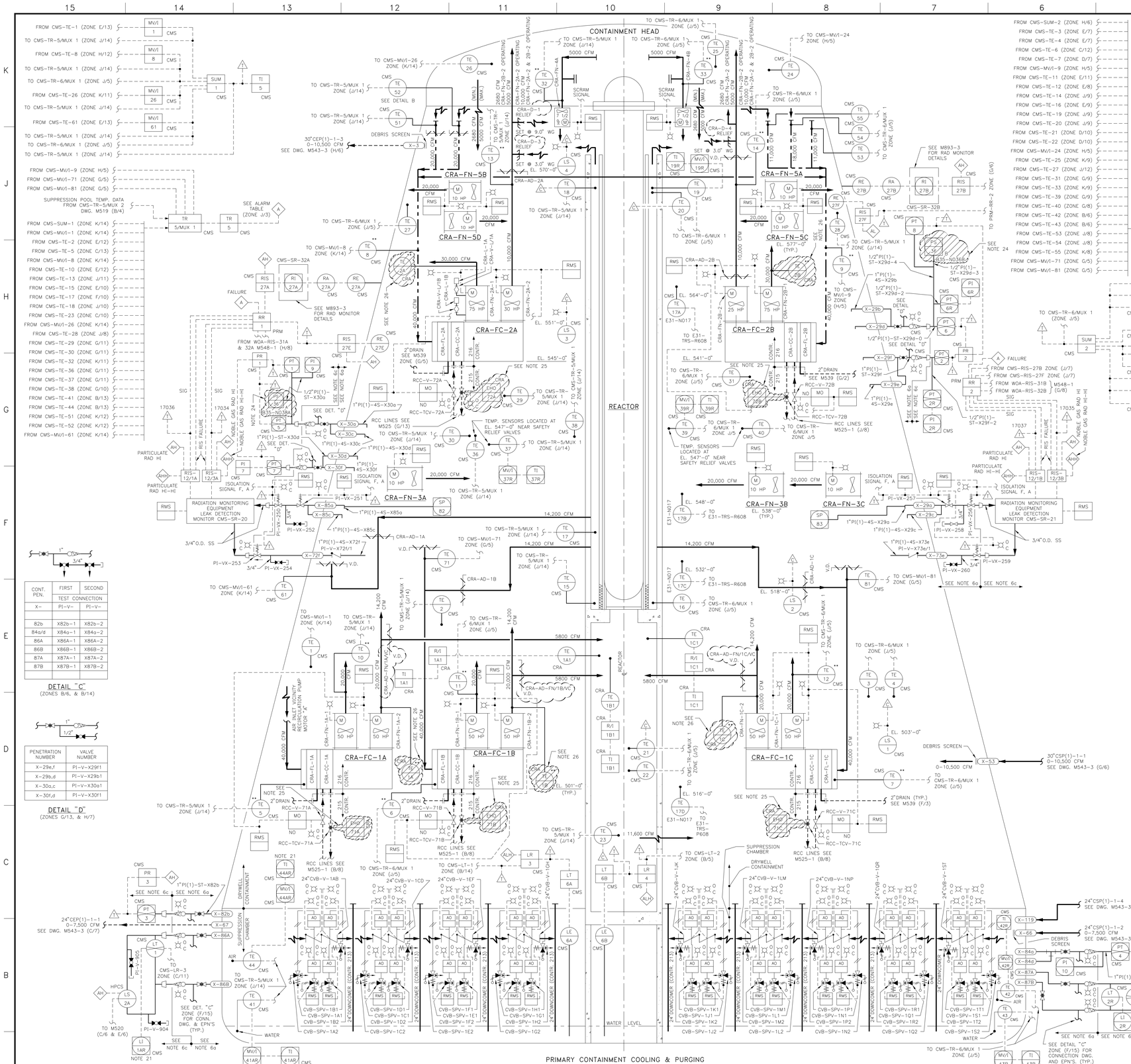

CONT. PEN.	FIRST	SECOND
	TEST CONNECTION	
X–	PI–V–	PI–V–
82b	X82b–1	X82b–2
84a/d	X84a–1	X84a–2
86A	X86A–1	X86A–2
86B	X86B–1	X86B–2
87A	X87A–1	X87A–2
87B	X87B–1	X87B–2

DETAIL "C"
(ZONES B/6, & B/14)

PENETRATION NUMBER	VALVE NUMBER
X–29e,f	PI–V–X29f1
X–29b,d	PI–V–X29b1
X–30a,c	PI–V–X30a1
X–30f,d	PI–V–X30f1

DETAIL "D"
(ZONES G/13, & H/7)

UNITS	NUMBER OF UNITS	
	NORMALLY OPERATING	STANDBY
1 LOWER LEVEL FAN COIL UNITS CRA–FC–1A, 1B, & 1C	2	1
2 UPPER LEVEL FAN COIL UNITS CRA–FC–2A, & 2B	1	1
3 LOWER LEVEL RECIRCULATING FANS CRA–FN–3A, 3B, & 3C	3	–
4 UPPER LEVEL RECIRCULATING FANS CRA–FN–5A, 5B, 5C, & 5D	4	–
5 CONTAINMENT HEAD AREA RETURN AIR FANS CRA–FN–4A, & 4B	1	1

CMS–TR–5, 6 ALARMS

D/W AVG. TEMP. (NORMAL OPER.)	(135°F)
D/W AVG. TEMP. (POST ACCIDENT)	(340°F)
AVG. SUPP. POOL TEMP.	(90°F)
AVG. SUPP. POOL TEMP.	(105°F)
AVG. SUPP. POOL TEMP.	(110°F)
AVG. SUPP. POOL TEMP.	(120°F)
WETWELL AIR TEMP.	(140°F)
LOCAL D/W TEMP. (NORM. OPER.)	(150°F)
UNDER VESSEL TEMP.	(165°F)
SCANNER FAILURE	–
T/C FAILURE	–

NOTES:

1. FOR ALL FAN COIL UNITS (FC), THE FILTERS ARE USED ONLY DURING CONSTRUCTION PERIOD.
2. ISOLATION SIGNAL CODES:
   A – REACTOR VESSEL LOW WATER LEVEL
   F – HIGH DRYWELL PRESSURE
   Z – HIGH RADIATION, REACTOR BUILDING VENTILATION SYSTEM
3. FOR FLOW DIAGRAM LEGEND, SYMBOLS, AND ABBREVIATIONS SEE DRAWING M501.
4. ALL INSTRUMENTS ON THIS DRAWING TO BE PREFIXED BY "CRA" UNLESS SPECIFICALLY NOTED OTHERWISE.
   EX. FI 2 IS IDENTIFIED AS CRA–FI–2
5. ALL PRESSURE AND FLOW INSTRUMENT ROOT VALVES SHALL BE 3/4" GLOBE VALVES UNLESS SPECIFICALLY NOTED OTHERWISE.
6. PIPING, VALVES, AND ASSOCIATED COMPONENTS ON THIS DRAWING SHALL BE CLASSIFIED AS FOLLOWS:
   a. PIPING AND VALVES WITHIN PRIMARY CONTAINMENT AND UP TO THE OUTERMOST ISOLATION VALVE OR AS OTHERWISE REFERENCED TO THIS NOTE:
      SEISMIC CATEGORY I
      QUALITY CLASS I
      CODE GROUP B
   b. PIPING AND VALVES BEYOND OUTERMOST ISOLATION VALVES (EXCEPT AS NOTED):
      SEISMIC CATEGORY II
      QUALITY CLASS II } ø
      CODE GROUP D
      SUPPORTED SEISMIC CATEGORY I IN THE REACTOR BUILDING.
   c. INSTRUMENT LINES AS NOTED
      SEISMIC CATEGORY I
      QUALITY CLASS I } ø
      CODE GROUP C
   ø EXCEPT AS NOTED ON M619 INSTRUMENT CONNECTION DIAGRAMS
7. DUCTWORK WITHIN THE PRIMARY CONTAINMENT SHALL BE CLASSIFIED AS FOLLOWS:
   a. HEAD AREA:
      SEISMIC CATEGORY I
      QUALITY CLASS I
   b. ALL OTHER AREAS (EXCEPT 10 GAUGE DUCT SUPPORTING CRA–D–1, –3 & –4 WHICH IS SEISMIC CATEGORY I, QUALITY CLASS II):
      SEISMIC CATEGORY II •
      QUALITY CLASS II
      • SUPPORTED SEISMIC CLASS I
8. CRA–FN–3A, B, C, 4A, B, 5A, B, C, AND D SHALL BE CLASSIFIED AS FOLLOWS:
   SEISMIC CATEGORY I
   QUALITY CLASS I
9. ALL PIPING SYSTEMS IDENTIFIED BY THE PREFIX "PI" SHALL BE SUPPLIED AND INSTALLED BY CONTRACT #220.
10. ALL VALVE TEST CONNECTIONS FOR LINES PENETRATING PRIMARY CONTAINMENT SHALL CONSIST OF 3/4" GLOBE VALVES, WHICH SHALL BE TAGGED AS FOLLOWS:
    CSP–V–800–(NUMBER)
    CEP–V–800–(NUMBER)
11. RADIATION MONITORING AND SAMPLE HANDLING SYSTEMS (CONTRACT 220). VALVES SHALL BE TAGGED AS FOLLOWS:
    a. BLOCK VALVE (•)–V–X(PENETRATION NO.)
    b. EXCESS FLOW CHECK VALVE (•)–EFC–X(PEN. NO.)
    c. CHECK VALVE (•)–CV–X(PENETRATION NO.)
    • USE PI FOR INSTRUMENT LINES AND PSR FOR SAMPLING LINES.
12. ALL TAGS FOR INSTRUMENT ROOT VALVES WILL BE FURNISHED AND INSTALLED BY OWNER.
13. ALL AIR QUANITITES INDICATED ARE ACTUAL CFM.
14. SEE M619–161 FOR THE CONSTRUCTION DETAILS OF THE QUALITY CLASS I INSTRUMENT AIR SYSTEM.
15. ••FURNISHED BY CONTRACT 216, INSTALLED BY OTHERS (CONTRACT 218).
16. ALL INSTRUMENT LINES ARE DESIGNATED BY CODE AND LINE NUMBER:
    a. EXAMPLE: LINES ORIGINATING OUTSIDE CONTAINMENT.
       1/2"PI(1)–ST – (H22–P021)–A6
       CODE DESIGNATION LINE NUMBER
    b. EXAMPLE: LINES ORIGINATING INSIDE CONTAINMENT.
       1/2"PI(1)–4S – X106
       CODE DESIGNATION LINE NUMBER
    c. EXAMPLE: CONTINUATION OF THE ABOVE LINE OUTSIDE CONTAINMENT IS DESIGNATED AS FOLLOWS, WITH LINE NUMBERS NOT SHOWN.
       1/2"PI(1)–ST–X106 – (H22–P021)–
       CODE DESIGNATION LINE NUMBER
17. DELETED.
18. THE BLADE SETTING OF THE FANS SHALL BE AS NOTED BELOW:
    a) CRA–FN–1A1, 1B1, 1C1 ------ #4.0
    b) CRA–FN–1A2, 1B2, 1C2 ------ #3.0
    c) CRA–FN–2A1, 2B1 ---------- #1.25
    d) CRA–FN–2A2, 2B2 ---------- #9.0
19. DAMPERS ARE PROVIDED IN (6)RFW, (1)LPCS, AND (1)HPCS OPENINGS THROUGH THE SAC. SHIELD WALL AT APPROXIMATE ELEVATION 560'–1" TO CONTROL COOLING AIR FLOW. THESE DAMPERS DO NOT PREVENT VENTING OF THE ANNULUS DURING AP.
20. AN ACCEPTABLE OPTION TO ONE OR BOTH 1/2" VALVES IS INSTALLATION OF A SOCKET WELDED CAP OR COUPLING/PLUG ONTO THE UNTERMINATED 1/2" TUBE STUB. COMPLY WITH THE FOLLOWING IF THIS OPTION IS USED:
    a) BAR STOCK MATERIAL: SA 479, TYPE 304 (FOR CAP OR PLUG).
    b) COUPLING: 316 STAINLESS STEEL, CAJON #SS–8–TSW–6 OR EQUIVALENT.
    c) INCREASE STUB LENGTH 4" TO 6" MORE THAN WHAT IS NECESSARY FOR INSTALLATION OF VALVE(S).
21. THESE INSTRUMENTS ARE LOCATED ON THE ALTERNATE REMOTE SHUTDOWN PANEL E–CP–ARS.
22. VALVES CSP–V–93, CSP–V–96, CSP–V–97, & CSP–V–98 ARE INSTALLED IN THE REVERSE DIRECTION. ACCIDENT FLOW TO THESE VALVES IS FROM PRIMARY CONTAINMENT.
23. VACUUM RELIEF FROM SECONDARY CONTAINMENT AT 0.5 PSID WITH THE SUPPRESSION CHAMBER PRESSURE.
24. EQUIPMENT SHOWN IN CROSSHATCH IS SPARED IN PLACE.
25. VALVE OPERATOR HAS BEEN DEACTIVATED AND SPARED IN PLACE. VALVE IS IN THE OPEN POSITION AND FLUID DRAINED FROM OPERATOR.
26. TEMPERATURE ELEMENT HAS BEEN DEACTIVATED AND SPARED IN PLACE.

LEGEND:

1. ALL VALVES (EXCEPT THOSE ON INSTRUMENT LINES) SUFFIXED WITH A (V) DENOTE A 3/4" VENT VALVE EXCEPT AS NOTED.
2. ALL VALVES (EXCEPT THOSE ON INSTRUMENT LINES) SUFFIXED WITH A (D) DENOTE A 3/4" DRAIN VALVE.
3. ALL VALVES SUFFIXED WITH A (TH) DENOTE A THROTTLED VALVE.

REFERENCES TO CONTRACT NUMBERS, SUCH AS 215, 206, 220, FOUND IN THE NOTES ON THIS DRAWING REFER TO ORIGINAL CONSTRUCTION DESIGN REQUIREMENTS.

CURRENT DESIGN REQUIREMENTS ARE DOCUMENTED IN THE STATION DESIGN SPECIFICATIONS AND ACTIVE CONTRACT SPECIFICATIONS WHICH STILL APPLY.

FSAR FIG.

REV	DATE	DESCRIPTION	DWN	CHK	APVD
79	4–11–02	REDRAWN AND REVISED PER 01425–005, 01458–008 & 01424–017	BLS	KL	SRP
80	2–3–03	REV PER 01321–207 (C/1–2; C–D/8–13; G–J/7–9).	NT	KB	DRJ
81	12–16–04	REV PER 03159–006 (J–K/9,11), 03159–007 (E/9–12), 03159–008 (G–H/1–2).	JFT	HL	DRJ

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	SIGNATURE	DATE
APPROVED	SCOTT PAYNE	4–11–02
CHECKED	K LUCAS	7–31–01
DRAWN	BL STAFFORD	11–17–00

TITLE: FLOW DIAGRAM – REACTOR BLDG. PRIMARY CONTAINMENT COOLING AND PURGING SYSTEM

SCALE: NTS | DWG NO. M543–1 | REV. 81

SERVER84\MECH\M500\M543–1.DWG

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