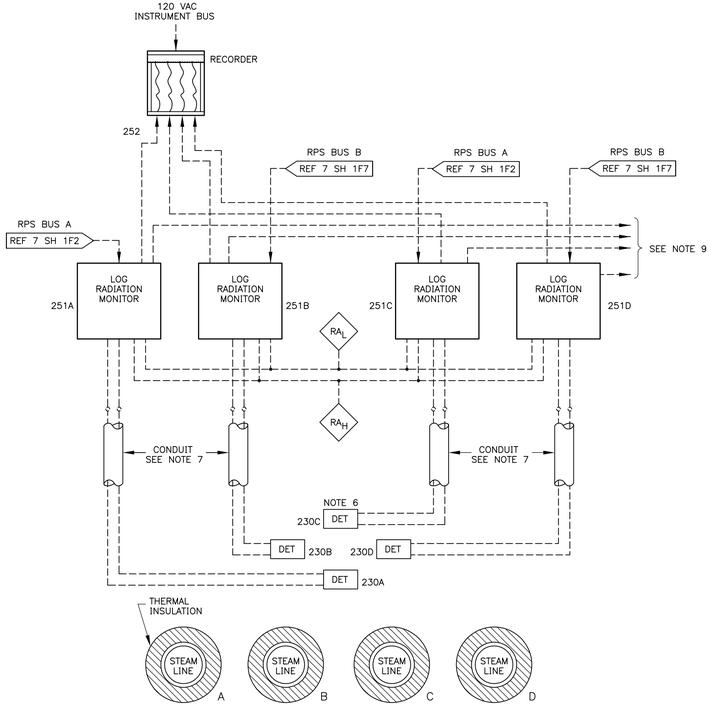
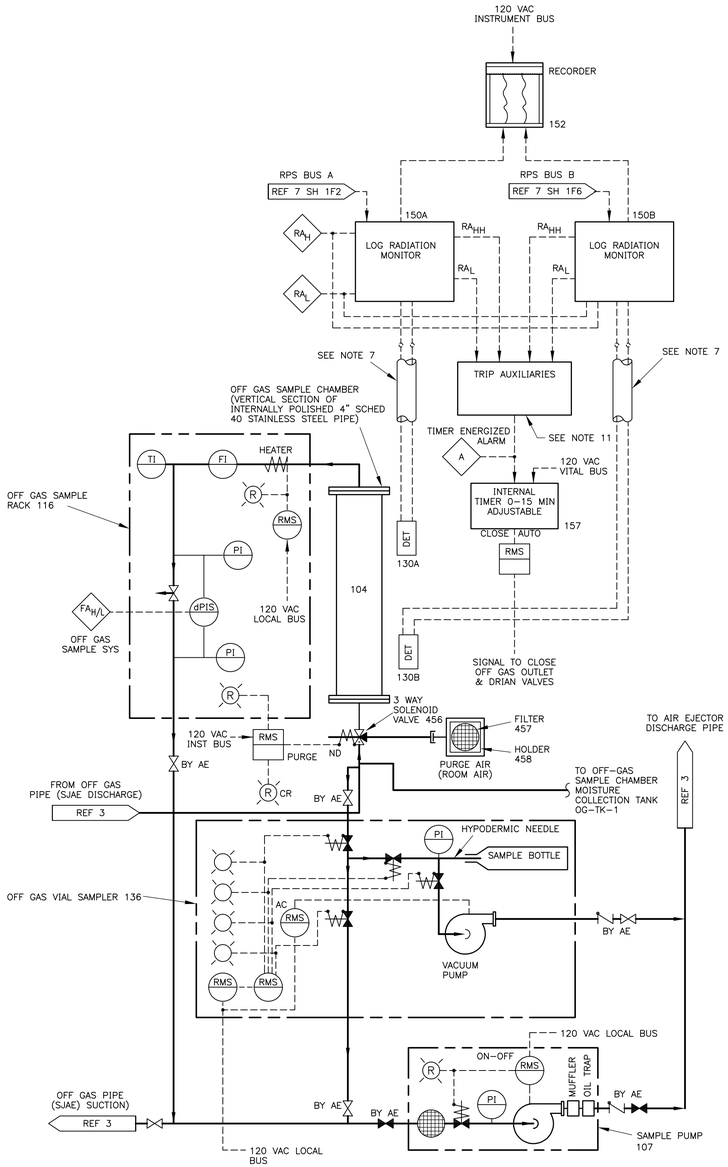
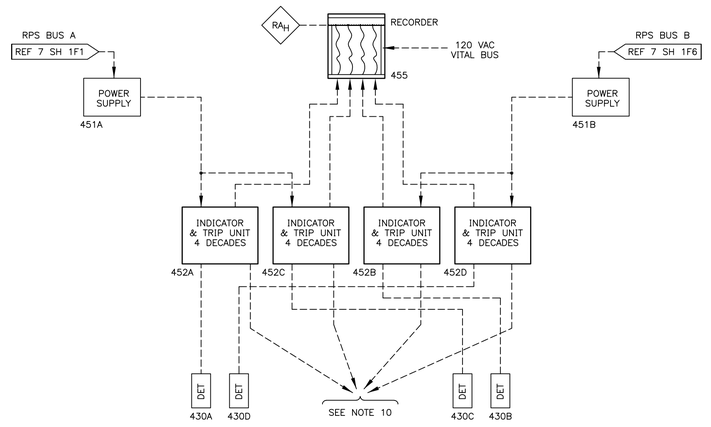


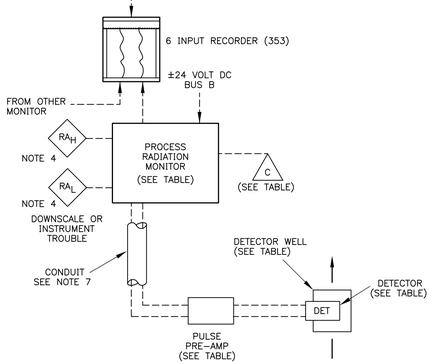
MAIN STEAM LINE RADIATION MONITORS



OFF GAS RADIATION MONITORS & SAMPLERS

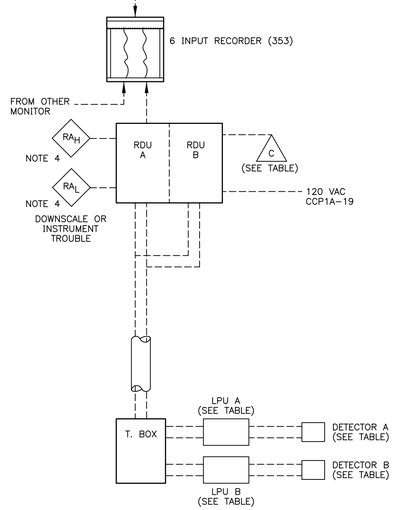


REACTOR BUILDING
VENTILATION EXHAUST PLENUM
RADIATION MONITOR



PART DESCRIPTION	REACTOR BUILDING CLOSED COOLING EFFLUENT MONITOR	LOCATION
DETECTOR WELL	302	PROCESS PIPE
DETECTOR	334	PROCESS PIPE
PULSE PRE-AMP	335	LOCAL AREA
PROCESS RAD MONITOR	352	MAIN CONTROL ROOM
RECORDER	353	MAIN CONTROL ROOM
PMIS POINT	N400	MUX CAB 9-80

REACTOR BUILDING CLOSED COOLING
LIQUID PROCESS RADIATION MONITOR



PART DESCRIPTION	SERVICE WATER EFFLUENT MONITOR	LOCATION
DETECTOR	332A, 332B	PROCESS PIPE
LPU	332A, 332B	LOCAL AREA
RDU	351A, 351B	MAIN CONTROL ROOM
RECORDER	353	MAIN CONTROL ROOM
PMIS POINT	N056, N057	MUX CAB 9-80

SERVICE WATER
LIQUID PROCESS RADIATION MONITOR

NOTES:

1. THE OFF GAS VENT PIPE GAS SAMPLE LINE BY AE SHALL BE 1" X 0.058" WALL THICKNESS SEAMLESS STAINLESS STEEL TUBING. THE TUBING MINIMUM BEND RADIUS SHALL BE 20". THE TUBING LENGTH SHALL BE JOINED WITH SWAGELOK TYPE 1610-6-316 UNIONS. THE TUBING SHALL SLOPE SO THAT CONDENSATE WILL RUN TO DRAIN TEE.
2. REMOVABLE SECTION SHALL BE PROVIDED NEAR THE ISOKINETIC PROBE FOR THE INSERTION OF A CHARCOAL FILTER HOLDER. THE FITTINGS ETC. SHALL PROVIDE SMOOTH TRANSITIONS WITHOUT DISCONTINUITIES OR REDUCING THE CROSS-SECTIONAL AREA OF THE FLOW STREAM.
3. UNION TEE SWAGELOK TYPE 1610-6-316.
4. ALARMS ARE ACTUATED BY RELAYS IN TRIP AUX UNIT PART 355.
5. ALL EQUIP AND INSTRUMENTS ARE PREFIXED BY 17 WHICH IS PART 17 ON THE MASTER PARTS LIST.
6. THE DETECTORS (230) SHALL BE LOCATED AS CLOSE AS PRACTICAL TO THE PRIMARY CONTAINMENT. THE DETECTORS SHALL BE ARRANGED SUCH THAT EACH DECTOR WILL VIEW ALL STEAM LINES WITH APPROXIMATELY THE SAME RESPONSE. THE DETECTOR OR DETECTOR ASSEMBLY MAY BE FASTENED TO A ROD OR A PIPE AND INSERTED INTO SEALED PIPE WELLS FROM OUTSIDE THE STEAM TUNNEL. CAREFULLY ROUTE CABLES TO MINIMIZE HEAT EXPOSURE. NO LEAD SHIELDING IS REQUIRED.
7. ALL CABLE SHALL COMPLY WITH GE ENGR SPEC REF A.
8. FOR LOCATION AND IDENTIFICATION OF INSTRUMENTS, SEE INSTRUMENT DATA SHEET LISTED IN MPL FOR EACH INSTRUMENT.
9. ONE HIGH RADIATION OR INOPERATIVE TRIP OUT OF TWO IN TRIP SYSTEM "A" AND ONE HIGH RADIATION OR INOPERATIVE TRIP OUT OF TWO IN THIS SYSTEM "B" SHALL TURN OFF MECHANICAL VACUUM PUMP AND CLOSE MECHANICAL LINE VALVE (REF 3). ANY ONE HIGH RADIATION SHALL ALARM (RA_{HH}).
10. IN EACH DIVISION, THE SIGNAL FROM ONE UPSCALE TRIP OR TWO DOWNSCALE TRIPS SHALL TRIP THAT DIVISION. TRIPPING OF BOTH DIVISIONS SHALL:
    A. SHUTDOWN REACTOR BUILDING VENTILATION SYSTEM AND VALVE OFF REACTOR BUILDING.
    B. INITIATE STANDBY GAS TREATMENT SYSTEM.
    C. CLOSE PRIMARY CONTAINMENT PURGE AND VENT VALVES.

    ANY ONE UPSCALE TRIP SHALL ALARM (RA_{HH}).

    ANY ONE DOWNSCALE TRIP SHALL ALARM (RA_L).

    UPSCALE TRIPS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PRIMARY CONTAINMENT ISOLATION SYSTEM.
11. IF A HIGH-HIGH OR DOWNSCALE OR INOP TRIP OCCURS IN EACH OF THE TWO CHANNELS, THE OFFGAS TIMER WILL INITIATE AND A CONTROL ROOM ANNUNCIATOR WILL ACTIVATE. THE TIMER WILL IN TURN INITIATE AN OFFGAS ISOLATION. ANY ONE HIGH, DOWNSCALE OR INOP TRIP WILL GIVE AN ALARM IN THE CONTROL ROOM.

REFERENCE ENG SPECS:

A.	MPL	1-11	DESIGN SPECIFICATION FOR INSTRUMENT WIRE AND CABLE.
B.	MPL	17-1	DESIGN SPECIFICATION RADIATION MONITORING OF PROCESS FLUIDS AND GASES.
C.	MPL	1-112	DESIGN SPECIFICATION, SAMPLING OF PROCESS FLUIDS AND GASES.

REFERENCE DRAWINGS:

		MPL NO.
1.	PIPING AND INSRTUMENT SYMBOLS	104R900
2.	PLANT DC AND INST. AC/DC SYS ONE LINE DIAG.	1-63
3.	FLOW DIAGRAM OFF GAS SYSTEM HOLDUP	1-107-1
4.	P & ID RADWASTE SYSTEM	20-0
5.	FCD NUCLEAR BOILER MISC SYSTEM	2-203
6.	P & ID REACTOR BLDG. CLOSE COOLING WATER SYS.	BY AE
7.	REACTOR PROTECTION SYSTEM IED	5-0

LEGEND:

SJAE	STEAM JET AIR EJECTOR
DET	ALARM DETECTOR
FC	FAIL CLOSE
RA_H	RADIATION ALARM HIGH
RA_L	INSTRUMENT TROUBLE
RA_{HH}	RADIATION ALARM HIGH HIGH

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INFORMATION ONLY

CADD DRAWING
DO NOT REVISE MANUALLY

FOR PREVIOUS REVISIONS, SEE SUPERSEDED CARDS.

REVISIONS BY N.P.P.D.

NO.	REVISIONS	DFT	CKD	APP	DATE
N08	CED 6005412 (DCN 01-0906)	RAC	RHG	KG	11-2-02
N09	CED 6008680 (DCN 02-0683)	RAC	RHG	KG	1-20-03
N10	CED 6010281 (DCN 03-0605)	RAC	RHG	KG	4-23-04
N11	CED 6010281 (DCN 03-0784)	RAC	RHG	KG	4-23-04
N12	CED 6005412 (DCN 03-1579)	jdc	RHG	KG	4-23-04
N13	CED 6005412 (DCN 04-0643)	RAC	RHG	KG	10-20-04

REVISIONS
NO.

SIGNIFICANT NUMBER							
GROUP	1	2	3	4	5	6	

COOPER NUCLEAR STATION
PROCESS RADIATION
MONITORING SYSTEM

DRAWN TRU	DATE 4/5-94
CHECKED JAC	DATE 6-14-94
APPROVED WCF	DATE 6-14-94
FILMED	

GENERAL ELECTRIC

719E479BB SH 1

REVISION N13

CADD FILE: C0014050