. 1	REV. 101

REV	DATE	REVISION	BY	CH	APP	APP
40	5-28-12	ISSUED AS-BUILT PER EC 242466.	RV	SB	-	BAB
39	5-24-12	ISSUED AS-BUILT PER EC 247012 (PARTIAL).	AFG	BB	-	MJF
38	5-18-12	ISSUED AS-BUILT PER CRN-004 (EC 242267); CRN-002 (EC 242109).	RH	CW	-	PRB
37	4-18-12	ISSUED AS-BUILT PER EC 247012 (PC/M 09-143) AND INCORP CRN-005. (PARTIAL)	RV	BB	JR	CW
36	12/14/10	ISSUED AS-BUILT PER EC 270396.	RH	RV	BSG	VMC
35	10-12-10	ISSUED AS-BUILT PER EC 242393 & INCORP. CRN 004.	RH	SB	KKD	RSV

REV	DATE	REVISION	BY	CH	APP	APP
34	10-4-10	ISSUED AS-BUILT PER EC 242393 (PARTIAL).	RH	RV	LG	RSV
33	6-30-09	ISSUED AS-BUILT PER PC/M 07-024.	RV	BB	JKP	PRB
42	7-13-12	ISSUED AS-BUILT PER EC 247012.	RH	GR	-	MJF
41	6-20-12	ISSUED AS-BUILT PER EC 247012 (PARTIAL).	RH	RV	-	MDF
0	4-2-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE AND ~~ISSUED INTO THE FPL SYSTEM~~ PER DCR-TPM-91-044.	MAB	MD	RAS SVM	LRB

POD

FPL

TURKEY POINT NUCLEAR UNIT 3

P & I D

SAFETY INJECTION SYSTEM

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

DRAWING NUMBER	SYS
5613-M-3062	062
SHEET 1	REV 42

8 5613-M-3062_SH 1.DWG

DWG NO 5613-M-3047 SHT 1

RESIN FILL TANK T202

DEMINERALIZER A 3T211A ITEM: DMMB1

DEMINERALIZER B 3T211B NOTE 8 ITEM: DMMB2

DEMINERALIZER C 3T217 NOTE 9 ITEM: DMCB

DEMINERALIZER D 3T212A NOTE 8 ITEM: DMDB1

DEMINERALIZER E 3T212B ITEM: DMDB2

NON REGENERATIVE HEAT EXCHANGER 3E201

REACTOR COOLANT FILTER A 3F200A

REACTOR COOLANT FILTER B 3F200B

REACTOR COOLANT FILTER C 3F200C

FROM REGENERATIVE HEAT EXCHANGER 5613-M-3047 SH. 2 (D-8)

FROM PRIMARY WATER SYSTEM VALVE 10-565 5613-M-3020 SH. 2 (F-8)

FROM PRIMARY WATER SYSTEM VLV 3-220 5613-M-3020 SH. 2 (C-8)

FROM WDS-POLISHING DEMIN VLV 4751B 5610-M-3061 SH. 4 (H-4)

FROM PRIMARY WATER SYSTEM FLUSH VLV 3-246 5613-M-3020 SH. 2 (D-8)

FROM PRIMARY WATER SYSTEM FLUSH VLV 3-232B 5613-M-3020 SH. 2 (C-8)

FROM PRIMARY WATER SYSTEM FLUSH VLV 3-232A 5613-M-3020 SH. 2 (E-8)

TO PRESSURIZER RELIEF TANK 5613-M-3041 SH. 2 (E-1)

TO VOLUME CONTROL TANK VALVE 3-390 5613-M-3047 SH. 2 (B-4)

TO SAMPLE SYSTEM VALVE PASS-3-011 5613-M-3036 SH. 1 (F-1)

TO VALVE TCV-3-144 CONTROLS COMPONENT COOLING WATER SYSTEM 5613-M-3030 SH. 2 (B-4)

TO/FROM COMPONENT COOLING WATER SYSTEM 5613-M-3030 SH. 2

FROM RHR HX OUTLET HDR VLV 3-760 5613-M-3050 SH. 1 (B-6)

FROM 40-1010 5613-M-3013 SH. 9 (E-7)

FROM 40-1008 5613-M-3013 SH. 9 (F-8)

FROM 40-1149 5613-M-3013 SH. 9 (G-2)

FROM 40-1148 5613-M-3013 SH. 9 (G-2)

FROM 40-1915 5613-M-3013 SH. 7 (E-5)

FROM 3-40-1914 5613-M-3013 SH. 7 (F-5)

FROM 3-40-1919 5613-M-3013 SH. 7 (E-5)

TO VOLUME CONTROL TANK 5613-M-3047 SH. 2 (B-5)

TO SAMPLING SYSTEM VALVE 3-974B 5613-M-3036 SH. 1 (G-1)

FROM REFUELING WTR PURIF PUMP DISCH VLV 3-8028 5613-M-3033 SH. 1 (F-5)

TO WASTE HOLD-UP TANK IN AUXILIARY BUILDING 5610-M-3061 SH. 1 (A-1)

TO SAFETY INJECTION SYSTEM 5613-M-3062 SH. 1 (A-1)

TO WASTE DISPOSAL SYSTEM 5610-M-3061 SH. 9 (D-1)

TO SAMPLING SYSTEM VALVE 3-974A 5613-M-3036 SH. 1 (G-1)

TO VOLUME CONTROL TANK VIA LCV-3-115A 5613-M-3047 SH. 2 (B-1)

TO SPDS/SAS

FROM PRIMARY WATER SYSTEM VLV 3-10-559 5613-M-3020 SH. 2 (E-8)

NOTES:
1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2.
2. DELETED
3. VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK.
4. IBS = INSIDE BIOLOGICAL SHIELD
5. OBS = OUTSIDE BIOLOGICAL SHIELD
6. DH = DRAIN HEADER
7. HANDWHEEL IS LOCKED SO AS NOT TO INTERFERE WITH CONTROL ROOM OPERATION.
8. DESIGN CONDITIONS ARE: FLOW = 120 GPM TEMP = 127°F
9. DESIGN CONDITIONS ARE: FLOW = 60 GPM TEMP = 127°F
10. TYPICAL ARRANGEMENT. RESIN FILL TANK, VALVES 218/219, AND FLEX HOSES ARE INSTALLED AT RESIN FILL FLANGES ON A TEMPORARY BASIS TO FILL ANY UNIT 3 OR UNIT 4 DIMINERALIZER.

REFERENCE DRAWINGS

5613-M-3048 SERIES	CHEMICAL VOLUME CONTROL SYSTEM
5613-M-3062 SERIES	SAFETY INJECTION SYSTEM
5613-M-3094 SERIES	POST ACCIDENT SAMPLE SYSTEM
5613-M-3041 SERIES	REACTOR COOLANT SYSTEM
5613-M-3020	PRIMARY WATER MAKEUP SYSTEM
5610-M-3061 SERIES	WASTE DISPOSAL SYSTEM
5613-M-3050	RESIDUAL HEAT REMOVAL SYSTEM
5613-M-3030 SERIES	COMPONENT COOLING WATER
5610-M-3065 SERIES	NITROGEN AND HYDROGEN SYSTEM
5610-T-D-15 SH. 1	CONTROL SYSTEMS DIAGRAM - PRESSURIZER LEVEL CONTROL & PROTECTION, CHARGING PUMP CONTROL
5610-T-D-19 SH. 1	CONTROL SYSTEMS DIAGRAM - BORON CONCENTRATION CONTROL SYSTEM
5610-M-430-202	INTERCONNECTION DIAGRAM - BORIC ACID BLEND SYSTEMS

REFERENCE DRAWINGS CONTINUED

5610-T-U SH. 32A	LOGIC DIAGRAMS - CHARGING PUMPS 3A, 3B, 3C
5613-M-3036 SERIES	SAMPLING SYSTEMS
5610-M-3033	SPENT FUEL POOL COOLING SYSTEM
5610-M-3048	CHEMICAL VOLUME CONTROL SYSTEM

THIS DRAWING SUPERSEDES DRAWINGS:

5610-M-368 SH. 1	REV. 4
5610-M-368 SH. 2	REV. 3
5610-M-420-3 SH. 1	REV. 13
5610-M-420-3 SH. 2	REV. 22
5610-M-420-3 SH. 3	REV. 33
5610-M-420-214 SH. 1	REV. 2
5610-M-420-214 SH. 2	REV. 7
5610-M-420-214 SH. 3	REV. 11

POD

NOTE: THIS DWG IS MADE FROM:

FPL POD	5610-T-E-4505 SH. 1	REV. 84
FPL POD	5610-T-E-4505 SH. 2	REV. 35
FPL POD	5610-T-E-4505 SH. 5	REV. 7
FPL POD	5610-T-E-4515 SH. 2	REV. 22

REV	DATE	REVISION	BY	CH	APP	APP
16	3-6-00	ISSUED AS-BUILT PER CRN-M-9848 (PC/M 99-046), CRN-M-9991	JPC	RH	BSG	MM
—	—	(PC/M 99-061) AND CRN-M-9993 (PC/M 99-061):	—	—	—	—
15	11-9-99	ISSUED AS-BUILT PER CRN'S M-9790, M-9794 (PC/M 99-033).	RH	RV	CMZ	JTL
22	5/23/12	ISSUED AS-BUILT PER EC 274476.	RV	RH	-	MA
21	9/21/09	ISSUED AS-BUILT PER PC/M 06-103.	RV	RH	BB	SB
20	6/1/07	ISSUED AS-BUILT PER CRN M-11762 (PC/M 03-106)	RH	RV	PJV	RSV

REV	DATE	REVISION	BY	CH	APP	APP
19	3/8/05	ISSUED AS-BUILT PER CRN-M-11262 (PC/M 03-106).	RH	RRW	BSD	JTL
18	10/15/04	ISSUED AS-BUILT PER PC/M 03-132.	RH	SB	PRB	JTL
17	6-17-02	ISSUED AS-BUILT PER CRN-M-10465 (PC/M 00-016)	RH	RV	ACM	JTL
0	3-5-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	MAB	MD	RAS SVM	LRB
—	—	AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPM-91-045.	—	—	—	—

FPL

TURKEY POINT NUCLEAR UNIT 3

P & I D

CHEMICAL AND VOLUME CONTROL SYSTEM CHARGING AND LETDOWN

STONE & WEBSTER ENGINEERING CORP. FT. LAUDERDALE, FLORIDA

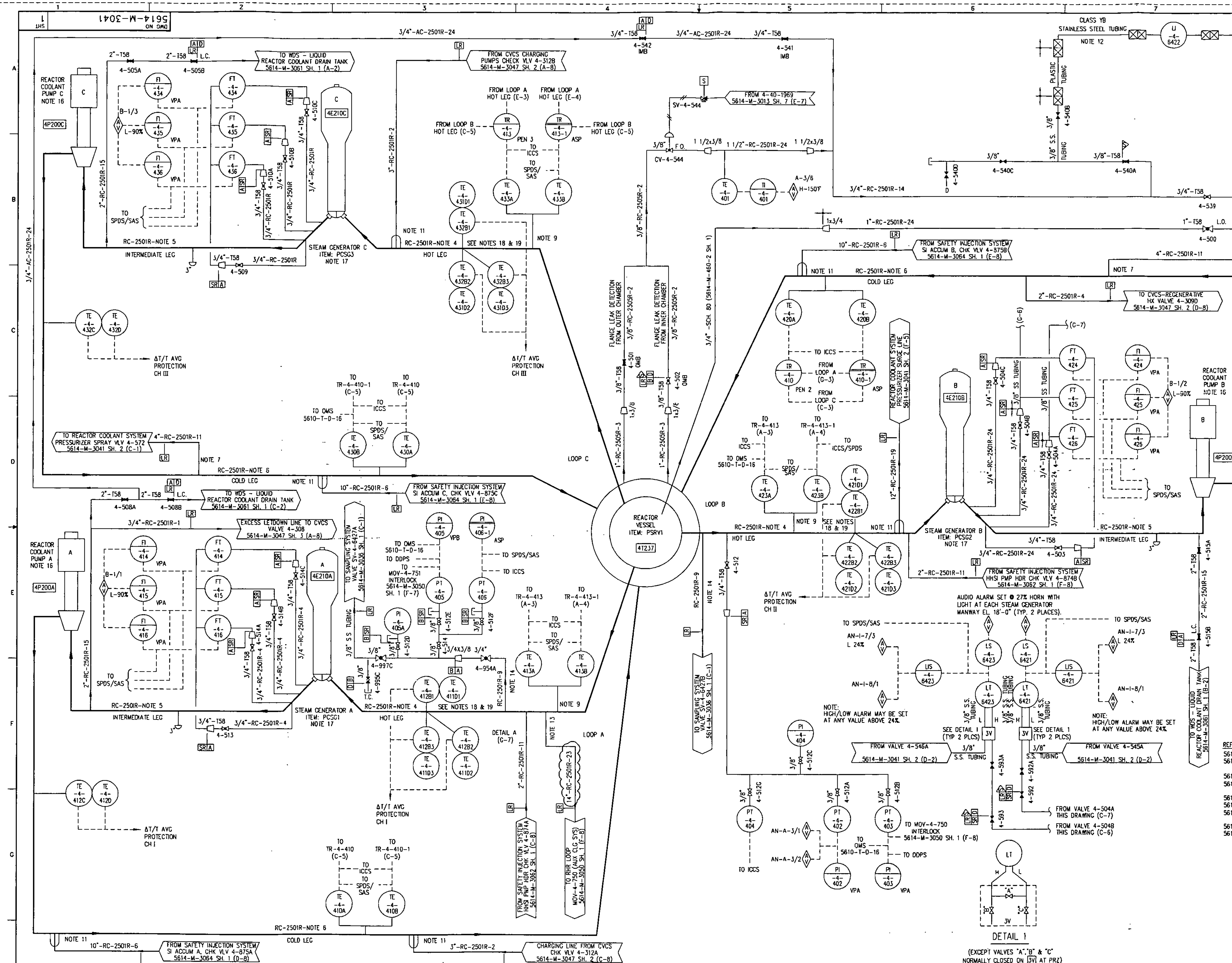
DRAWING NUMBER 5613-M-3047

SYS 047

REV 22

SHEET 1

8 5613-M-3047_SH 1.DWG



NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2.
2. DELETED.
3. REACTOR, STEAM GENERATORS AND PRESSURIZER DESIGNED IN ACCORDANCE WITH ASME SECTION III (1965) FOR CLASS A VESSELS. NEW STEAM GENERATOR COMPONENTS FABRICATED TO ASME SECTION III-1974 (SUMMER 1976). REPLACEMENT REACTOR VESSEL CLOSURE HEAD DESIGNED, FABRICATED, AND TESTED TO ASME SECTION III, 1989 EDITION (NO ADDENDA), CLASS 1 VESSELS. PIPING IN ACCORDANCE WITH ASA B31.1 (1955) WITH CODE CASES N-7 AND N-10 AND SPECIAL NDE REQUIREMENTS.
4. HOT LEG PIPING, 29" INSIDE DIAMETER.
5. INTERMEDIATE LEG PIPING, 31" INSIDE DIAMETER.
6. COLD LEG PIPING, 27.5" INSIDE DIAMETER.
7. SPRAY LINE SCOOP, REFERENCE DRAWING 5610-M-410-54.
8. RESISTANCE TEMPERATURE DETECTOR BYPASS HOT LEG LINE SCOOPS. REFERENCE DRAWING 5610-M-410-123.
9. RESISTANCE TEMPERATURE DETECTOR INSTALLED IN WELL. REFERENCE DRAWING 5610-M-410-52.
10. DELETED
11. – SYMBOL INDICATES THERMAL SLEEVE FITTING. REFERENCE DRAWINGS 5610-M-410-49, -50, -55, -56 AND PRESSURIZER MANUAL.
12. STAINLESS STEEL/PLASTIC TUBING IS IN USE FOR REDUCED RCS INVENTORY DURING MID-LOOP CONDITIONS MODES (5 & 6) LEVEL INDICATOR SHALL BE ISOLATED AND TUBING DISCONNECTED DURING MODES 1 THRU 4
13. RESIDUAL HEAT REMOVAL LOOP (ACS) CONNECTION LOCATED ON BOTTOM OF PIPE AT 45° ANGLE FROM VERTICAL.
14. PIPING REFERENCE TO THIS NOTE IS 3/4" NOMINAL OUTSIDE DIAMETER, 0.234" INSIDE DIAMETER.
15. IMB = INSIDE MISSILE BARRIER
    OMB = OUTSIDE MISSILE BARRIER
16. FOR REACTOR COOLANT PUMP CONNECTIONS TO SYSTEMS NOT SHOWN ON THIS DRAWING SEE REFERENCE DRAWINGS 5614-M-3041 SH. 3 AND 5614-M-3047 SH. 3.
17. FOR STEAM GENERATOR CONNECTIONS TO SYSTEMS NOT SHOWN ON THIS DRAWING SEE 5614-M-3072 SH. 1 MAIN STEAM SYSTEM AND 5614-M-3074 SH. 3 FEEDWATER SYSTEM.
18. THE THERMOWELLS ARE NUMBERED B1, B2, & B3 (WITH B1 AT THE TOP) CLOCKWISE LOOKING TOWARDS THE REACTOR VESSEL.
19. THE RTD CONTAINS DUAL ELEMENTS, THEREFORE HAS AN INSTALLED SPARE.

REFERENCE DRAWINGS

5614-M-3041 SH. 2	REACTOR COOLANT SYSTEM
5614-M-3041 SH. 3	REACTOR COOLANT SYSTEM – REACTOR COOLANT PUMPS
5614-M-3036 SH. 1	SAMPLE SYSTEM – NSSS
5614-M-3047 SH. 3	CVCS – SEAL WATER INJECTION TO RCP
5614-M-3050 SH. 1	RESIDUAL HEAT REMOVAL SYSTEM
5614-M-3062 SH. 1	SAFETY INJECTION SYSTEM
5614-M-3064 SH. 1	SAFETY INJECTION ACCUMULATOR SYSTEM
5614-M-3061 SH. 1	WASTE DISPOSAL SYSTEM – LIQUIDS
5610-M-3065 SH. 1	NITROGEN & HYDROGEN SYSTEMS

THIS DRAWING SUPERSEDES DRAWINGS.		
5610-M-410-91	SH. 1	REV. 13
5610-M-410-91	SH. 2	REV. 30
5610-M-410-202	SH. 1	REV. 4
5610-M-410-202	SH. 2	REV. 6
5610-M-353		REV. 3
5610-M-355		REV. 2
5610-M-366		REV. 4
5610-M-367		REV. 2
5610-M-1288		REV. 4
5610-M-1297		REV. 5

POD

NOTE: THIS DWG IS MADE FROM:
FPL POD 5610-T-E-4501 SH. 1 REV. 90
FPL POD 5610-T-E-4061 SH. 1 REV. 65

REV	DATE	REVISION	BY	CH	APP	APP
22	6-12-09	ISSUED AS-BUILT PER CRN-M-12566 (PC/M 09-005).	RH	RV	BSG	PRB
21	10-23-07	ISSUED AS-BUILT PER CRN M-12029 (PC/M 07-021).	RH	RV	PJV	MCT
20	7-6-06	ISSUED AS-BUILT PER CRN-E-17247 (PC/M 03-106).	RV	BB	–	TBH
19	6-28-05	ISSUED AS-BUILT PER CRN-M-11337 (PC/M 04-065).	RH	RV	RSV	ASD
18	6-7-05	ISSUED AS-BUILT PER PC/M 03-058.	RV	RH	JK	ASD
17	4-27-05	ISSUED AS-BUILT PER PC/M 04-065 & INCORP. CRN-M-11240.	RH	RV	BSG	JTL

REV	DATE	REVISION	BY	CH	APP	APP
16	05-19-03	ISSUED AS-BUILT PER CRN-M-10612 (PC/M 02-065).	RH	RV	AAP	CMZ
15	02-05-02	ISSUED AS-BUILT PER PC/M 99-051.	RV	RH	BP	TS
23	5-4-10	ISSUED AS-BUILT PER CRN C-12778 (PC/M 10-007).	RH	RV	BSG	PRB
0	2-15-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	MB	HLG	AM/MS	LRB
—	—	AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPM-91-043.	—	—	—	—

FPL

TURKEY POINT NUCLEAR UNIT 4

P & I D

REACTOR COOLANT SYSTEM

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

DRAWING NUMBER 5614-M-3041 | SYS 041 | SHEET 1 | REV 23

5614-M-3041_SH 1 DWG

DWG NO 5614-M-3064 SHT 1

NOTE: THIS DWG IS MADE FROM:

FPL PDD	5610-T-E-4501 SH. 1	REV. 99
FPL PDD	5610-T-E-4510 SH. 2	REV. 72
FPL PDD	5610-T-E-4515 SH. 2	REV. 22

THIS DRAWING SUPERSEDES DRAWINGS:

5610-M-356	REV. 3
5610-M-370	REV. 3
5610-M-470-45 SH. 4	REV. 4
5610-M-470-45 SH. 3	REV. 10
5610-M-470-5 SH. 3	REV. 31
5610-M-470-5 SH. 4	REV. 28
5610-M-369	REV. 5
5610-M-450-53	REV. 22
5610-M-1300	REV. 4

NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2.
2. ALL SAFETY-RELATED PIPING AND ASSOCIATED COMPONENTS DEPICTED ON THIS DRAWING ARE WITHIN THE SCOPE OF LICENSE RENEWAL UNLESS NOTED OTHERWISE.
3. ALL COMPONENTS ON THIS DRAWING ARE WITHIN THE SEISMIC/Q-BOUNDARY.
4. REQUIRED FOR CONTAINMENT LEAK RATE TEST.
5. BREAKERS ON VALVES MOV-4-865A,B, & C ARE LOCKED OPEN, EXCEPT WHEN GOING TO COLD SHUTDOWN.
6. IMB = INSIDE MISSILE BARRIER.
7. M_2 SUPPLY VENT VALVE HCV-4-936 OPENS AT 900 PSIG UNDER SEAT.
8. VALVE 4-883R IS LOCKED TO ASSURE ADEQUATE MAKEUP TO ACCUMULATORS AND TO RESTRICT FLOW DURING HIGH HEAD SAFETY INJECTION FUNCTIONS.
9. SCHEDULE 140 PIPE.
10. INTERDISC RELIEF VALVE NOT REQUIRED PER PCM 89-228 ATTACH. 5.
11. A 3/16" HOLE IS BORED IN DISC TO PROVIDE A RELIEF PATH FROM BETWEEN DISCS IN DIRECTION OF ARROW.
12. THIS VALVE IS CONSIDERED TO BE LOCKED CLOSED BY VIRTUE OF ITS DESIGN WHICH REQUIRES A SPECIAL TOOL TO OPERATE THE REACH ROD. VALVE MUST BE CLOSED IN ALL MODES OF OPERATION.

REFERENCE DRAWINGS:

5614-M-3036 SH. 1	SAMPLE SYSTEM
5614-M-3041 SH. 1	REACTOR COOLANT SYSTEM LOOPS
5614-M-3041 SH. 2	REACTOR COOLANT SYSTEM PRESSURIZER
5614-M-3050 SH. 1	RESIDUAL HEAT REMOVAL SYSTEM
5614-M-3062 SH. 1	SAFETY INJECTION SYSTEM
5614-M-3065 SH. 1	NITROGEN & HYDROGEN SYSTEM
5614-M-3061 SH. 1	WASTE DISPOSAL SYSTEM

POD

REV	DATE	REVISION	BY	CH	APP	APP
29	10-24-03	ISSUED AS-BUILT PER PC/M 03-043 & INCORP. CRN'S M-10830 & M-10816.	RH	JK	—	RSV
28	10-30-00	ISSUED AS-BUILT PER CRN-M-10125 (PC/M 00-018).	RH	RV	AAP	ASD
27	10-17-00	ISSUED AS-BUILT PER PC/M 00-023.	RH	BP	BSG	JMM
26	5-10-00	ISSUED AS-BUILT PER CRN-M-10065 (PC/M 99-061).	RH	RV	JK	ASD
34	11-13-09	ISSUED AS-BUILT PER CRN'S M-12877, M-12878, M-12879, 12875 & M-12880 (PC/M 09-004).	RV	RH	BSG	EB
33	5-8-08	ISSUED AS-BUILT PER CRN-M-12353 (PC/M 08-014).	RH	RV	BSG	JSL
32	5-2-06	ISSUED AS-BUILT PER PC/M 06-031.	RH	BB	GCV	PRB
31	7-11-05	ISSUED AS-BUILT PER CRN'S M-11405 & M-11388 (PC/M 03-106).	RH	RRW	AAP	PRB
30	5-21-05	ISSUED AS-BUILT PER PC/M 05-068.	RV	RH	AAP	JMM
0	4-2-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPM-91-044.	GFH	MD	RAS	LRB

FPL

TURKEY POINT NUCLEAR UNIT 4

P & I D

SAFETY INJECTION ACCUMULATOR SYSTEM INSIDE CONTAINMENT

STONE & WEBSTER ENGINEERING CORP. FT. LAUDERDALE, FLORIDA

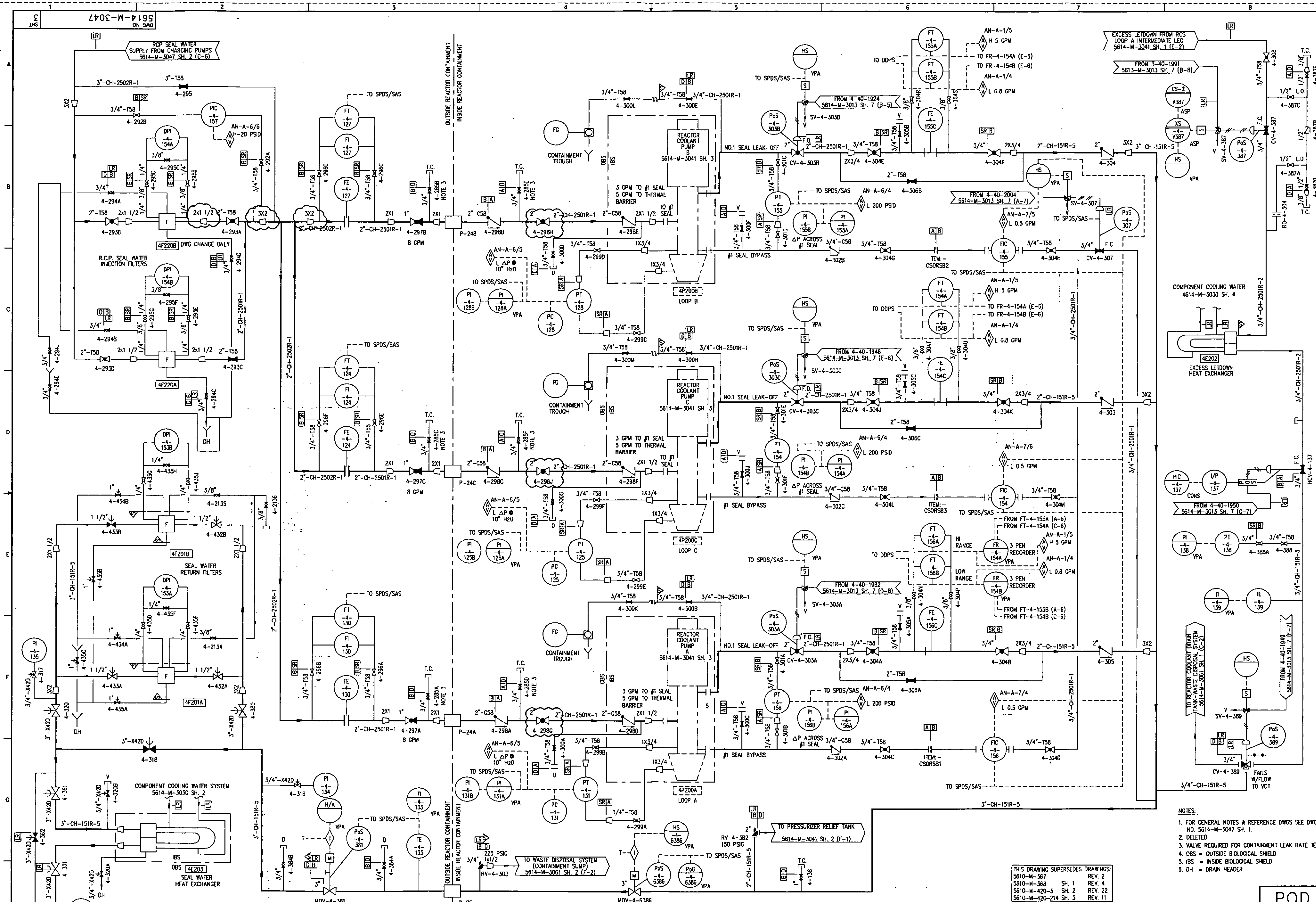
DRAWING NUMBER 5614-M-3064

SYS 064

REV 34

SHEET 1

5614-M-3064_SH 1.DWG



NOTES:

1. FOR GENERAL NOTES & REFERENCE DWGS SEE DWG NO. 5614-M-3047 SH. 1.
2. DELETED.
3. VALVE REQUIRED FOR CONTAINMENT LEAK RATE TEST.
4. OBS = OUTSIDE BIOLOGICAL SHIELD
5. IBS = INSIDE BIOLOGICAL SHIELD
6. DH = DRAIN HEADER

THIS DRAWING SUPERSEDES DRAWINGS:		
5610-M-367		REV. 2
5610-M-368	SH. 1	REV. 4
5610-M-420-3	SH. 2	REV. 22
5610-M-420-214	SH. 3	REV. 11

POD

REV	DATE	REVISION	BY	CH	APP	APP
17	10-2-97	ISSUED AS-BUILT PER PC/M 97-012 AND INCORPORATED CRN-M-9166.	RH	RV	JZ	JJC
16	9-21-97	ISSUED AS-BUILT PER PC/M 97-012 (PARTIAL) AND INCORP. CRN-M-9111.	RH	RV	CMZ	RSV
25	12-1-06	ISSUED AS-BUILT PER CRN-M-11913 (PC/M 06-073).	RH	BB	BSG	JMM
24	7-6-05	ISSUED AS-BUILT PER CRN-M-11428 (PC/M 03-106).	RH	RV	CMZ	PRB
23	05-18-05	ISSUED AS-BUILT PER PC/M 05-004 AND 05-011.	JPG	SB	PRB	ASD
22	11-16-04	ISSUED AS-BUILT PER CRN-M-11185 (PC/M 03-106).	RH	RRW	JK	JMM

REV	DATE	REVISION	BY	CH	APP	APP
21	1-31-01	ISSUED AS-BUILT PER CRN-M-10212 (PC/M 00-016).	RH	RV	RSV	ASD
20	8-15-00	ISSUED AS-BUILT PER CRN M-10088 (PC/M 99-061).	RH	RV	AAP	JM
19	04-10-00	ISSUED AS-BUILT PER CRN-M-9993 (PC/M 99-061).	JPG	KGM	——	JRH
18	5-26-98	ISSUED AS-BUILT PER CRN-I-3716(PC/M 98-013).	RV	RH	BP	TS
0	3-5-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	SM	MD	RAS SYM	LRB
——	——	AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPM-91-045.	——	——	——	——

FPL

TURKEY POINT NUCLEAR UNIT 4

P & I D

CHEMICAL AND VOLUME CONTROL SYSTEM SEAL WATER INJECTION TO RCP

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

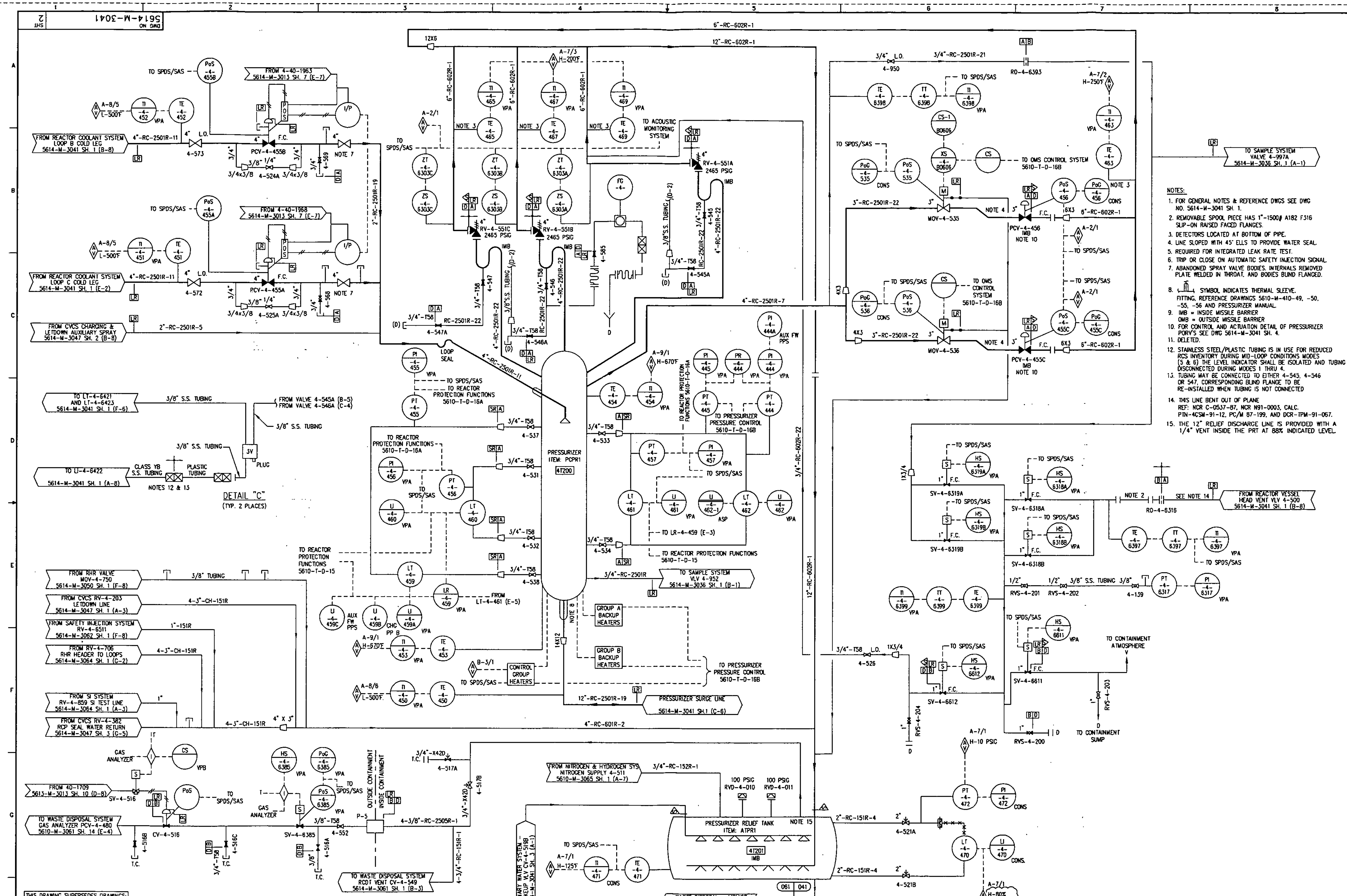
DRAWING NUMBER 5614-M-3047

SHEET 3

SYS 047

REV 25

5614-M-3041 SHT 2



NOTES:

1. FOR GENERAL NOTES & REFERENCE DWGS SEE DWG NO. 5614-M-3041 SH. 1.
2. REMOVABLE SPOOL PIECE HAS 1"-1500# A182 F316 SLIP-ON RAISED FACED FLANGES.
3. DETECTORS LOCATED AT BOTTOM OF PIPE.
4. LINE SLOPED WITH 45° ELLS TO PROVIDE WATER SEAL.
5. REQUIRED FOR INTEGRATED LEAK RATE TEST.
6. TRIP OR CLOSE ON AUTOMATIC SAFETY INJECTION SIGNAL.
7. ABANDONED SPRAY VALVE BODIES. INTERNALS REMOVED PLATE WELDED IN THROAT, AND BODIES BLIND FLANGED.
8. SYMBOL INDICATES THERMAL SLEEVE. FITTING, REFERENCE DRAWINGS 5610-M-410-49, -50, -55, -56 AND PRESSURIZER MANUAL.
9. IMB = INSIDE MISSILE BARRIER
   OMB = OUTSIDE MISSILE BARRIER
10. FOR CONTROL AND ACTUATION DETAIL OF PRESSURIZER PORV'S SEE DWG 5614-M-3041 SH. 4.
11. DELETED.
12. STAINLESS STEEL/PLASTIC TUBING IS IN USE FOR REDUCED RCS INVENTORY DURING MID-LOOP CONDITIONS MODES (5 & 6) THE LEVEL INDICATOR SHALL BE ISOLATED AND TUBING DISCONNECTED DURING MODES 1 THRU 4.
13. TUBING MAY BE CONNECTED TO EITHER 4-545, 4-546 OR 547, CORRESPONDING BLIND FLANGE TO BE RE-INSTALLED WHEN TUBING IS NOT CONNECTED
14. THIS LINE BENT OUT OF PLANE
    REF: NCR C-0537-87, NCR N91-0003, CALC. PTN-4CSM-91-12, PC/M 87-199, AND DCR-TPM-91-067.
15. THE 12" RELIEF DISCHARGE LINE IS PROVIDED WITH A 1/4" VENT INSIDE THE PRT AT 88% INDICATED LEVEL.

THIS DRAWING SUPERSEDES DRAWINGS:	
5610-M-353	REV. 2
5610-M-355	REV. 2
5610-M-366	REV. 4
5610-M-367	REV. 2
5610-M-410-91 SH. 1	REV 13
5610-M-410-91 SH. 2	REV. 30
5610-M-410-202 SH. 1	REV. 4
5610-M-410-202 SH. 2	REV. 6
5610-M-1288	REV. 4
5610-M-1310	REV. 2

NOTE: THIS DWG IS MADE FROM: FPL POD 5610-I-E-4501 SH. 1 REV 90

REV	DATE	REVISION	BY	CH	APP	APP
32	4-27-05	ISSUED AS-BUILT PER PC/M 04-065 & INCORP. CRN-M-11240.	RH	RV	BSG	JTL
31	4-21-05	ISSUED AS-BUILT PER PC/M 04-056.	RH	JPG	AAP	CMZ
30	2-12-04	ISSUED AS-BUILT PER CRN-M-10859 (PC/M 03-050).	RH	RV	ASD	JTL
41	4-24-13	ISSUED AS-BUILT PER EC 246978 (ITOP 13-04-164).	RH	RV	-	JM
40	3-4-13	ISSUED AS-BUILT PER EC 246924 (ITOP 13-03-010).	RV	RH	-	JD
39	2-10-13	ISSUED AS-BUILT PER EC 246924 (ITOP'S 13-02-043 & 047). (PARTIAL)	RV	BB	PSB	CW
38	2/6/13	ISSUED AS-BUILT PER EC 242470 (ITOP 13-02-027).	RH	AFG	-	DL
37	9/28/09	ISSUED AS-BUILT PER CRN-I-5092 (PC/M 09-070).	RV	RH	-	LG
36	9-22-09	ISSUED AS-BUILT PER CRN M-12837 (PC/M 09-070).	RH	RV	-	LG
35	9/25/06	ISSUED AS-BUILT PER CRN-M-11759 (PC/M 03-106).	RH	RV	BSC	JTL
34	7-11-05	ISSUED AS-BUILT PER CRN-M-11395 (PC/M 03-106).	RH	RRW	AAP	PRB
33	6-28-05	ISSUED AS-BUILT PER CRN M-11337 (PC/M 04-065).	RH	RV	RSV	ASD

FPL

TURKEY POINT NUCLEAR UNIT 4

P & ID

REACTOR COOLANT SYSTEM

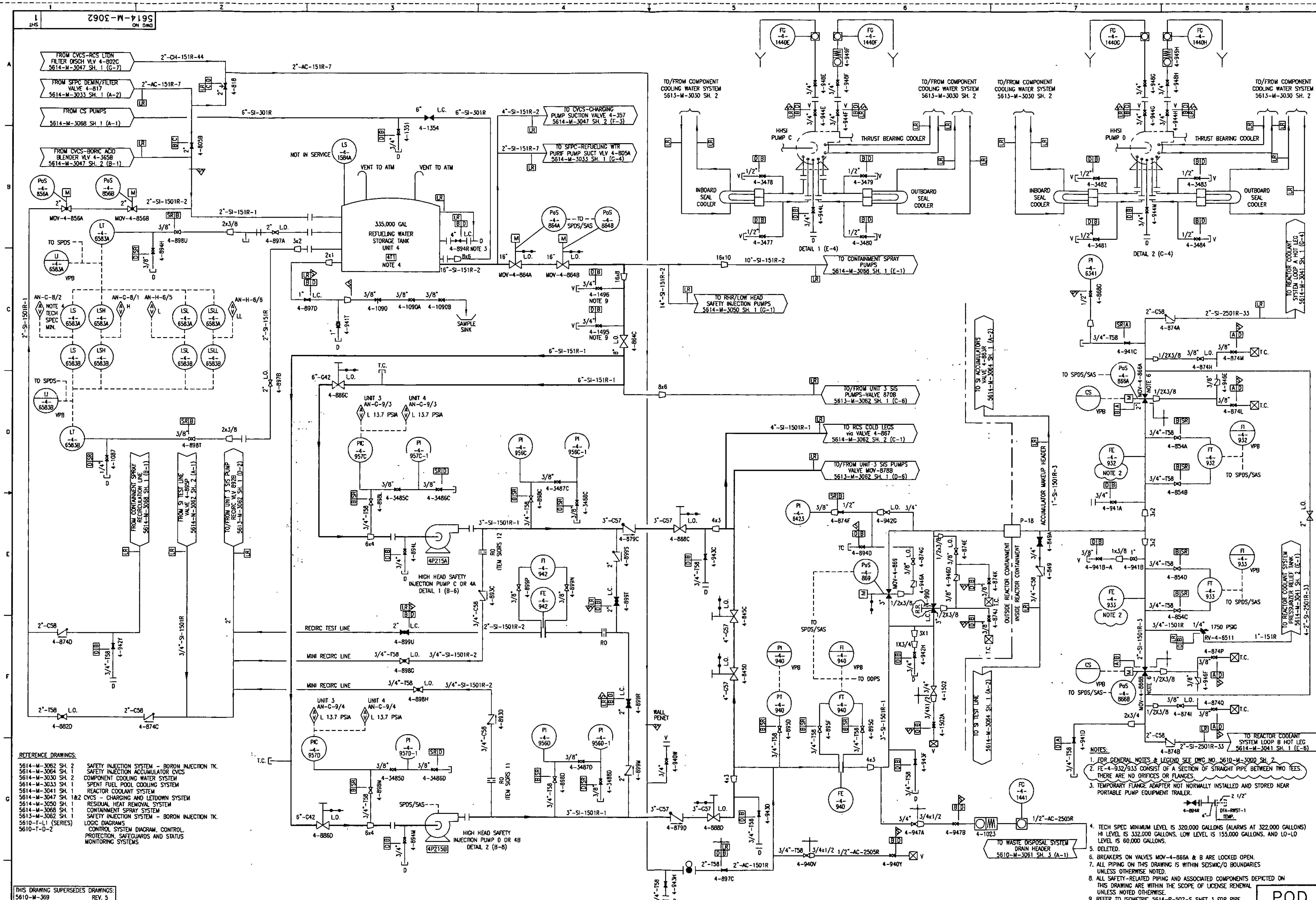
SAFETY RELATED

POD

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

DRAWING NUMBER 5614-M-3041 | SYS 041 | SHEET 2 | REV 41

8 5614-M-3041_SH 2.DWG



5614-M-3062
FROM CVCS-RCS LTDN FILTER DISCH VLV 4-802C 5614-M-3047 SH. 1 (G-7)
FROM SFPC DEMIN/FILTER VALVE 4-817 5614-M-3033 SH. 1 (A-2)
FROM CS PUMPS 5614-M-3068 SH 1 (A-1)
FROM CVCS-BORIC ACID BLENDER VLV 4-365B 5614-M-3047 SH. 2 (B-1)
335,000 GAL REFUELING WATER STORAGE TANK UNIT 4
NOT IN SERVICE
VENT TO ATM
TO CVCS-CHARGING PUMP SUCTION VALVE 4-357 5614-M-3047 SH. 2 (F-3)
TO SFPC-REFUELING WTR PURIF PUMP SUCT VLV 4-805A 5614-M-3033 SH. 1 (G-4)
TO CONTAINMENT SPRAY PUMPS 5614-M-3068 SH. 1 (E-1)
TO RHR/LOW HEAD SAFETY INJECTION PUMPS 5614-M-3050 SH. 1 (G-1)
TO/FROM UNIT 3 SIS PUMPS-VALVE 870B 5613-M-3062 SH. 1 (C-6)
TO RCS COLD LEGS via VALVE 4-867 5614-M-3062 SH. 2 (C-1)
TO/FROM UNIT 3 SIS PUMPS VALVE MOV-878B 5613-M-3062 SH. 1 (D-6)
TO/FROM COMPONENT COOLING WATER SYSTEM 5613-M-3030 SH. 2
HHSI PUMP C
HHSI PUMP D
THRUST BEARING COOLER
INBOARD SEAL COOLER
OUTBOARD SEAL COOLER
DETAIL 1 (E-4)
DETAIL 2 (C-4)
HIGH HEAD SAFETY INJECTION PUMP C OR 4A DETAIL 1 (B-6)
HIGH HEAD SAFETY INJECTION PUMP D OR 4B DETAIL 2 (B-6)
RECIRC TEST LINE
MINI RECIRC LINE
FROM CONTAINMENT SPRAY RECIRCULATION LINE 5614-M-3068 SH. 1 (B-1)
FROM SI TEST LINE VALVE 4-895P 5614-M-3064 SH. 2 (A-1)
TO/FROM UNIT 3 SIS PUMP RECIRC VALVE 4-892B 5613-M-3062 SH. 1 (D-2)
TO SI ACCUMULATORS VALVE 4-865R 5614-M-3064 SH. 1 (A-2)
TO SI TEST LINE 5614-M-3064 SH. 1 (A-2)
OUTSIDE REACTOR CONTAINMENT
INSIDE REACTOR CONTAINMENT
ACCUMULATOR MAKEUP HEADER
TO REACTOR COOLANT SYSTEM LOOP A HOT LEG 5614-M-3041 SH. 1 (G-4)
TO REACTOR COOLANT SYSTEM PRESSURIZER RELIEF TANK 5614-M-3041 SH. 2 (E-1)
TO REACTOR COOLANT SYSTEM LOOP B HOT LEG 5614-M-3041 SH. 1 (E-6)
TO WASTE DISPOSAL SYSTEM DRAIN HEADER 5610-M-3061 SH. 3 (A-1)
TO SPDS/SAS
TO DDPS
WALL PENET

REFERENCE DRAWINGS:

5614-M-3062 SH. 2 SAFETY INJECTION SYSTEM - BORON INJECTION TK.
5614-M-3064 SH. 1 SAFETY INJECTION ACCUMULATOR CVCS
5614-M-3030 SH. 2 COMPONENT COOLING WATER SYSTEM
5614-M-3033 SH. 1 SPENT FUEL POOL COOLING SYSTEM
5614-M-3041 SH. 1 REACTOR COOLANT SYSTEM
5614-M-3047 SH. 1&2 CVCS - CHARGING AND LETDOWN SYSTEM
5614-M-3050 SH. 1 RESIDUAL HEAT REMOVAL SYSTEM
5614-M-3068 SH. 1 CONTAINMENT SPRAY SYSTEM
5613-M-3062 SH. 1 SAFETY INJECTION SYSTEM - BORON INJECTION TK.
5610-T-L1 (SERIES) LOGIC DIAGRAMS
5610-T-D-2 CONTROL SYSTEM DIAGRAM, CONTROL, PROTECTION, SAFEGUARDS AND STATUS MONITORING SYSTEMS

NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2
2. FE-4-932/933 CONSIST OF A SECTION OF STRAIGHT PIPE BETWEEN TWO TEES. THERE ARE NO ORIFICES OR FLANGES.
3. TEMPORARY FLANGE ADAPTER NOT NORMALLY INSTALLED AND STORED NEAR PORTABLE PUMP EQUIPMENT TRAILER.
4. TECH SPEC MINIMUM LEVEL IS 320,000 GALLONS (ALARMS AT 322,000 GALLONS) HI LEVEL IS 332,000 GALLONS, LOW LEVEL IS 155,000 GALLONS, AND LO-LO LEVEL IS 60,000 GALLONS.
5. DELETED.
6. BREAKERS ON VALVES MOV-4-866A & B ARE LOCKED OPEN.
7. ALL PIPING ON THIS DRAWING IS WITHIN SEISMIC/Q BOUNDARIES UNLESS OTHERWISE NOTED.
8. ALL SAFETY-RELATED PIPING AND ASSOCIATED COMPONENTS DEPICTED ON THIS DRAWING ARE WITHIN THE SCOPE OF LICENSE RENEWAL UNLESS NOTED OTHERWISE.
9. REFER TO ISOMETRIC 5614-P-502-S SHET 3 FOR PIPE CLASS 151 DEVIATION.

POD

THIS DRAWING SUPERSEDES DRAWINGS:		
5610-M-369		REV. 5
5610-M-370		REV. 3
5610-M-380		REV. 5
5610-M-470-5	SH. 1	REV. 21
5610-M-470-5	SH. 2	REV. 26
5610-M-470-5	SH. 4	REV. 26
5610-M-470-45	SH. 1	REV. 5
5610-M-470-45	SH. 2	REV. 6
5610-M-470-45	SH. 4	REV. 4
5610-M-1300		REV. 4
5610-M-1387		REV. 2

NOTE: THIS DWG IS MADE FROM:

FPL POD	5610-T-E-4501	SH. 1	REV. 80
FPL POD	5610-T-E-4505	SH. 3	REV. 43
FPL POD	5610-T-E-4506	SH. 4	REV. 7
FPL POD	5610-T-E-4510	SH. 1	REV. 101

REV	DATE	REVISION	BY	CH	APP	APP	REV	DATE	REVISION	BY	CH	APP	APP
35	02-02-13	ISSUED AS-BUILT PER EC 275133 (PARTIAL) (ITOP 13-01-161).	AFG	RV	-	PRB	29	6-30-09	ISSUED AS-BUILT PER PC/M 07-025.	RV	BB	JXP	PRB
34	01-31-13	ISSUED AS-BUILT PER EC 249722 (PARTIAL) (ITOP 13-01-155).	RV	RH	-	PSB	28	12-16-08	ISSUED AS-BUILT PER CRN M-12529 (PC/M 08-071).	RH	RV	BSG	MCT
33	12-31-12	ISSUED AS-BUILT PER EC 249722 (PARTIAL) (ITOP 12-12-088).	RH	AFG	-	KM	27	4-21-05	ISSUED AS-BUILT PER PC/M 03-111	RH	JPG	AAP	CMZ
32	11-21-09	ISSUED AS-BUILT PER PC/M 08-043.	RH	BB	JL	EB	26	12/02/03	ISSUED AS-BUILT PER CRN-M-10822 (PC/M 03-050).	RH	RV	PRB	RSV
31	11-13-09	ISSUED AS-BUILT PER CRN-M-12881 (PC/M 09-004).	RV	PJV	BSG	EB	37	2-21-13	ISSUED AS-BUILT PER EC 249722 (ITOP 13-02-114).	RH	DS	-	MJF
30	11-3-09	ISSUED AS-BUILT PER PC/M 08-043 (PARTIAL) AND INCORP. CRN C-12604.	RH	BB	LOG	PRB	36	2-6-13	ISSUED AS-BUILT PER EC 242470 (ITOP 13-02-027).	RH	AFG	-	DL

FPL

TURKEY POINT NUCLEAR UNIT 4

P & I D

SAFETY INJECTION SYSTEM

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

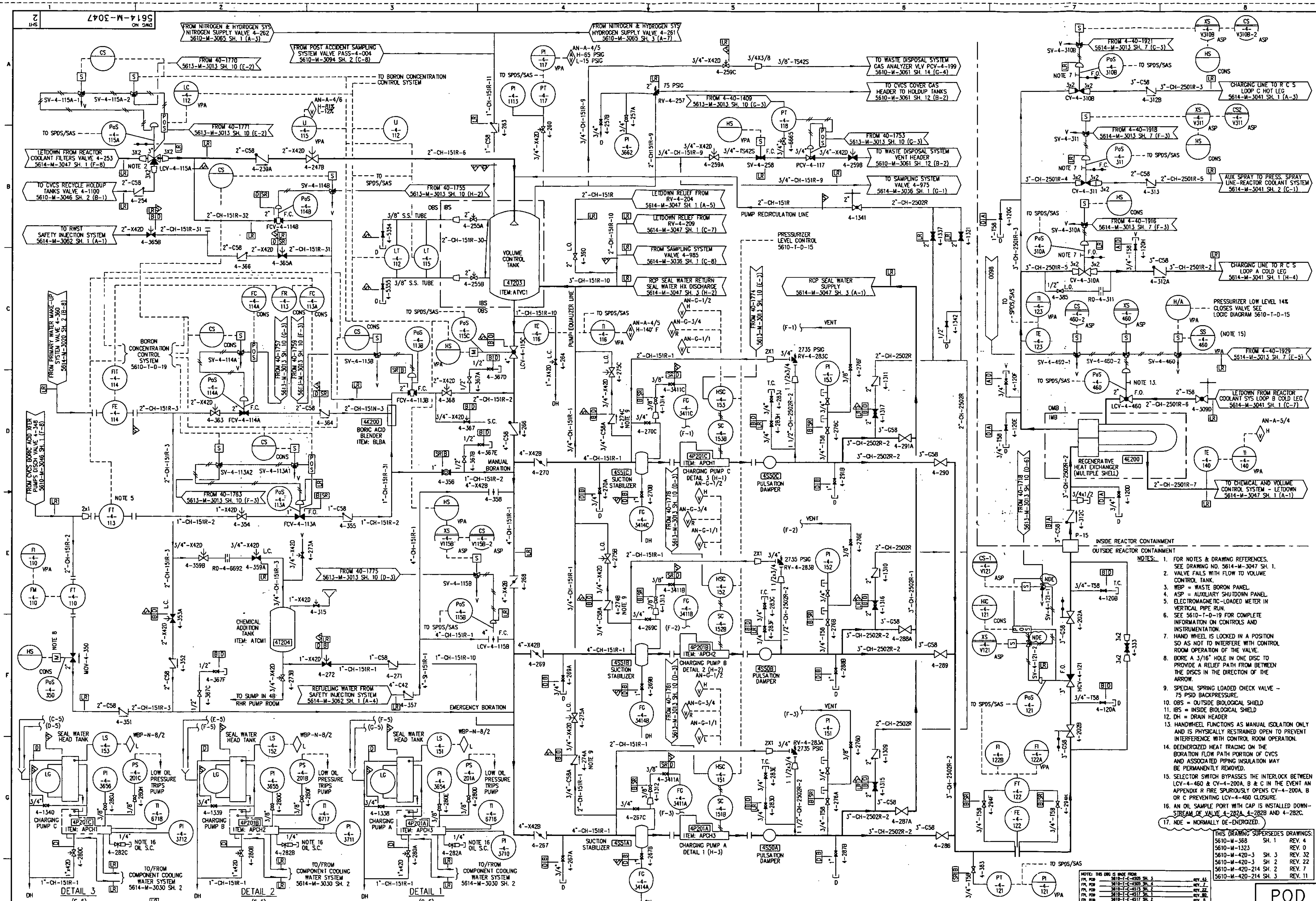
DRAWING NUMBER 5614-M-3062

SYS 062

SHEET 1

REV 37

5614-M-3062_SH 1.DWG



INSIDE REACTOR CONTAINMENT

OUTSIDE REACTOR CONTAINMENT

NOTES:

1. FOR NOTES & DRAWING REFERENCES, SEE DRAWING NO. 5614-M-3047 SH. 1.
2. VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK.
3. WBP = WASTE BORON PANEL.
4. ASP = AUXILIARY SHUTDOWN PANEL.
5. ELECTROMAGNETIC-LOADED METER IN VERTICAL PIPE RUN.
6. SEE 5610-T-D-19 FOR COMPLETE INFORMATION ON CONTROLS AND INSTRUMENTATION.
7. HAND WHEEL IS LOCKED IN A POSITION SO AS NOT TO INTERFERE WITH CONTROL ROOM OPERATION OF THE VALVE.
8. BORE A 3/16" HOLE IN ONE DISC TO PROVIDE A RELIEF PATH FROM BETWEEN THE DISCS IN THE DIRECTION OF THE ARROW.
9. SPECIAL SPRING LOADED CHECK VALVE - 75 PSID BACKPRESSURE.
10. OBS = OUTSIDE BIOLOGICAL SHIELD
11. IBS = INSIDE BIOLOGICAL SHIELD
12. DH = DRAIN HEADER
13. HANDWHEEL FUNCTIONS AS MANUAL ISOLATION ONLY AND IS PHYSICALLY RESTRAINED OPEN TO PREVENT INTERFERENCE WITH CONTROL ROOM OPERATION.
14. DEENERGIZED HEAT TRACING ON THE BORATION FLOW PATH PORTION OF CVCS AND ASSOCIATED PIPING INSULATION MAY BE PERMANENTLY REMOVED.
15. SELECTOR SWITCH BYPASSES THE INTERLOCK BETWEEN LCV-4-460 & CV-4-200A, B & C IN THE EVENT AN APPENDIX R FIRE SPURIOUSLY OPENS CV-4-200A, B OR C PREVENTING LCV-4-460 CLOSURE.
16. AN OIL SAMPLE PORT WITH CAP IS INSTALLED DOWNSTREAM OF VALVE 4-282A, 4-282B AND 4-282C.
17. NDE = NORMALLY DE-ENERGIZED.

THIS DRAWING SUPERSEDES DRAWINGS:		
5610-M-368	SH. 1	REV. 4
5610-M-1323		REV. 0
5610-M-420-3	SH. 3	REV. 32
5610-M-420-3	SH 2	REV. 22
5610-M-420-214	SH. 2	REV. 7
5610-M-420-214	SH. 3	REV. 11

NOTE: THIS DWG IS MADE FROM:

FPL POD	5610-T-E-4505 SH. 3	REV. 45
FPL POD	5610-T-E-4505 SH. 4	REV. 7
FPL POD	5610-T-E-4515 SH. 2	REV. 22
FPL POD	5610-T-E-4517 SH. 1	REV. 80
FPL POD	5610-T-E-4517 SH. 2	REV. 8

POD

REV	DATE	REVISION	BY	CH	APP	APP	REV	DATE	REVISION	BY	CH	APP	APP
61	4-3-11	ISSUED AS-BUILT PER EC 249137. (PARTIAL)	RV	SB	BSG	JEA	55	07-31-07	ISSUED AS-BUILT PER CRN-M-11939 (PC/M 02-053 AND CRN-I-4271 (PC/M 04-066).	RV	JPG	BSG	PRB
60	4-2-11	ISSUED AS-BUILT PER EC 249137. (PARTIAL)	RV	CW	ABR	PRB	64	10-6-12	ISSUED AS-BUILT PER CRN-001 (EC 242341). (ITOP # 12-09-062)	RH	RV	-	BKT
59	6-18-10	ISSUED AS-BUILT PER PC/M 08-010.	RH	BB	-	PRB	63	5-13-11	ISSUED AS-BUILT PER EC-DCR 272278.	RH	BB	-	CAF
58	4/1/10	ISSUED AS-BUILT PER CRN E-18146 (PC/M 10-007).	RH	RV	-	LG	62	4-14-11	ISSUED AS-BUILT PER EC 249137.	RH	BB	JG	PRB
57	3/25/10	ISSUED AS-BUILT PER PC/M 08-010 (PARTIAL).	RH	RV	BSG	PRB	0	3-5-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	MAB	MD	RAS/SVM	LRB
56	9/2/09	ISSUED AS-BUILT PER CRN I-5071 (PC/M 02-066).	RH	BSG	-	LG	—	—	AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPM-91-045.	—	—	—	—

FPL

TURKEY POINT NUCLEAR UNIT 4

P & I D

CHEMICAL AND VOLUME CONTROL SYSTEM CHARGING AND LETDOWN

STONE & WEBSTER ENGINEERING CORP. FT. LAUDERDALE, FLORIDA

DRAWING NUMBER 5614-M-3047

SHEET 2

SYS 047

REV 64

8 5614-M-3047_SH 2.DWG

SHT 1 — 5614-M-3050 ON DWG

NOTES CONTINUED:

15. DURING SHUTDOWN AND COOLDOWN WITH RHR IN SERVICE, VALVES 862A & B AND 863A & B ARE CLOSED. TO PREVENT PRESSURIZING THE LINE TO RWST, PC-600 & PC-601 WILL OPEN CONTACTS AND PREVENT THESE VALVES FROM OPENING IF RHR PRESSURE IS ABOVE 210 PSIG. ALSO, 862A & B AND 863A & B ARE INTERLOCKED WITH 750 & 751. SEE NOTES 5 & 16.
16. INTERLOCKS FOR MOV-4-751: a) PT-4-405 LOOP "A" HOT LEG ABOVE 525 PSIG PREVENTS OPENING VALVE, b) IF VALVE IS OPEN, PT-4-405 WILL CLOSE VALVE IF RCS PRESSURE RISES ABOVE 525 PSIG, c) MOV-4-751 CANNOT BE OPENED IF 4-883B OR 4-862B ON RHR SYSTEM IS OPEN, d) AUTO-VALVE CLOSING CAN BE MANUALLY OVER-RIDDEN IF PRESSURE IS LESS THAN 525 PSIG AND OMS IS IN LOW PRESSURE MODE.
17. ADJUSTED AS REQUIRED TO ESTABLISH RHR COOLING DURING CONTROL ROOM EVACUATION.
18. ALL PIPING AND ASSOCIATED MECHANICAL COMPONENTS DEPICTED ON THIS DRAWING ARE WITHIN THE SCOPE OF LICENSE RENEWAL WITH THE EXCEPTION OF PIPING/FITTINGS/TUBING DOWNSTREAM OF VENTS AND DRAINS AND AS OTHERWISE NOTED.
19. PIPING IN THIS REGION DOES NOT FALL UNDER STANDARD PIN PIPE CLASSES. IT IS PART OF THE VENDOR SUPPLIED STRAINER EQUIPMENT. SEE DWG. SERIES 5614-M-450-127 FOR PIPING MATERIALS.

NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2.
2. MOV-4-861A & B HAVE 3/16" HOLE DRILLED IN DOWNSTREAM DISC TO PROVIDE RELIEF PATH FROM BETWEEN THE DISCS.
3. VALVE 4-887 SHALL BE UNLOCKED AND THROTTLED TO LIMIT RHR PUMP RUNOUT ONLY DURING REFUELING MODE WHEN TRANSFERRING CAVITY WATER BACK TO THE RWST.
4. MOV-4-872 TO OPEN ONLY 2 1/2" TO AVOID RHR PUMP RUNOUT DURING ALTERNATE RHR COOLING.
5. INTERLOCKS FOR MOV-4-750: a) PT-4-403 LOOP "B" HOT LEG ABOVE 525 PSIG PREVENTS OPENING VALVE, b) IF VALVE IS OPEN, PT-4-403 WILL CLOSE VALVE IF RCS PRESSURE RISES ABOVE 525 PSIG, c) MOV-4-750 CANNOT BE OPENED IF 4-883A OR 4-862A ON RHR SYSTEM IS OPEN, d) AUTO-VALVE CLOSING CAN BE MANUALLY OVER-RIDDEN IF PRESSURE IS LESS THAN 525 PSIG AND OMS IS IN LOW PRESSURE MODE.
6. SEALED IN AS SHOWN.
7. VALVE HCV-4-758 OPENING IS LIMITED BY A MECHANICAL STOP TO PREVENT SINGLE PUMP RUN-OUT DURING ACCIDENT CONDITIONS AND A MECHANICAL STOP IN THE CLOSED DIRECTION TO LIMIT DISC ROTATION AT THE CLOSED POSITION.
8. ALL PIPING ON THIS DRAWING IS WITHIN SEISMIC/Q BOUNDARIES UNLESS OTHERWISE NOTED.
9. IMB = INSIDE MISSILE BARRIER
   OMB = OUTSIDE MISSILE BARRIER
10. HIGH POINT OF RHR SYSTEM FOR VENTING.
11. HANDWHEELS ARE LOCKED ON MOV-4-862 A & B.
12. A 3/16" HOLE IS DRILLED IN RCS SIDE OF DISK TO PROVIDE A RELIEF PATH.
13. MOV-4-872 HAS A 1/8" HOLE DRILLED IN THE DOWNSTREAM DISC FOR INTER DISC RELIEF.
14. LOW ALARM SET AT 3000 GPM. HIGH ALARM MUST BE SET ABOVE 3000 GPM.

NOTE CONTINUED @ UPPER LEFT CORNER.

REFERENCE DRAWINGS:

5614-M-3062	SERIES	SAFETY INJECTION SYSTEM
5614-M-3068	SH.1	CONTAINMENT SPRAY SYSTEM
5614-M-3084	SH.1	SAFETY INJECTION - ACCUMULATOR SYSTEM
5614-M-3041	SH.1	REACTOR COOLANT SYSTEM
5614-M-3030	SH.2	COMPONENT COOLING WATER SYSTEM
5610-T-D-2		CONTROL SYSTEM DIAGRAM, CONTROL, PROTECTION, SAFEGUARDS AND STATUS MONITORING SYSTEMS LOGIC DIAGRAM
5610-T-L1		
5614-M-3036	SH. 1	SAMPLE SYSTEM - NSSS
5614-M-3047	SH. 1	CHEMICAL & VOLUME CONTROL SYSTEM

THIS DRAWING SUPERSEDES DRAWINGS:

5610-M-389		REV. 5
5610-M-470-5	SH.2	REV. 26
5610-M-1300		REV. 4
5610-M-470-5	SH.4	REV. 26
5610-M-370		REV. 3
5610-M-450-53		REV. 22
5610-M-470-5	SH.3	REV. 31
5610-M-470-45	SH.2	REV. 6
5610-M-470-45	SH.3	REV. 10
5610-M-470-45	SH.4	REV. 4

NOTE: THIS DWG IS MADE FROM

FPL PID	5610-T-E-4010 SH.1	REV.101
FPL PID	5610-T-E-4310 SH.2	REV.72
FPL PID	5610-T-E-4315 SH.2	REV.32

REV	DATE	REVISION	BY	CH	APP	APP	REV	DATE	REVISION	BY	CH	APP	APP
37	11-25-09	ISSUED AS-BUILT PER CRN M-12954 (PC/M 08-067).	RH	BB	PRB	EB	31	6-20-07	ISSUED AS-BUILT PER CRN M-12028 (PC/M 07-021).	RH	RV	BSG	ASD
36	11/23/09	ISSUED AS-BUILT PER CRN M-12949 (PC/M 08-067).	RV	RV	DW	JEA	30	1-19-07	ISSUED AS-BUILT PER CRN-M-11923 (PC/M 06-073).	RV	BB	-	PRB
35	11/11/09	ISSUED AS-BUILT PER CRN-M-12828 (PC/M 08-067).	RV	RH	ABR	PRB	29	11-23-06	ISSUED AS-BUILT PER PC/M 06-049.	JPG	RV	JK	JTL
34	8/12/09	ISSUED AS-BUILT PER CRN-M-12754 (PC/M 09-034).	RV	BB	PJV	PRB	38	2-17-10	ISSUED AS-BUILT PER PC/M 04-104.	RH	BB	SAG	YMG
33	1/17/09	ISSUED AS-BUILT PER PC/M 04-104. (PARTIAL)	RV	SB	SB	PRB	0	4-2-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	TAM	MD	RAS	LRB
32	5-2-08	ISSUED AS-BUILT PER PC/M 08-031 AND INCORP. CRN-M-12309.	RH	BB	GCV	PRB	—	—	AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPM-91-044.	—	—	—	—

FPL

TURKEY POINT NUCLEAR UNIT 4

P & I D

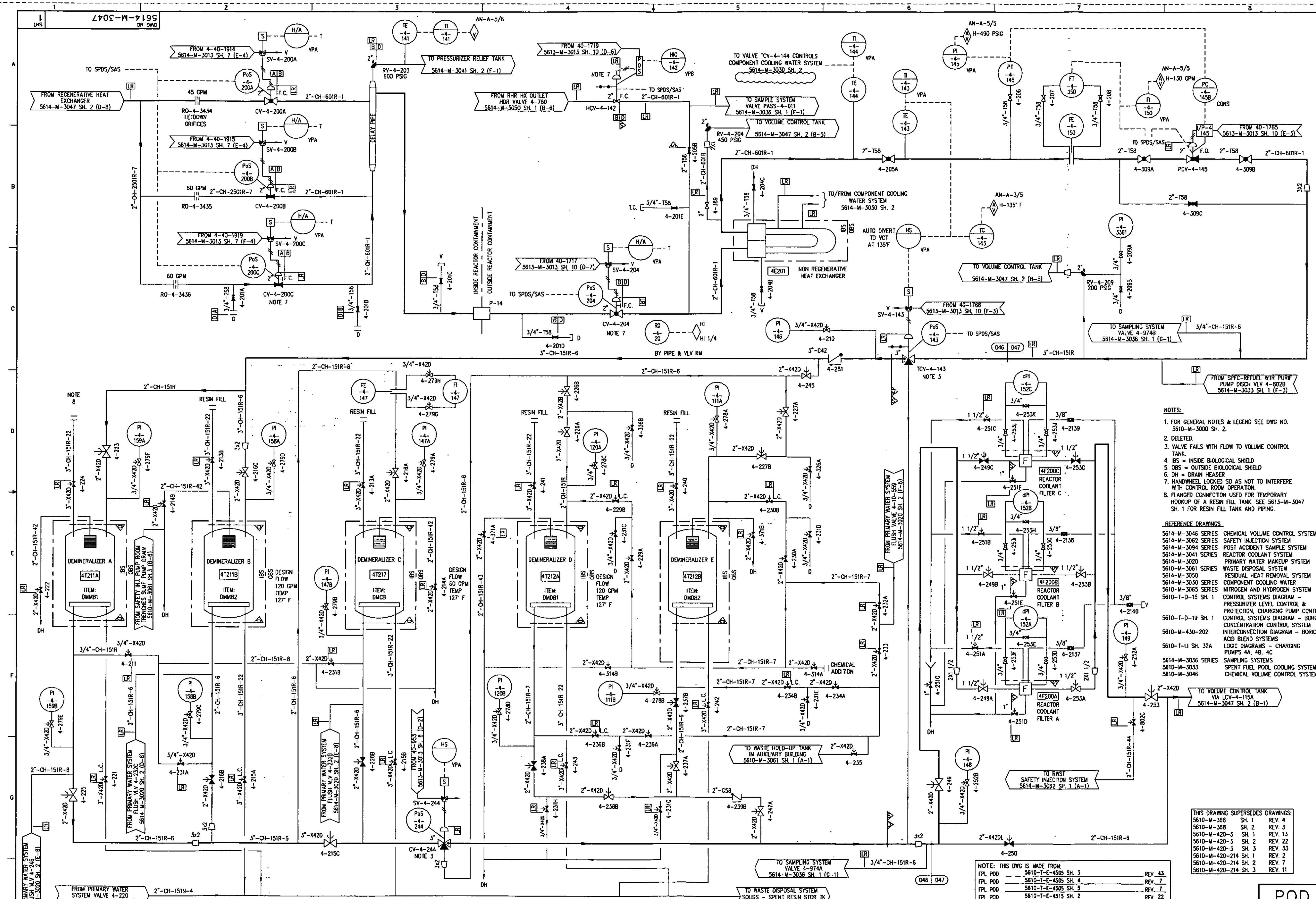
RESIDUAL HEAT REMOVAL SYSTEM

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

DRAWING NUMBER 5614-M-3050 | SYS 050 | REV 38 | SHEET 1

POD

5614-M-3050_SH_1.DWG



NOTES:

1. FOR GENERAL NOTES & LEGEND SEE DWG NO. 5610-M-3000 SH. 2.
2. DELETED.
3. VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK.
4. IBS = INSIDE BIOLOGICAL SHIELD
5. OBS = OUTSIDE BIOLOGICAL SHIELD
6. DH = DRAIN HEADER
7. HANDWHEEL LOCKED SO AS NOT TO INTERFERE WITH CONTROL ROOM OPERATION.
8. FLANGED CONNECTION USED FOR TEMPORARY HOOKUP OF A RESIN FILL TANK. SEE 5613-M-3047 SH. 1 FOR RESIN FILL TANK AND PIPING.

REFERENCE DRAWINGS

5614-M-3046 SERIES	CHEMICAL VOLUME CONTROL SYSTEM
5614-M-3062 SERIES	SAFETY INJECTION SYSTEM
5614-M-3094 SERIES	POST ACCIDENT SAMPLE SYSTEM
5614-M-3041 SERIES	REACTOR COOLANT SYSTEM
5614-M-3020	PRIMARY WATER MAKEUP SYSTEM
5610-M-3061 SERIES	WASTE DISPOSAL SYSTEM
5614-M-3050	RESIDUAL HEAT REMOVAL SYSTEM
5614-M-3030 SERIES	COMPONENT COOLING WATER
5610-M-3065 SERIES	NITROGEN AND HYDROGEN SYSTEM
5610-T-D-15 SH. 1	CONTROL SYSTEMS DIAGRAM - PRESSURIZER LEVEL CONTROL & PROTECTION, CHARGING PUMP CONTROL
5610-T-D-19 SH. 1	CONTROL SYSTEMS DIAGRAM - BORON CONCENTRATION CONTROL SYSTEM
5610-M-430-202	INTERCONNECTION DIAGRAM - BORIC ACID BLEND SYSTEMS
5610-T-LI SH. 32A	LOGIC DIAGRAMS - CHARGING PUMPS 4A, 4B, 4C
5614-M-3036 SERIES	SAMPLING SYSTEMS
5610-M-3033	SPENT FUEL POOL COOLING SYSTEM
5610-M-3046	CHEMICAL VOLUME CONTROL SYSTEM

THIS DRAWING SUPERSEDES DRAWINGS:

5610-M-368	SH. 1	REV. 4
5610-M-368	SH. 2	REV. 3
5610-M-420-3	SH. 1	REV. 13
5610-M-420-3	SH. 2	REV. 22
5610-M-420-3	SH. 3	REV. 33
5610-M-420-214	SH. 1	REV. 2
5610-M-420-214	SH. 2	REV. 7
5610-M-420-214	SH. 3	REV. 11

NOTE: THIS DWG IS MADE FROM:

FPL POD	5610-T-E-4505 SH. 3	REV. 43
FPL POD	5610-T-E-4505 SH. 4	REV. 7
FPL POD	5610-T-E-4505 SH. 5	REV. 7
FPL POD	5610-T-E-4515 SH. 2	REV. 22

POD

REV	DATE	REVISION	BY	CH	APP	APP	REV	DATE	REVISION	BY	CH	APP	APP
21	11/24/08	ISSUED AS-BUILT PER CRN I-04774 (PC/M 06-104).	RH	RV	ASD	PMB	15	3-18-00	ISSUED AS-BUILT PER CRN-M-9848 (PC/M 99-046) AND CRN-M-9993	JPG	RH	JK	ASD
20	6/1/07	ISSUED AS-BUILT PER CRN-M-11762 (PC/M 03-106)	RH	RV	PJV	RSV	—	—	(PC/M 99-061).	—	—	—	—
19	3-8-05	ISSUED AS-BUILT PER CRN-M-11262 (PC/M 03-106).	RH	RRW	BSG	JTL	14	2-2-00	ISSUED AS-BUILT PER PC/M 98-023.	RH	RV	SAG	JM
18	10-27-03	ISSUED AS-BUILT PER PC/M 03-105.	RV	SB	AAP	ASD	13	12-11-95	ISSUED AS-BUILT FOR PC/M 94-013 AND INCORPORATED CRN-M-8534.	RH	RV	TSC	BD
17	10-19-03	ISSUED AS-BUILT PER PC/M 03-105. (PARTIAL)	RV	SB	AAP	ASD	0	3-5-91	THIS DWG CREATED PER THE P & ID RECONSTITUTION PROJECT SCOPE	MAB	MD	~~RAS~~ SVM	LRB
16	6-17-02	ISSUED AS-BUILT PER CRN-M-10465 (PC/M 00-016).	RH	RV	AGM	JTL	—	—	AND ISSUED INTO THE FPL DWG SYSTEM PER DCR-TPM-91-045.	—	—	—	—

FPL

TURKEY POINT NUCLEAR UNIT 4

P & ID

CHEMICAL AND VOLUME CONTROL SYSTEM
CHARGING AND LETDOWN

STONE & WEBSTER ENGINEERING CORP.
FT. LAUDERDALE, FLORIDA

DRAWING NUMBER 5614-M-3047

SHEET 1

SYS 047

REV 21

5614-M-3047_SH 1