Nuclear Operating Company
South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

November 25, 1998
NOC-AE-000365
File No.: G09.16
10CFR50.55a

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Supplemental Information for Request for Relief from
ASME Code Case N-498 (RR-ENG-28)

Reference:
Correspondence from Thomas J. Jordan, South Texas Project, to NRC Document Control Desk dated October 8, 1998 (NOC-AE-000313)

In accordance with the provisions of 10CFR50.55a(a)(3)(ii), the South Texas Project submitted the referenced request for relief from the requirements of ASME Section XI Code Case N-498. ASME Code Case N-498 has been approved for use previously and is listed in Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability ASME Section XI Division 1," Revision 11. Approval of this relief request will exempt Class 1 components from being tested at full Reactor Coolant System pressure if they are normally isolated from full Reactor Coolant System pressure.

Attached is supplemental information in support of the relief request providing justification as to why South Texas Project compliance with Code Case N-498 would result in hardship without a compensating increase in the level of quality and safety. In addition, the list of affected valves has been revised and the valves categorized according to their specific surveillance considerations.

If there are any questions, please contact either Mr. P. L. Walker at (512) 972-8392 or me at (512) 972-7902.

Thomas J. Jordan
Manager,
System Engineering

PLW
Attachment:
Supplemental Information for Request for Relief from ASME Code Case N-498 (RR-ENG-28)

c:

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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

SOUTH TEXAS PROJECT
UNITS 1 AND 2
Supplemental Information for Request for Relief from
ASME Code Case N-498 (RR-ENG-28)

Introduction:

ASME Code Case N-498, "Alternative Rules for 10-year Hydrostatic Pressure Testing for Class 1 and 2 Systems, Section XI, Division 1," allows use of a system leakage test (IWB-5221) in lieu of a hydrostatic test. Code Case N-498 requires that the boundary subject to test pressurization during the system pressure test extend to all Class 1 pressure-retaining components within the system boundary.

Pressurization of these components to full RCS pressure is impractical under normal operating conditions, resulting in hardship without a compensating increase in the level of quality and safety. Consequently, the South Texas Project requests relief from testing Class 1 components at full Reactor Coolant System pressure for those components that are normally isolated from Reactor Coolant System pressure. Components covered under the scope of this relief request are located inside containment.

Under this relief, the pressure-retaining boundary during the 10-year hydrostatic test shall correspond to the reactor coolant system boundary, with all valves in the normal position, that is required for normal reactor operation startup. VT-2 examination shall, however, extend to and include the second closed valve at the boundary extremity. This portion of the Class 1 boundary will be VT-2 inspected at a stabilization pressure achieved based on seat leakage from the first isolation valve.

10CFR50 Appendix A, "General Design Criteria for Nuclear Power Plants," and Appendix J, "Primary Reactor Containment Leakage Testing for Water-cooled Power Reactors," elaborate on testing valves which provide containment isolation. However, the valves addressed by this relief request are double isolation valves located only inside containment. Consequently, Appendix A and Appendix J do not apply to the components addressed by this relief request.

Hardship Considerations and Compensatory Factors:

The valves to be included under this relief request have been categorized according to the types of hardship imposed by testing under Code Case N-498. Each category is provided with a list of factors that would compensate for not testing the listed valves under Code Case N-498.

1. The Class 1 piping and valves identified below are normally isolated from RCS pressure by the upstream check valve during normal operations. Consequently, the pressure attained as a result of leakage past the check valve may not reach RCS operating pressure, but rather would be dependent upon the relative leak rates of the two isolation valves.

Note: The following check valves and piping are located inside Reactor Containment.

- 6"/8"SI1(2)108BB1 between XSI0009A and XSI0010A (High Head Safety Injection) (Drawing 5N129F05013)
- 8"RH1(2)112BB1 between XRH0020A and 8"SI1(2)108BB1 (Residual Heat Removal) (Drawing 5N129F05013)
- 6"SI1(2)111BB1 between XSI0007A and 10"RH1(2)108BB1 (High Head Safety Injection) (Drawing 5N129F05013)
- 8"/10"RH1(2)108BB1 between XRH0032A, and 12"SI1(2)125BB1 (Residual Heat Removal System Train A) (Drawing 5N129F05013)
- 6"/8"SI1(2)208BB1 between XSI0009B and XSI0010B (High Head Safety Injection) (Drawing 5N129F05014)
- 8"RH1(2)212BB1 between XRH0020B and 8"SI1(2)208BB1 (Residual Heat Removal System) (Drawing 5N129F05014)
- 6"SI1(2)211BB1 between XSI0007B and 10"RH1(2)208BB1 (High Head Safety Injection) (Drawing 5N129F05014)
- 8"/10"RH1(2)208BB1 between XRH0032B and 12"SI1(2)218BB1 (Residual Heat Removal System Train B) (Drawing 5N129F05014)
- 8"SI1(2)327BB1 between XSI0009C and XSI0010C (High Head Safety Injection) (Drawing 5N129F05015)
- 8"RH1(2)315BB1 between XRH0020C and 8"SI1(2)327BB1 (Residual Heat Removal System)(Drawing 5N129F05015)
- 6"SI1(2)308BB1 between XSI0007C and 10"RH1(2)308BB1 (High Head Safety Injection) (Drawing 5N129F05015)
- 8"/10"RH1(2)308BB1 between XRH0032C and 12"SI1(2)315BB1 (Residual Heat Removal System Train C) (Drawing 5N129F05015)
- 12"SI1(2)125BB1 between XSI0038A and XSI0046A (RCS Cold Leg Loop 1) (Drawing 5N129F05016)
- 12"SI1(2)218BB1 between XSI0038B and XSI0046B (RCS Cold Leg Loop 2) (Drawing 5N129F05016)
- 12"SI1(2)315BB1 between XSI0038C and XSI0046C (RCS Cold Leg Loop 3) (Drawing 5N129F05016)

Hardships Associated with Testing the Listed Components under Code Case N-498

- No means exists to measure the pressure to which these components are subjected during testing without developing special test methodology. Testing of these systems at elevated pressures to meet Code Case N-498 would require a special test procedure which would involve cross-connecting the Safety Injection test lines used for leak testing these check valves and operating a hydrostatic test pump to pressurize each of the identified Class 1 lines. This test would place the plant in a lineup not previously used or evaluated for use at the South Texas Project.

- The support systems used for testing would have to be pressurized to higher than their normal operating levels. Specifically, the interconnected Safety Injection system test lines with a defined operating pressure as low as 55 psig would be subjected to greater than RCS normal operation pressure.
- Because all of the listed components are at least partially contained inside the bioshield, application of Code Case N-498 requirements would result in additional radiation exposure to plant personnel.
- Leakage past the valve to the RCS could affect the boron concentration of the RCS and complicate the task of maintaining homogeneous boron concentrations during this Mode 3 test.

Compensatory Factors

- The pressure boundary integrity of these components is validated and documented each refueling outage by a system leakage test.
- RCS pressure boundary valve leak checks are performed every refueling outage to validate the leak rates of all lines subjected to normal RCS pressure.
- These components function to provide redundant protection. If the line downstream from the first isolation valve were to fail, the first isolation valve will still provide the pressure boundary protection function.

2. The Class 1 piping and valves identified below are normally isolated from RCS pressure by the first isolation valve (RH-0060A, B, C) during normal operation. Consequently, the pressure attained as a result of leakage through the first valve will depend on the relative leak rates of the two valves in series and may not reach RCS operating pressure.

Note: The following isolation valves and piping are all located inside the Containment.

- 12"RH1(2)101BB1 between XRH0060A and XRH0061A (RCS Hot Leg Loop 1) (Drawing 5R169F20000)
- 12"RH1(2)201BB1 between XRH0060B and XRH0061B (RCS Hot Leg Loop 2) (Drawing 5R169F20000)
- 12"RH1(2)301BB1 between XRH0060C and XRH0061C (RCS Hot Leg Loop 3) (Drawing 5R169F20000)
- 1" line associated with and including isolation valves HV3657A and HV3658A (Drawing 5R149F05001)
- 1" line associated with and including isolation valves HV3657B and HV3658B (Drawing 5R149F05001)

Hardships Associated with Testing the Listed Components under Code Case N-498

- No means exists to measure the pressure to which these components are subjected during testing. Testing these systems at elevated pressures would necessitate generation of a special test procedure because this test would place the plant in a configuration that has

not been previously performed or evaluated for use at the South Texas Project. For the case of the RHR suction isolation valves, this test would involve overriding a protective interlock to open the first isolation valve.

- Opening the first isolation valve would result in single-valve protection of the RHR system, which has a design pressure of 600 psig. An intersystem LOCA could occur should the second valve open or allow sufficient leakage to cause the RHR relief valve to lift.
- Opening the second isolation valve in order to pressure up against the first isolation valve is impractical because the RHR operating pressure is 359 psig. The design pressure of the RHR system is only 600 psig for the downstream portion of the system. To pressurize the RHR to RCS pressure could create a failure in the system resulting in an intersystem LOCA.

Compensatory Factors

- The pressure boundary integrity of these components is validated and documented each refueling outage by a system leakage test.
- These components function to provide redundant protection. If the line downstream from the first isolation valve were to fail, the first isolation valve will still provide the pressure boundary protection function.

3. The following vent and drain lines and associated manual isolation valves isolate the RCS from the RCB atmosphere. These components are normally isolated from RCS pressure by the first normally closed isolation valve during normal operations. Consequently, the pressure attained as a result of leakage through that first isolation valve will depend on the leak rate and the tightness of the downstream isolation components and may not reach RCS operating pressure.

Note: The following drain isolation valves and piping are all located inside the Containment Bioshield.

- 2"RC1(2)121BB1 between RC0057A and RC0058A (RCS Loop 1) (Drawing 5R149F05001)
- 2"RC1(2)220BB1 between RC0057B and RC0058B (RCS Loop 2) (Drawing 5R149F05001)
- 2"RC1(2)321BB1 between RC0057C and RC0058C (RCS Loop 3) (Drawing 5R149F05001)
- 2"RC1(2)418BB1 between RC0057D and RC0058D (RCS Loop 4) (Drawing 5R149F05001
- ¾" line associated with and including isolation valves RC0123 and RC0152 (Drawing 5R149F05001)
- ¾" RC1(2)122BB1 and RC0200 (Drawing 5R149F05001)
- ¾" line associated with and including isolation valves RC0128 and RC0146 (Drawing 5R149F05001)

- ¾" line associated with and including isolation valves RC0129 and RC0142 (Drawing 5R149F05001)
- 1" line associated with and including isolation valves SI0168 and SI0203 (Drawing 5N129F05015)
- 1" line associated with and including isolation valves SI0170 and SI0202 (Drawing 5N129F05015)

Hardships Associated with Testing the Listed Components under Code Case N-498

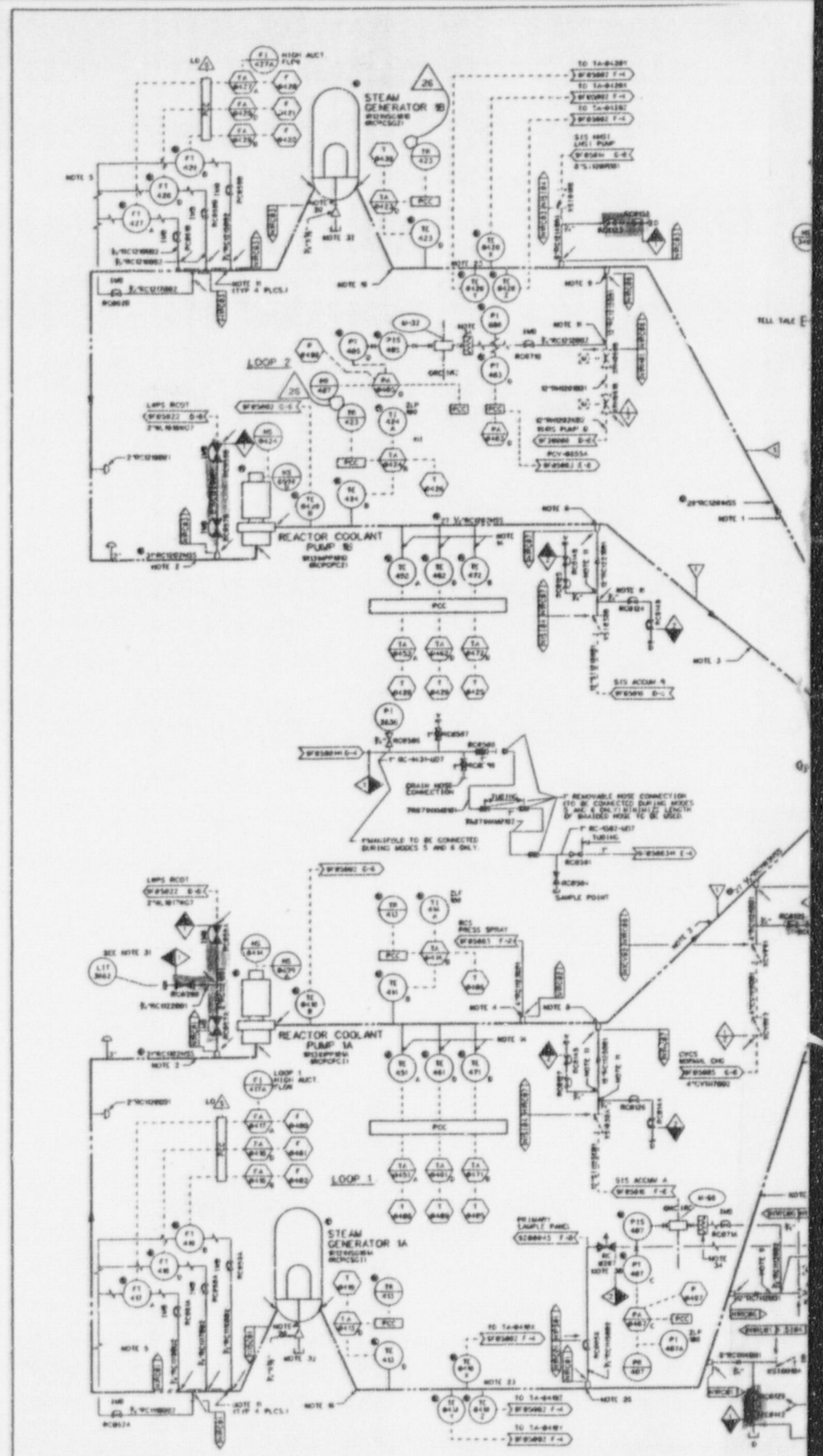
- No means exists to measure the pressure to which these components are subjected during testing. Testing of these systems at elevated pressures would necessitate generation of a special test procedure because this test would place the plant in a lineup that has not been previously used or evaluated for use at the South Texas Project. Because there are no test connections between these valves, the test would involve opening the first manual isolation valve.
- Opening the first isolation valve would result in single-valve protection to the RCB atmosphere.
- Because the identified components are inside the bioshield, testing under the criteria of Code Case N-498 would result in additional radiation exposure to plant personnel.

Compensatory Factors

- The pressure boundary integrity of these components is validated and documented each refueling outage by a system leakage test.
- These components function to provide redundant protection. If the line downstream of the first isolation valve were to fail, the first isolation valve would still provide pressure boundary protection.

COMBINED LIST OF AFFECTED COMPONENTS

- 6"/8"SI1(2)108BB1 between XSI0009A and XSI0010A (High Head Safety Injection)
- 8"RH1(2)112BB1 between XRH0020A and 8"SI1(2)108BB1 (Residual Heat Removal)
- 6"SI1(2)111BB1 between XSI0007A and 10"RH1(2)108BB1 (High Head Safety Injection)
- 8"/10"RH1(2)108BB1 between XRH0032A, and 12"SI1(2)125BB1 (Residual Heat Removal System Train A)
- 6"/8"SI1(2)208BB1 between XSI0009B and XSI0010B (High Head Safety Injection)
- 8"RH1(2)212BB1 between XRH0020B and 8"SI1(2)208BB1 (Residual Heat Removal System)
- 6"SI1(2)211BB1 between XSI0007B and 10"RH1(2)208BB1 (High Head Safety Injection)
- 8"/10"RH1(2)208BB1 between XRH0032B and 12"SI1(2)218BB1 (Residual Heat Removal System Train B)
- 8"SI1(2)327BB1 between XSI0009C and XSI0010C (High Head Safety Injection)
- 8"RH1(2)315BB1 between XRH0020C and 8"SI1(2)327BB1 (Residual Heat Removal System)
- 6"SI1(2)308BB1 between XSI0007C and 10"RH1(2)308BB1 (High Head Safety Injection)
- 8"/10"RH1(2)308BB1 between XRH0032C and 12"SI1(2)315BB1 (Residual Heat Removal System Train C)
- 12"SI1(2)125BB1 between XSI0038A and XSI0046A (RCS Cold Leg Loop 1)
- 12"SI1(2)218BB1 between XSI0038B and XSI0046B (RCS Cold Leg Loop 2)
- 12"SI1(2)315BB1 between XSI0038C and XSI0046C (RCS Cold Leg Loop 3)
- 12"RH1(2)101BB1 between XRH0060A and XRH0061A (RCS Hot Leg Loop 1)
- 12"RH1(2)201BB1 between XRH0060B and XRH0061B (RCS Hot Leg Loop 2)
- 12"RH1(2)301BB1 between XRH0060C and XRH0061C (RCS Hot Leg Loop 3)
- 2"RC1(2)121BB1 between RC0057A and RC0058A (RCS Loop 1)
- 2"RC1(2)220BB1 between RC0057B and RC0058B (RCS Loop 2)
- 2"RC1(2)321BB1 between RC0057C and RC0058C (RCS Loop 3)
- 2"RC1(2)418BB1 between RC0057D and RC0058D (RCS Loop 4)
- ¾" line associated with and including isolation valves RC0123 and RC0152
- ¾" RC1(2)122BB1 and RC0200
- ¾" line associated with and including isolation valves RC0128 and RC0146
- ¾" line associated with and including isolation valves RC0129 and RC0142
- 1" line associated with and including isolation valves HV3657A and HV3658A
- 1" line associated with and including isolation valves HV3657B and HV3658B
- 1" line associated with and including isolation valves SI0168 and SI0203
- 1" line associated with and including isolation valves SI0170 and SI0202



NO.	ISSUE DATE	REVISION	BY	CKR	RE	DV	MA	SE	PE	NO.	ISSUE DATE
26	6/19/96	INCORP ECN 98B2288									
25	8-30-95	INCORP ECN 95-02735	SIGNATURES ON FILE								
24	3-24-94	EDITORIAL CORRECTION	SIGNATURES ON FILE								
8-23	6/28/83	ISSUED FOR CONSTRUCTION	SIGNATURES ON FILE								

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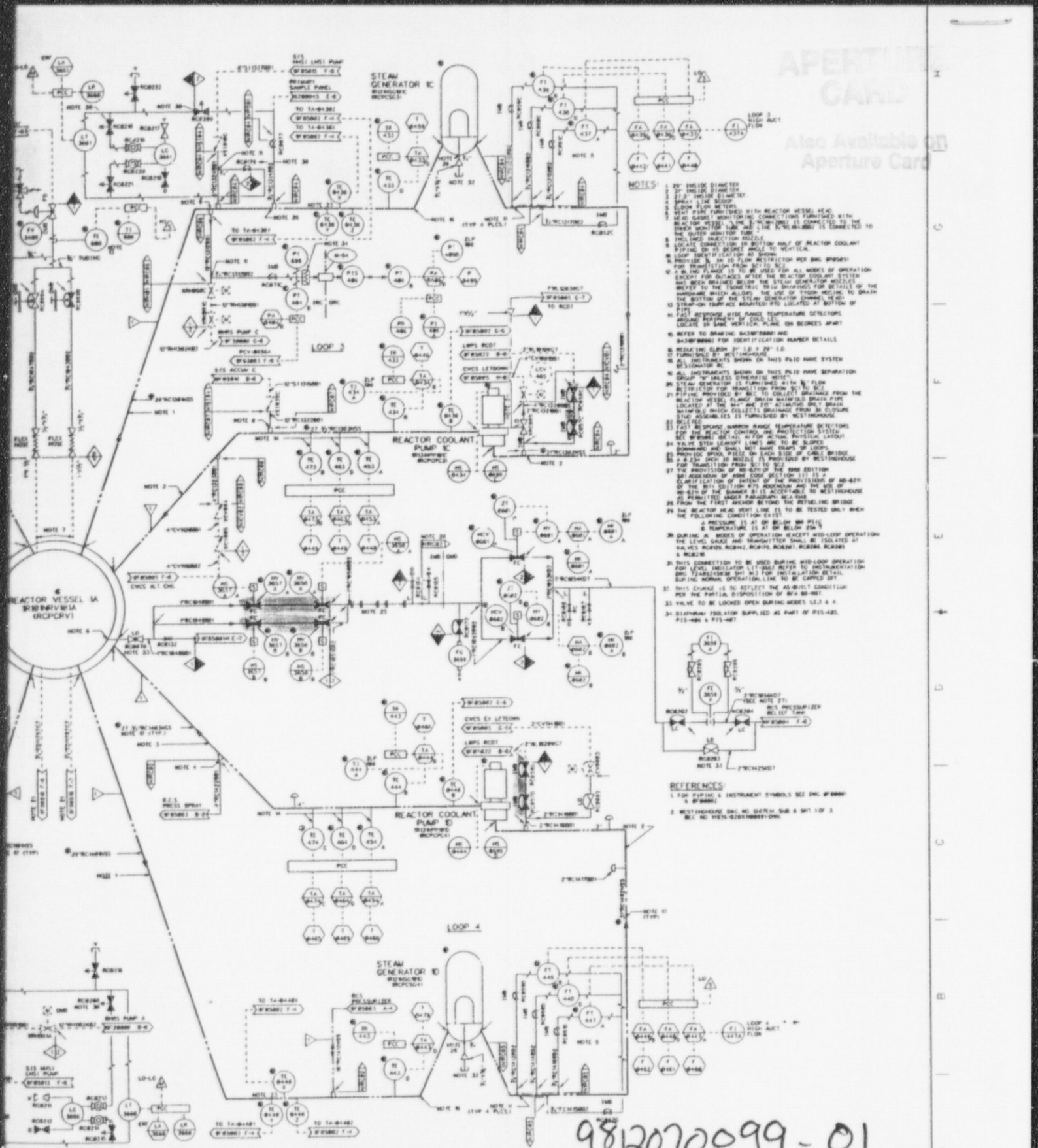
E D C B



9812070099-01

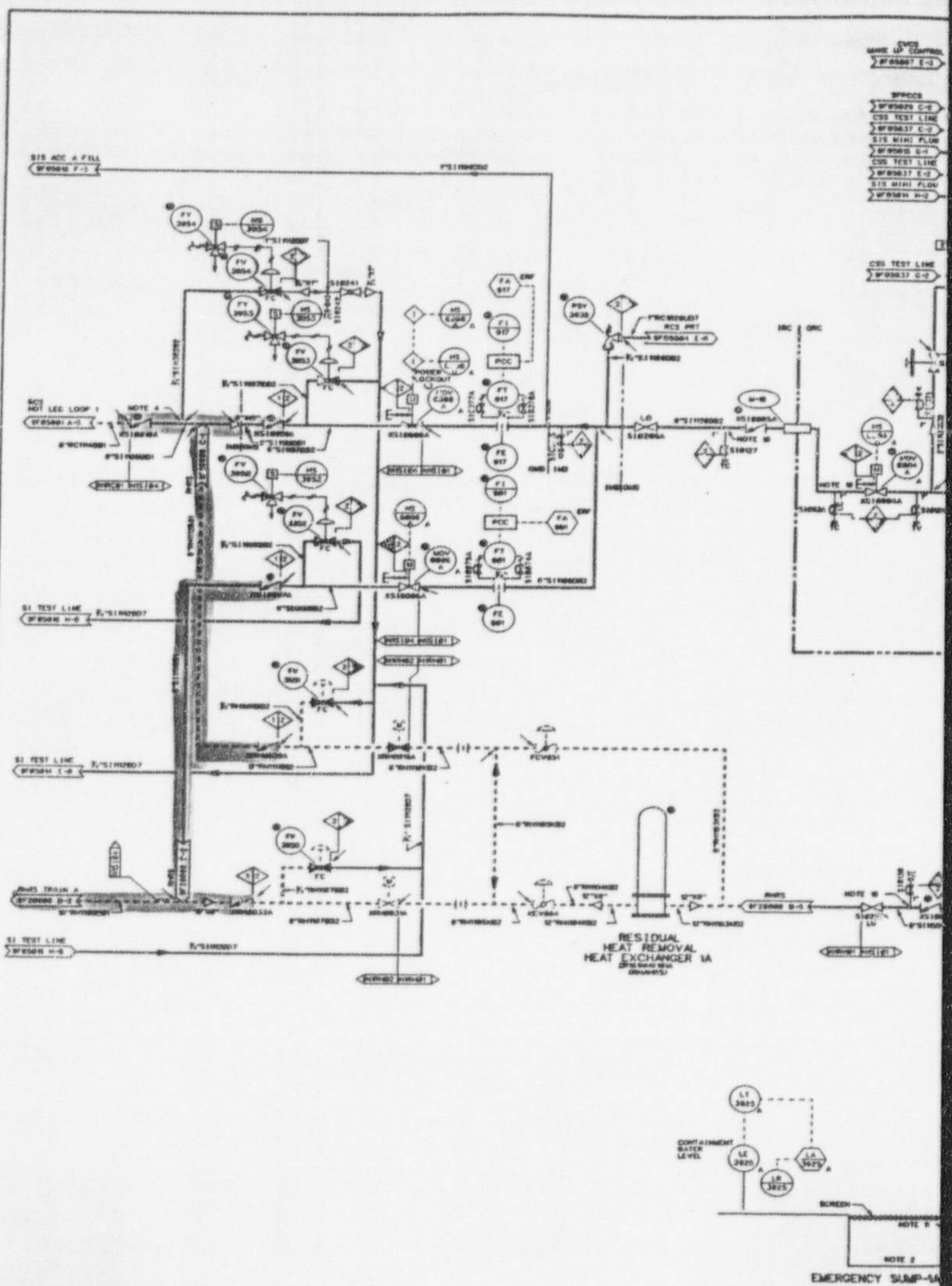
HOUSTON LIGHTING & POWER COMPANY
SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

PIPING AND INSTRUMENTATION DIAGRAM
RCS PRIMARY COOLANT LOOP

SCALE	DRG NO	REV
NONE	SR1419F05001 41	26

REVISION | BY | CHK | RE | DV | NA | SE | PE

30:1



NO.	ISSUE DATE	REVISION	ORIG	CHKR	RE	EM	SE	MD	ISSUE DATE
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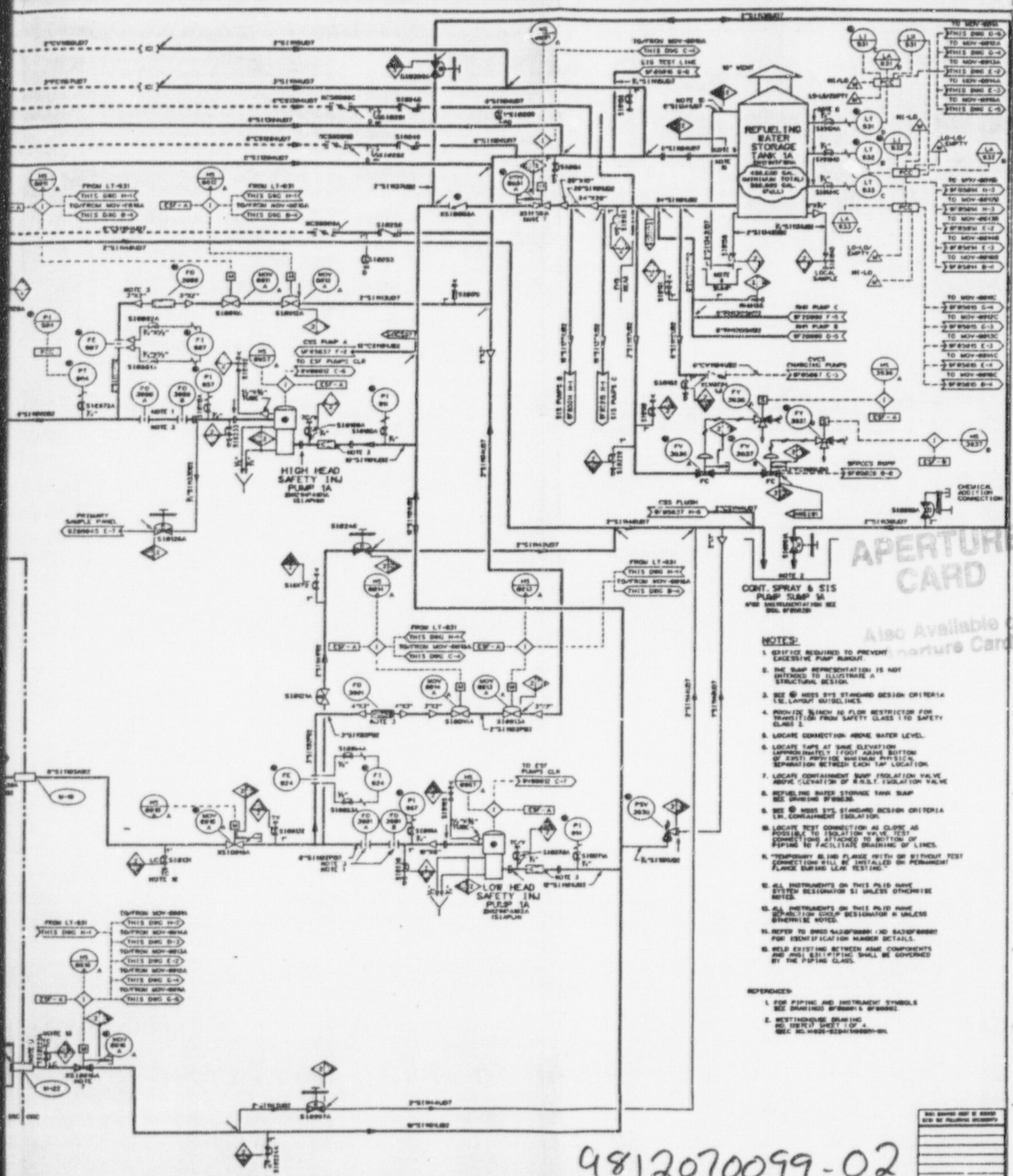
20	8-28-97	ISSUED FOR CONSTRUCTION	SIGNATURES ON FILE						

8 7 6 5



NOTES:

1. ORIFICE REQUIRED TO PREVENT EXCESSIVE PUMP RUNOUT.
2. THE SUMP REPRESENTATION IS NOT INTENDED TO ILLUSTRATE A STRUCTURAL DESIGN.
3. SEE ⑩ NSSS SYS STANDARD DESIGN CRITERIA 1.10, LAYOUT GUIDELINES.
4. PROVIDE ¾ INCH AS FLOW RESTRICTOR FOR TRANSITION FROM SAFETY CLASS 1 TO SAFETY CLASS 2.
5. LOCATE CONNECTION ABOVE WATER LEVEL.
6. LOCATE TAPS AT SAME ELEVATION (APPROXIMATELY 1 FOOT ABOVE BOTTOM OF RWST) PROVIDE MAXIMUM PHYSICAL SEPARATION BETWEEN EACH TAP LOCATION.
7. LOCATE CONTAINMENT SUMP ISOLATION VALVE ABOVE ELEVATION OF R.W.S.T. ISOLATION VALVE
8. REFUELING WATER STORAGE TANK SUMP SEE DRAWING [illegible].
9. SEE ⑩ NSSS SYS. STANDARD DESIGN CRITERIA 1.11, CONTAINMENT ISOLATION.
10. LOCATE TEST CONNECTION AS CLOSE AS POSSIBLE TO ISOLATION VALVE. TEST CONNECTIONS ATTACHED TO BOTTOM OF PIPING TO FACILITATE DRAINING OF LINES.
11. "TEMPORARY BLIND FLANGE WITH OR WITHOUT TEST CONNECTION WILL BE INSTALLED ON PERMANENT FLANGE DURING LEAK TESTING."
12. ALL INSTRUMENTS ON THIS P&ID HAVE SYSTEM DESIGNATOR SI UNLESS OTHERWISE NOTED.
13. ALL INSTRUMENTS ON THIS P&ID HAVE SEPARATION GROUP DESIGNATOR A UNLESS OTHERWISE NOTED.
14. REFER TO DWGS [illegible] AND [illegible] FOR IDENTIFICATION NUMBER DETAILS.
15. WELD EXISTING BETWEEN ASME COMPONENTS AND ANSI B31.1 PIPING SHALL BE GOVERNED BY THE PIPING CLASS.

REFERENCES:

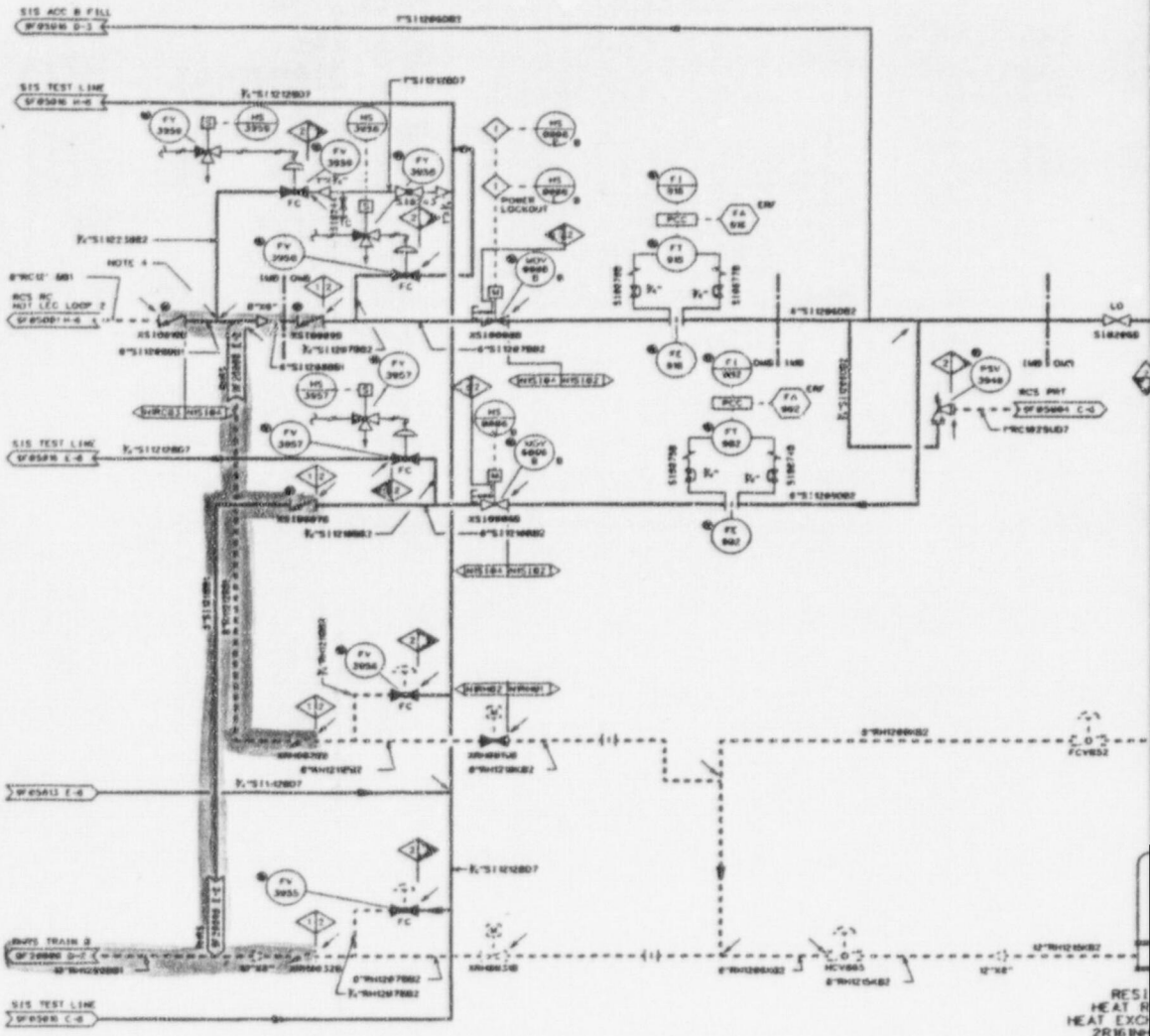
1. FOR PIPING AND INSTRUMENT SYMBOLS SEE DRAWINGS [illegible] & [illegible].
2. WESTINGHOUSE DRAWING NO. [illegible] SHEET 1 OF 4 [illegible]

9812070099-02

SOUTH TEXAS PROJECT
NUCLEAR OPERATING COMPANY

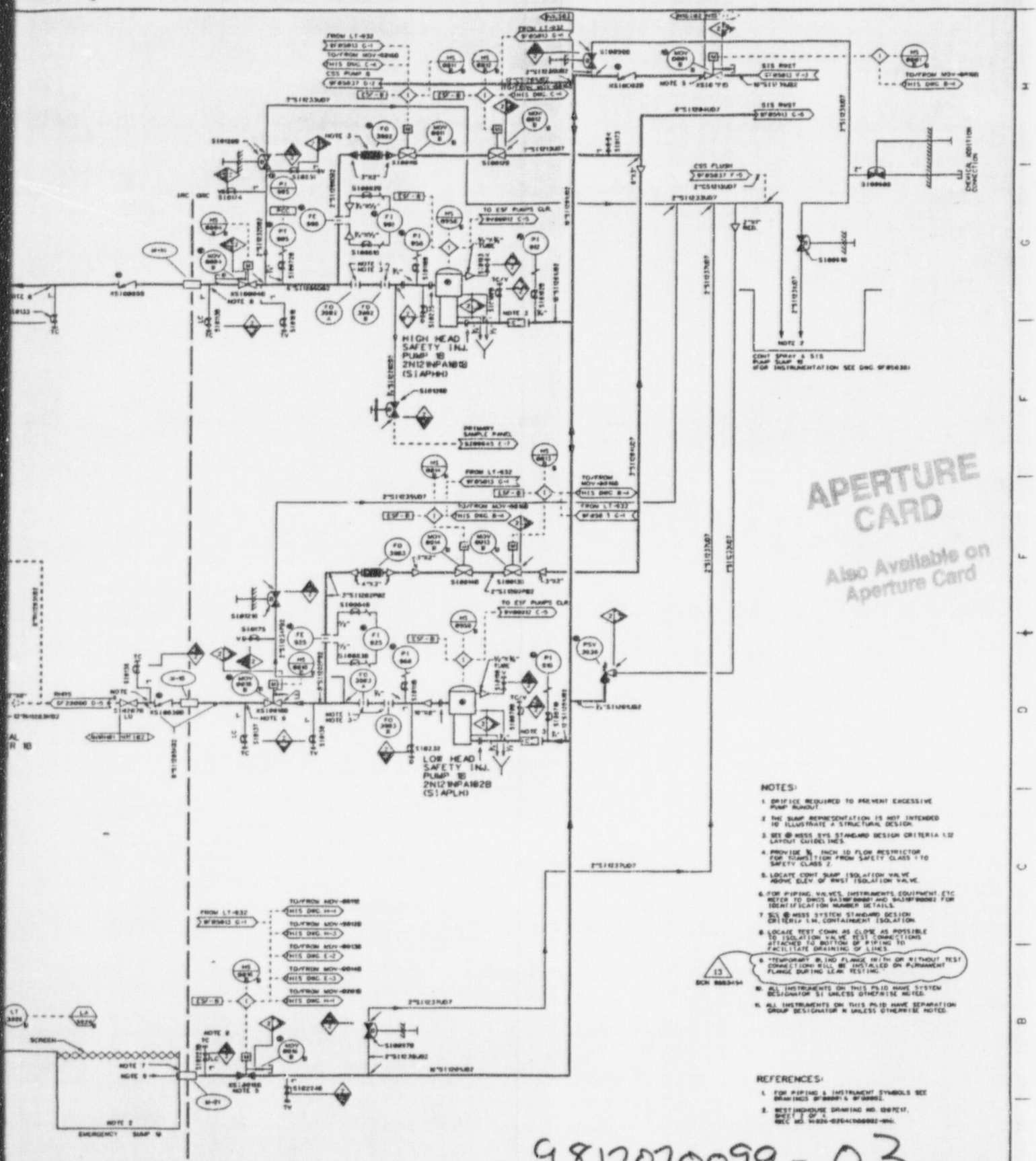
PIPING & INSTRUMENTATION DIAGRAM
SAFETY INJECTION SYSTEM

REVISION	ORIG	CHK	RE	DV	SK	PRIORITY	RMSECN NO.	DOC.CTL.NO.	CADD FILE NO.	SCALE	DWG. NO.	REV.
						1	5N129F05013#1	D870928	FJA157.211	NONE	5N129F05013#1	21



NO.	ISSUE DATE	REVISION	BY	CKR	RE	DY	MA	SE	PE	NO.	ISSUE DATE	REVIS
13	6-11-96	INCORP DCN 9683454	VJM			—	—		—			
12	9-24-93	INCORP DCN MD-2774	SIGNATURES ON FILE									
11	11-2-89	HL&P ASSUMES DESIGN CHANGE CONTROL INCORP ECN 8AE0883C	SIGNATURES ON FILE									
10	12-24-63	ISSUED FOR CONSTRUCTION	SIGNATURES ON FILE									

8 7 6 5 4 3 2 1



NOTES:

1. ORIFICE REQUIRED TO PREVENT EXCESSIVE PUMP RUNOUT.
2. THE SUMP REPRESENTATION IS NOT INTENDED TO ILLUSTRATE A STRUCTURAL DESIGN.
3. SEE @ NSSS SYS STANDARD DESIGN CRITERIA 1.12 LAYOUT GUIDELINES.
4. PROVIDE ¾ INCH ID FLOW RESTRICTOR FOR TRANSITION FROM SAFETY CLASS 1 TO SAFETY CLASS 2.
5. LOCATE CONT SUMP ISOLATION VALVE ABOVE ELEV. OF RWST ISOLATION VALVE.
6. FOR PIPING, VALVES, INSTRUMENTS, EQUIPMENT, ETC REFER TO DWGS 9A319F00001 AND 9A319F00002 FOR IDENTIFICATION NUMBER DETAILS.
7. SEE @ NSSS SYSTEM STANDARD DESIGN CRITERIA 1.14, CONTAINMENT ISOLATION.
8. LOCATE TEST CONN AS CLOSE AS POSSIBLE TO ISOLATION VALVE. TEST CONNECTIONS ATTACHED TO BOTTOM OF PIPING TO FACILITATE DRAINING OF LINES.
9. "TEMPORARY BLIND FLANGE WITH OR WITHOUT TEST CONNECTION) WILL BE INSTALLED ON PERMANENT FLANGE DURING LEAK TESTING."
10. ALL INSTRUMENTS ON THIS P&ID HAVE SYSTEM DESIGNATOR SI UNLESS OTHERWISE NOTED.
11. ALL INSTRUMENTS ON THIS P&ID HAVE SEPARATION GROUP DESIGNATOR B UNLESS OTHERWISE NOTED.

13
DCN 8803454

REFERENCES:

1. FOR PIPING & INSTRUMENT SYMBOLS SEE DRAWINGS 9F00001 & 9F00002.
2. WESTINGHOUSE DRAWING NO. 1207C17, SHEET 2 OF 4, RSEC NO. N-026-0254(1)00002-WN.

9812070099-03

BY	CKR	RE	DV	NA	SE	PE

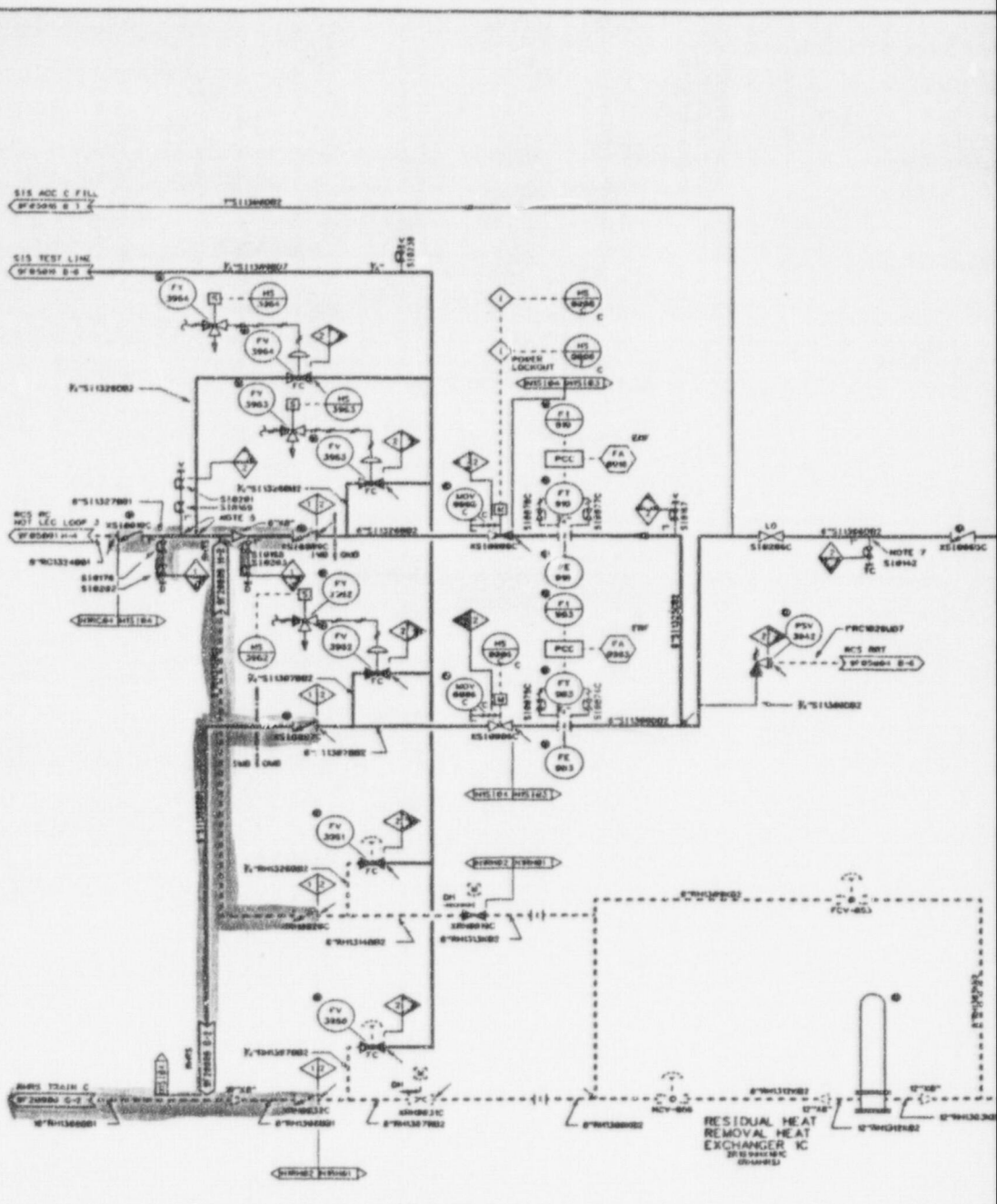
HOUSTON LIGHTING & POWER COMPANY
SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

PIPING AND INSTRUMENTATION DIAGRAM
SAFETY INJECTION SYSTEM

SCALE	DWG. NO.	REV.
NONE	5N129F05014 #1	13

VJM PRIORITY 1 DOC NO. 7U0705928 FJA158.131

130-1



NO.	ISSUE DATE	REVISION	BY	CKR	RE	DV	NA	SE	PE	NO.	ISSUE DATE
14	6-27-97	INCORP SCN 96-0454									
13	6-23-93	INCORP SCN 93-0774	SIGNATURES ON FILE								
12	3-9-98	INC DCN ND-064	SIGNATURES ON FILE								
11	8-25-89	INCORPORATED ECN 89-0863A	SIGNATURES ON FILE								
10	88-27-88	NLAP ASSUMES DESIGN CHANGE CONTROL AND INCORP MOD's 88-0478 & 88-0549	SIGNATURES ON FILE								
8-9	82-24-83	ISSUED FOR CONSTRUCTION	SIGNATURES ON FILE								

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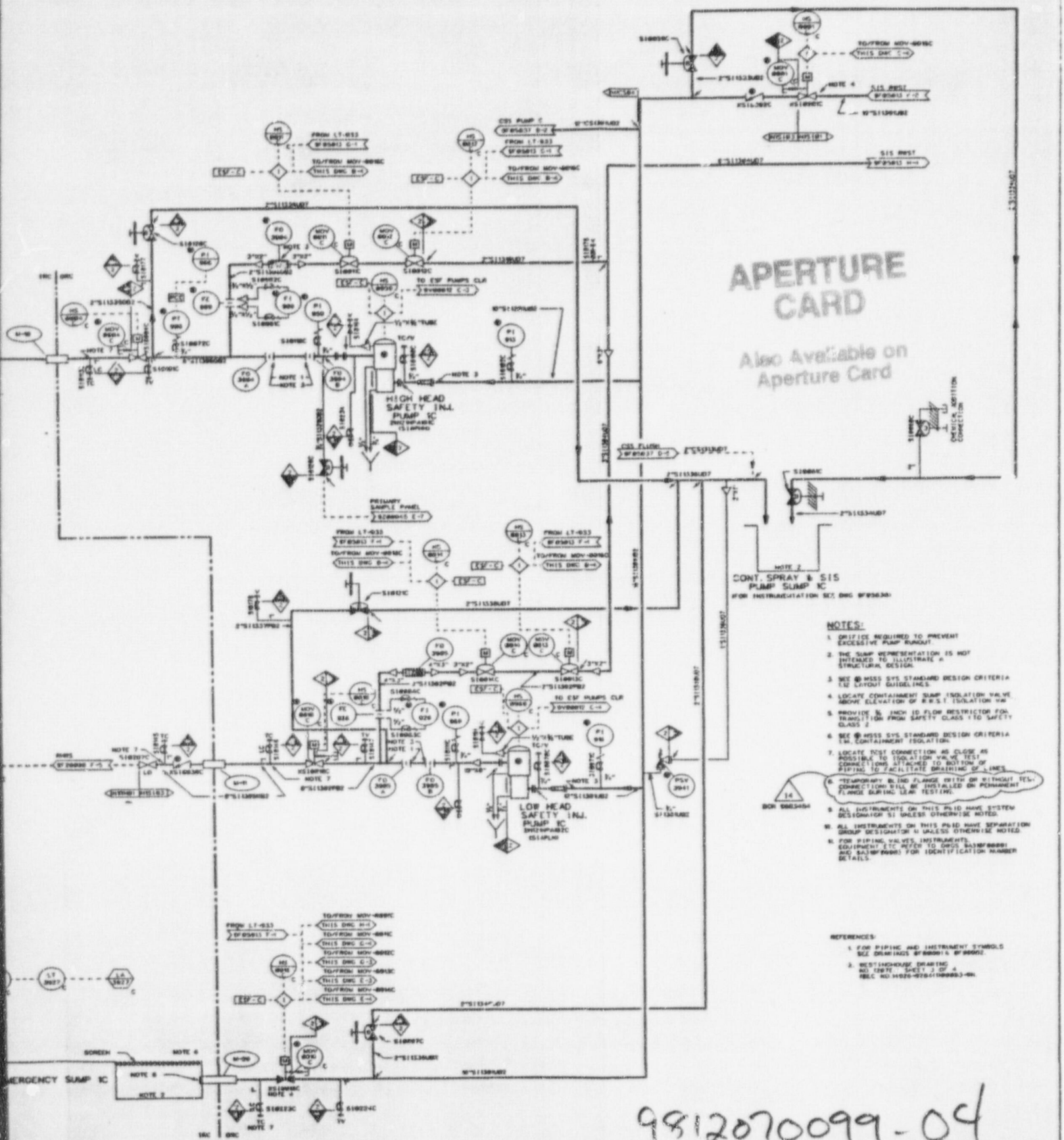


NOTES:

1. ORIFICE REQUIRED TO PREVENT EXCESSIVE PUMP RUNOUT.
2. THE SUMP REPRESENTATION IS NOT INTENDED TO ILLUSTRATE A STRUCTURAL DESIGN.
3. SEE Ⓦ NSSS SYS STANDARD DESIGN CRITERIA 1.12 LAYOUT GUIDELINES.
4. LOCATE CONTAINMENT SUMP ISOLATION VALVE ABOVE ELEVATION OF R.W.S.T. ISOLATION VA.
5. PROVIDE ⅜ INCH ID FLOW RESTRICTOR FOR TRANSITION FROM SAFETY CLASS 1 TO SAFETY CLASS 2
6. SEE Ⓦ NSSS SYS STANDARD DESIGN CRITERIA 1.14, CONTAINMENT ISOLATION.
7. LOCATE TEST CONNECTION AS CLOSE AS POSSIBLE TO ISOLATION VALVE TEST CONNECTIONS ATTACHED TO BOTTOM OF PIPING TO FACILITATE DRAINING OF LINES.
8. "TEMPORARY BLIND FLANGE (WITH OR WITHOUT TEST CONNECTION) WILL BE INSTALLED ON PERMANENT FLANGE DURING LEAK TESTING.
9. ALL INSTRUMENTS ON THIS P&ID HAVE SYSTEM DESIGNATOR SI UNLESS OTHERWISE NOTED.
10. ALL INSTRUMENTS ON THIS P&ID HAVE SEPARATION GROUP DESIGNATOR 4 UNLESS OTHERWISE NOTED.
11. FOR PIPING, VALVES, INSTRUMENTS, EQUIPMENT ETC REFER TO DWGS 5A319F00001 AND 5A319F00002 FOR IDENTIFICATION NUMBER DETAILS.

14
BCN 0003494

REFERENCES:

1. FOR PIPING AND INSTRUMENT SYMBOLS SEE DRAWINGS 9F000014 9F000052.
2. WESTINGHOUSE DRAWING NO 1287E SHEET 3 OF 4 RBLC NO 14026-9784(100003)-04.

9812070099-04

HOUSTON LIGHTING & POWER COMPANY
SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

PIPING AND INSTRUMENTATION DIAGRAM
SAFETY INJECTION SYSTEM

SCALE	DWG. NO.	REV.
NONE	5N129F05015 #1	14

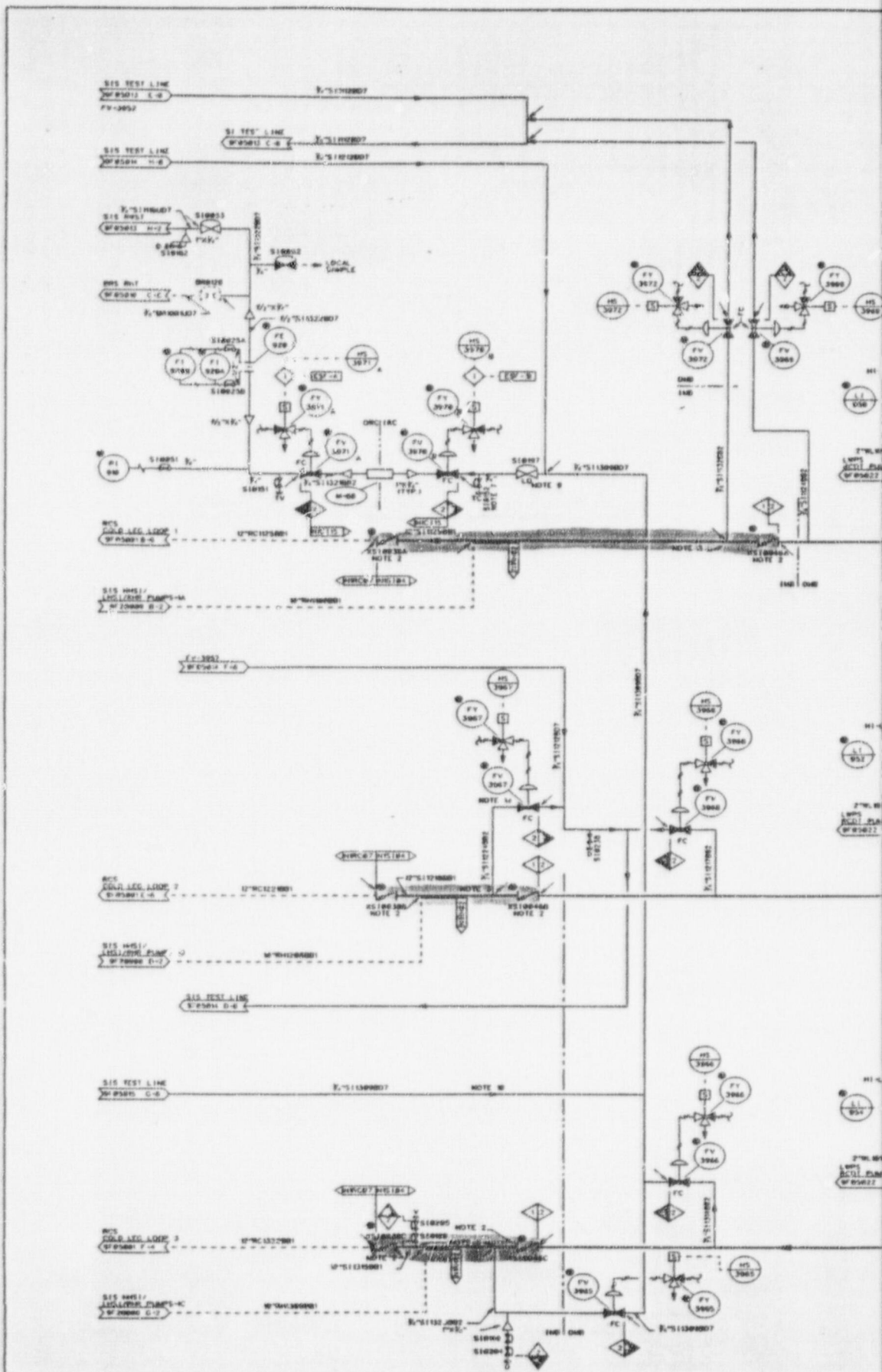
REVISION	BY	CKR	RE	DV	NA	SE	PE

PRIORITY 1

C00 NO D078826

FJA159.141

130-1



NO.	ISSUE DATE	REVISION	BY	CKR	RE	DV	NA	SE	PE	NO.	ISSUE DATE
5	5-24-95	REVISED CONTINUATION NO. (EDITORIAL)	LDD	ACS	SSH	–	–	Gen Elec			
4	6-24-93	INCORP ECN NO-2774	SIGNATURES ON FILE								
3	9-14-90	MAP ASSUMES DESIGN CHANGE CONTROL & INC ECN NO-1986	SIGNATURES ON FILE								
1-2	02/24/83	ISSUED FOR CONSTRUCTION	SIGNATURES ON FILE								

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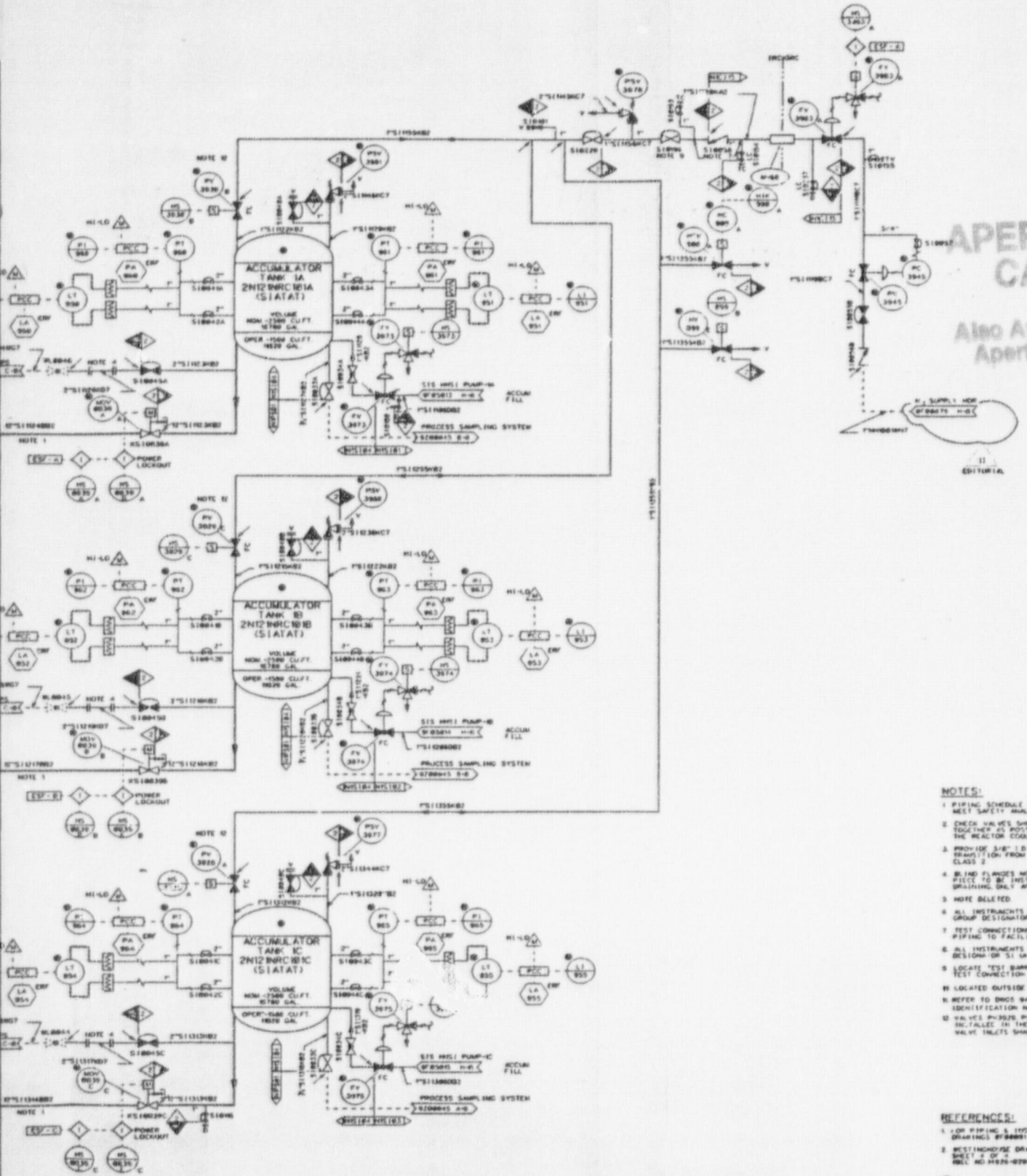

NOTES:

1. PIPING SCHEDULE M8 MUST BE USED TO MEET SAFETY ANALYSIS FLOW REQUIREMENTS.
2. CHECK VALVES SHOULD BE LOCATED AS CLOSE TOGETHER AS POSSIBLE AND AS CLOSE TO THE REACTOR COOLANT PIPE AS POSSIBLE.
3. PROVIDE 3/8" I.D. FLOW RESTRICTOR FOR TRANSITION FROM SAFETY CLASS 1 TO SAFETY CLASS 2.
4. BLIND FLANGES NORMALLY INSTALLED SPOOL PIECE TO BE INSTALLED DURING ACCUMULATOR DRAINING ONLY AFTER DEPRESSURIZATION.
5. NOTE DELETED.
6. ALL INSTRUMENTS ON THIS P&ID HAVE SEPARATION GROUP DESIGNATOR N UNLESS OTHERWISE NOTED.
7. TEST CONNECTIONS ATTACHED TO BOTTOM OF PIPING TO FACILITATE DRAINING OF LINES.
8. ALL INSTRUMENTS ON THIS P&ID HAVE SYSTEM DESIGNATOR SI UNLESS OTHERWISE NOTED.
9. LOCATE TEST BARRIER VALVE AS CLOSE TO TEST CONNECTION AS POSSIBLE.
10. LOCATED OUTSIDE THE MISSILE BARRIER.
11. REFER TO DWGS 9438F88091 AND 9438F88082 FOR IDENTIFICATION NUMBER DETAILS.
12. VALVES PV3020, PV3020 AND PV3938 ARE TO BE INSTALLED IN THE REVERSE DIRECTION; i.e. THE VALVE INLETS SHALL BE TOWARDS THE ACCUMULATOR.

REFERENCES:

1. FOR PIPING & INSTRUMENT SYMBOLS SEE DRAWING 9F88091 & 9F88082.
2. WESTINGHOUSE DRAWING NO. 1287E17 SHEET 4 OF 4 REV. NO. M826-0284[illegible]

9812070099-05

REVISION	BY	CKR	RE	DV	INA	SE	PE

HOUSTON LIGHTING & POWER COMPANY
SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

PIPING AND INSTRUMENT DIAGRAM
SAFETY INJECTION SYSTEM

SCALE	DWG. NO.	REV.
NONE	5N12 9F 85016 4F	11

PRIORITY 1 — QA QC NO. 10070028 — F.JAGE.111

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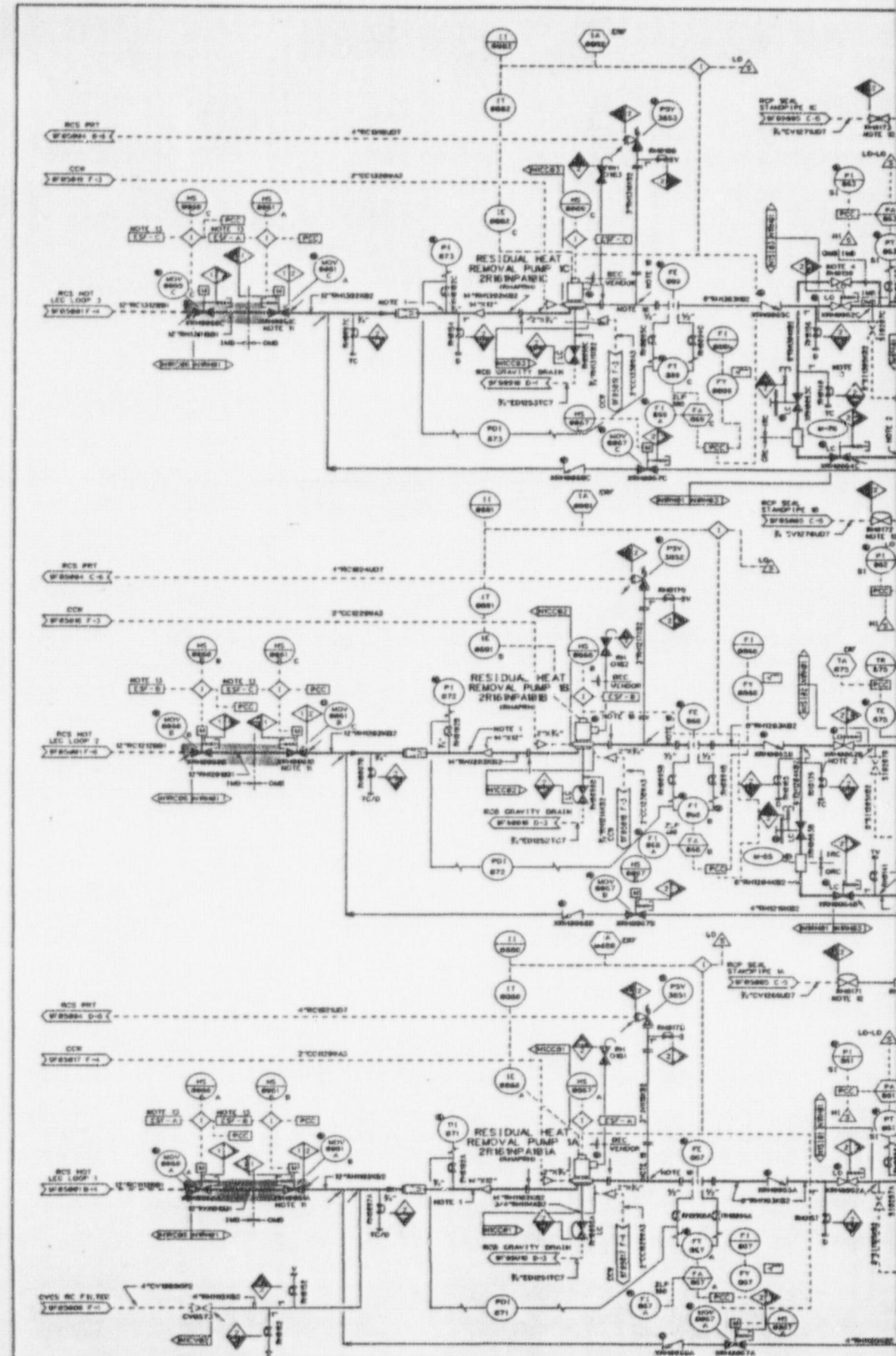
A B C D



NO.	ISSUE DATE	REVISION	BY	CKR	RE	DV	NA	SE	PE	NO.	ISSUE DATE
20	[illegible]	INCORP DCR 9607866	SIGNATURES ON FILE								
19	10-10-96	INCORP DCR 9601091	SIGNATURES ON FILE								
18	3-6-95	EDITORIAL (CORRECT LINE NUMBER)	SIGNATURES ON FILE								
17	8-1-94	INCORP DCR MD-3218	SIGNATURES ON FILE								
16	6-21-94	INCORP PCF 1P(3)-A AND EDITORIAL CORRECTIONS	SIGNATURES ON FILE								
0-15	07-01-93	ISSUED FOR CONSTRUCTION	SIGNATURES ON FILE								

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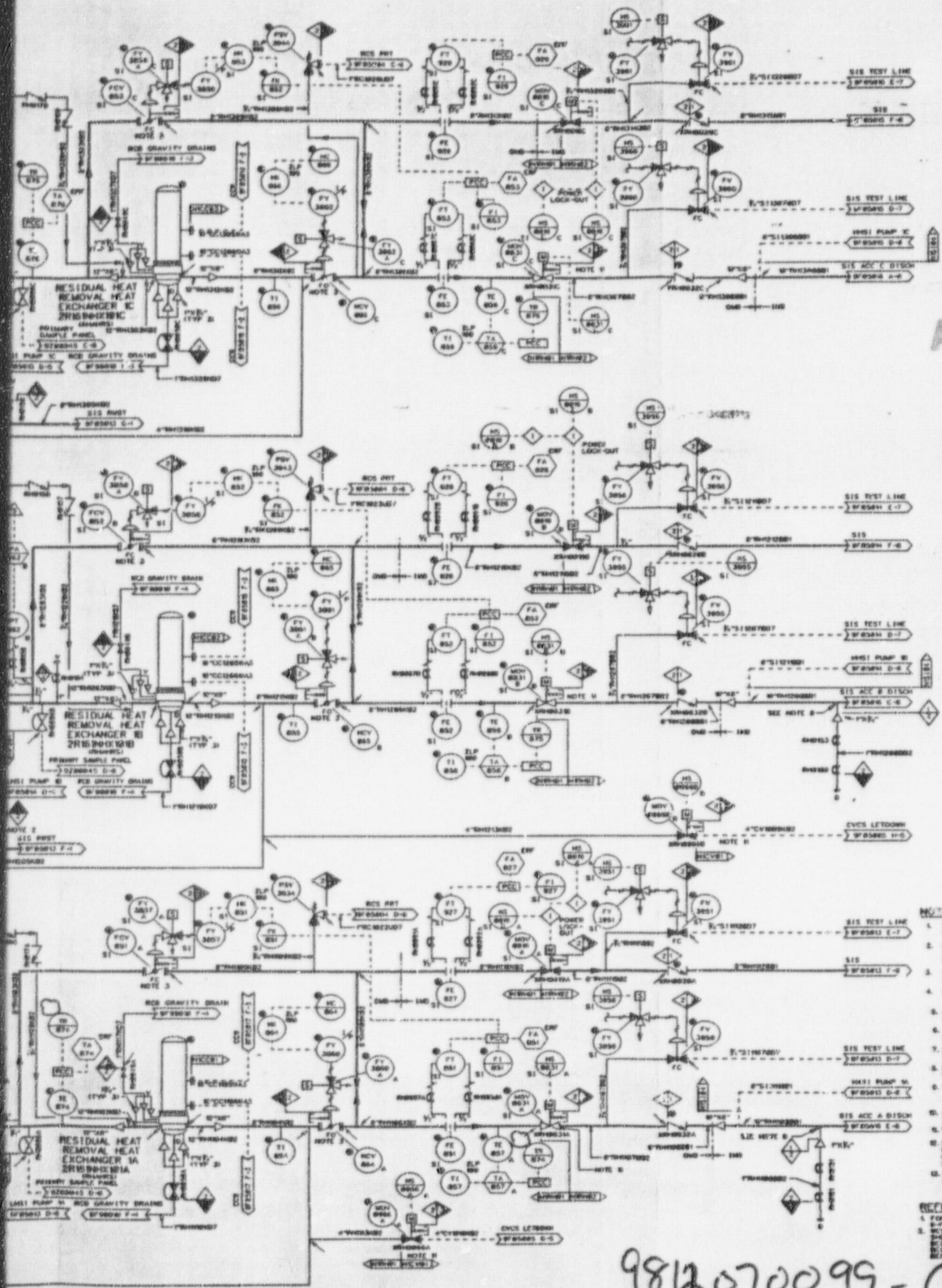

NOTES:

1. SEE [6] NEES SYS STANDARD DESIGN CRITERIA I.E. LAYOUT GUIDELINES.
2. LOCATE TEST CONNECTION AS CLOSE AS POSSIBLE TO 150 ELBOW W.C.F.L. TEST CONNECTIONS ATTACHED TO BOTTOM OF PIPING TO FACILITATE DRAINING OF LINES.
3. MATING FLANGE FOR VALVE MUST BE 300# GRADE F316 TO UE27 @ PIPE SPEC. S-67B04, REV.2 REQUIREMENTS.
4. LOCATE ORIFICE AS CLOSE AS POSSIBLE TO THE ANNUBAR TEST CONNECTION.
5. ALL INSTRUMENTS ON THIS P & ID HAVE SYSTEM DESIGNATOR 8H UNLESS OTHERWISE NOTED.
6. ALL INSTRUMENTS ON THIS P & ID HAVE SEPARATION GROUP DESIGNATOR A UNLESS OTHERWISE NOTED.
7. DELETED.
8. PROVIDE 2.0" ID FLOW RESTRICTOR FOR TRANSITION FROM SAFETY CLASS 1 TO SAFETY CLASS 2.
9. DELETED.
10. BREAKOUT FLANGES ARE REQUIRED FOR PUMP REMOVAL FOR MAINTENANCE.
11. THIS VALVE IS POWER LOCKED OUT AT TCT MCC.
12. STANDPIPE VALVE IS TO BE LOCKED CLOSED IN MODES 3 AND 4, AND IN MODE 4 WHEN THE RCS PRESSURE IS LESS THAN THE STATIC HEAD OF THE WATER COLUMN IN THE STANDPIPE.
13. THE AUTO CLOSURE FEATURE FOR MOV'S 8804A, B, C & 8809A, B, C HAS BEEN DELETED.

REFERENCES:

1. FOR PIPING & INSTRUMENT SYMBOLS SEE DRAWINGS 5-7.8000[1] & 5-7.8000[2]
2. WESTINGHOUSE DRAWING NO. 9E67E17 SHEETS 1,2 & 3.
   - [3] WEC NO. 9E67E-8804A1000001-001
   - [4] WEC NO. 9E67E-8804A1000002-001
   - [5] WEC NO. 9E67E-8804A1000003-001

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REVISION	BY	CHK	RE	DV	INA	DE	PE

HOUSTON LIGHTING & POWER COMPANY
SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION

PIPING AND INSTRUMENTATION DIAGRAM
RESIDUAL HEAT REMOVAL SYSTEM

SCALE	DWG. NO.	REV.
NONE	5R169F20000 01	28

PRIORITY 1 | QC NO. 0870020 | FJA2B6.201