REF. 3

H.A.F.A. INTERNATIONAL, INC.
7545 Central Industrial Drive
Riviera Beach, Florida 33419
(305) 848-5252

October 7, 1987
HII-87-1227
40-40-7
DCC-002 SCOPE

Mr. George Johnson
Nuclear Regulatory Commission
Material Branch
7920 Norfolk Avenue
Mail Stop P-842
Bethesda, MD 20814

SUBJECT: Informal update meeting with NRC Staff Members, Bethesda, MD.

Dear Mr. Johnson:

The following is a recap of the topics that were discussed during our September 30, 1987 meeting.

Attendees:

G. Johnson,	NRC	M. Turnbow,	TVA
W. Hazelton,	NRC	R. Jones,	TVA
D. Smith,	NRC	F. Askwith,	HAFA
G. Gibbs,	TED	H. Askwith,	HAFA
E. Caba,	TED		

The following informational topics where Instrumented Inspection Techniques (IIT) will be utilized, was presented by H.A.F.A. Int'l. Inc.:

A. Main Steam Line Testing.

The testing on the Main Steam Lines will be performed while the plant is coming up to mode 3. Standard HAFA Acoustic Emission Leak Testing will be utilized during this test and will be supplemented with a VT-2 examination. (See Attachment A and A1)

B. Main Steam Blowdown.

The Main Steam Blowdown testing will be performed at Mode 4. Standard HAFA Acoustic Emission Leak Testing will be utilized during this test and will be supplemented with a VT-2 examination. (See Attachment B)

C. Main Feedwater

The Main Feedwater Testing will be performed at Mode 4. Standard HAFA Acoustic Emission Leak Testing will be utilized during this test and will be supplemented with a VT-2 examination. (See Attachment C)

8804200091 2pp.

D. Service Water.

The Service Water System Testing will be performed during normal plant operation utilizing IIT and will be supplemented with a VT-2 examination. (See Attachment D)

E. Component Cooling System.

This test will be performed on the main header during Mode 6, utilizing IIT and will be supplemented with a VT-2 examination and the balance of the system will be performed during normal plant operation. (See Attachment E)

F. Decay Heat System.

The Decay Heat System Testing will be performed during Mode 6, utilizing IIT and will be supplemented with a VT-2 examination. (See Attachment F)

G. Residual Heat Removal System.

The R.H.R. Valve & Piping Testing will be at 500 psig utilizing IIT, and supplemented with a VT-2 examination while the plant is coming up to Mode 3. (See Attachment G)

H. Non Isolation Valves.

Piping which has valves that do not perform an isolation function (e.g. governor valves) will be treated as a opened ended system with no leak testing being performed on those valves. (No sketch necessary, generic statement)

We have attached color coded sketches showing the areas of testing (e.g. CCS main header) that will be performed on the systems listed above. It should also be noted that any applicable minor valve repairs or replacement will also be inspected by Volumetric Examination as required by the construction Code of the respective plant.

Very truly yours,

H. H. Askwith
Vice President

HHA/dm

cc:

G. Gibbs	TED	W
E. Caba	TED	W/O
J. Ewald	TED	W
D. Weakland	DLC	W
D. Grabski	DLC	W/O
K. Grada	DLC	W/O

H.A.F.A. INTERNATIONAL, INC.
7545 Central Industrial Drive
Riviera Beach, Florida 33419
(305) 848-5252

November 12, 1987
HII-87-1255
DLC-002 Scope

Mr. D. Weakland
Duquesne Light Company
Beaver Valley Nuclear Power Station
Post Office Box 4, Mail Drop BV-SAPS
Shippingport, Pennsylvania 15077

SUBJECT: Trip Report on Meeting with Nuclear Regulatory Commission Staff, Bethesda, Maryland on November 5, 1987

Dear Mr. Weakland:

A meeting was held with NRC staff members in Bethesda, Maryland on November 5, 1987. Those in attendance were as follows:

NRC	HAFA
G. Johnson	F. Askwith
W. Hazelton	H. Askwith

The topics of discussion were reduction of test holding time on the Main Steam, Main Feedwater and Blowdown systems from two hours to ten minutes. The NRC staff members in the meeting agreed that the holding time of two hours was not warranted when performing IIT on the above systems.

Since the Safety Evaluation Report in Topical Report HAFA 135 (P-A) states a two hour holding time, DLC will have to file a letter to the NRC staff with full justification for the holding time reduction.

HAFA will draft the letter for DLC to forward to the NRC on your letterhead justifying the ten minute hold as an acceptable alternative to the two hour hold. This task assignment was discussed and confirmed by Mr. D. Grabski.

Sincerely,

H. H. Askwith
Vice President

HHA/er

cc: Mr. G. Johnson, NRC
Mr. W. Hazelton, NRC
Mr. D. Grabski
Mr. K. Grada

H.A.F.A. INTERNATIONAL,
7545 Central Industrial Drive
Riviera Beach, Florida 33419
(305) 848-5252

MEMORANDUM

February 6, 1986
HII-86-1134-T
PO# 026-Q-93872A-NB

TO: J. Lingenfelter

FROM: Jon Hallem

SUBJECT: Meeting with the NRC, Bechesda, Md., February 4, 1986

IN ATTENDENCE:

Mr. George Johnson - NRC
Mr. Horace Shaw - NRC
Dr. C. Y. Cheng - NRC
Mr. Herbert Askwith - HAFA
Mr. Jon Hallem - HAFA

The purpose of the meeting was to discuss the implementation of IIT to the Main Steam supply of the Auxiliary Feedwater turbines.

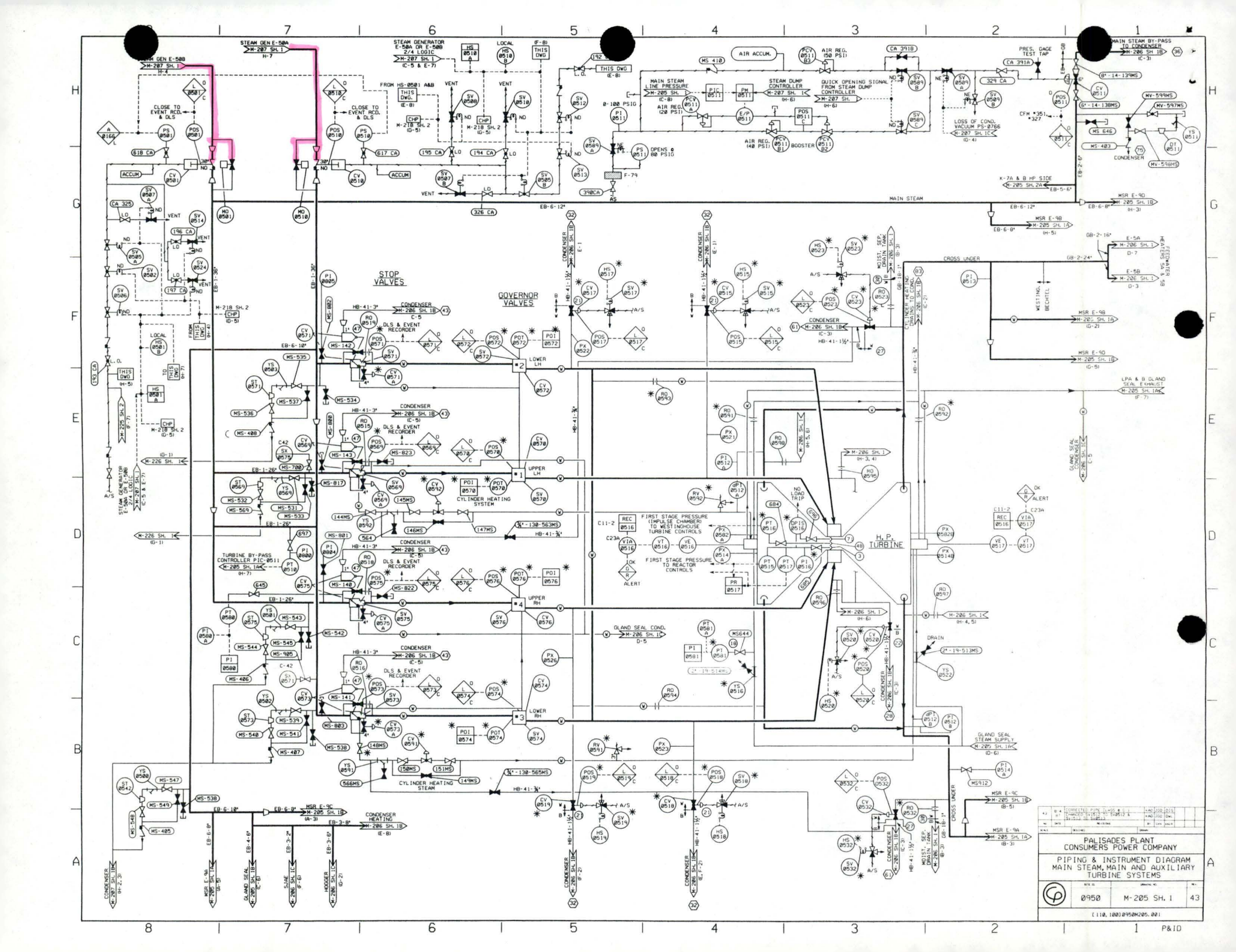
Mr. Askwith was concerned that the HAFA Topical Report 135 (P)(A) did not address the use of IIT for the testing of the replacements and modifications completed on the Main Steam supply of the Auxiliary Feedwater turbines. This testing would involve two (2) phases. The first would check the leak tightness of the check valves in the subsystem. This would be performed by injecting water into the subsystem at a pressure of 1050 psi and measuring the leakage past the check valves. The second phase would use the steam from the Steam Generator during Mode 3 (Hot Stand By) to pressurize the subsystem to normal operating pressure. This would be followed by using IIT and VT-2 examination to test the system piping.

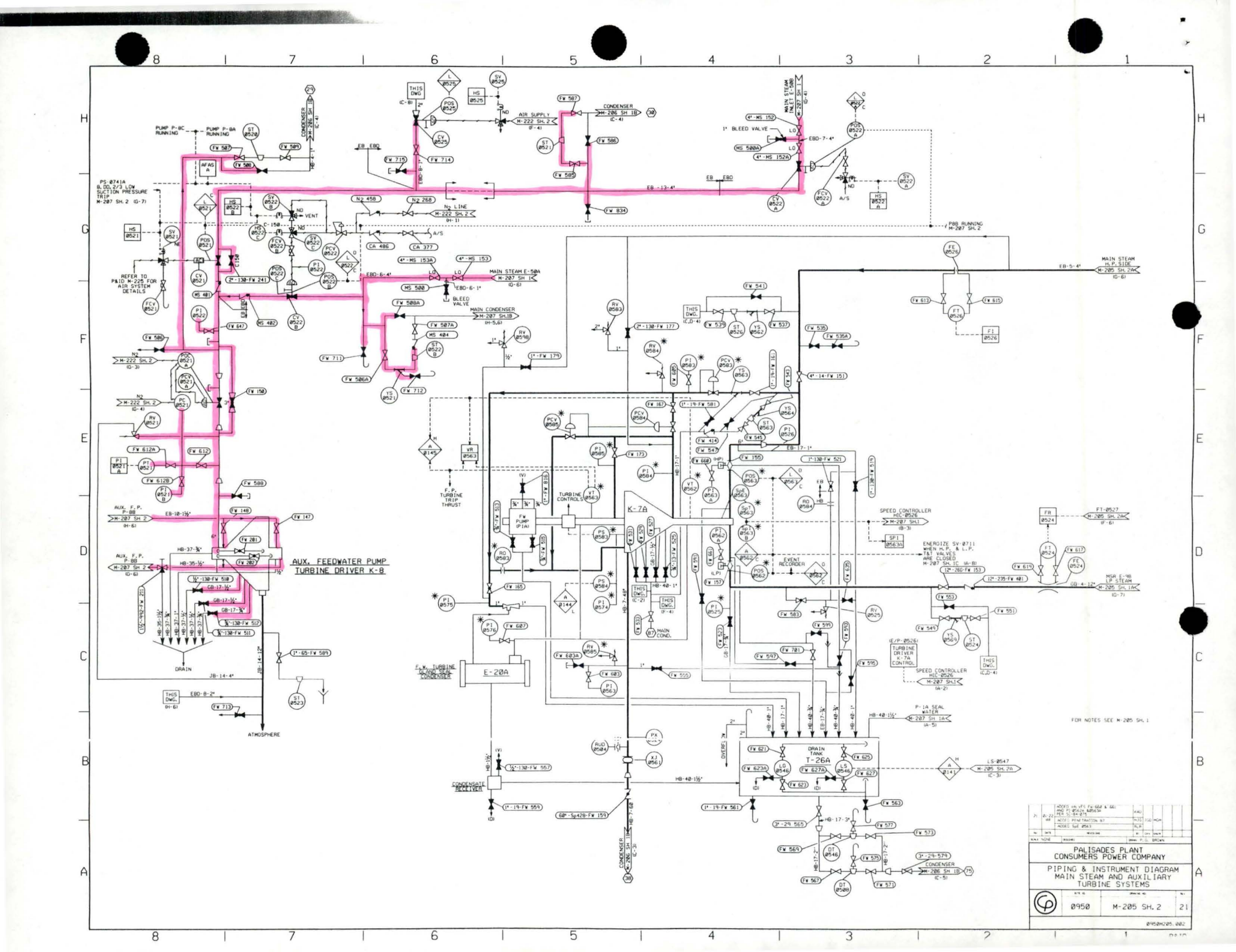
In answer to Mr. Askwith's concerns, Mr. Johnson stated that the HAFA Topical Report 135 (P)(A) covered the ASME Section XI requirements for pressurizing the subsystem since the replacements and modifications are required to be pressure tested. He also suggested that Toledo Edison write an information letter to the NRC describing the methods of testing that will be used for this test.

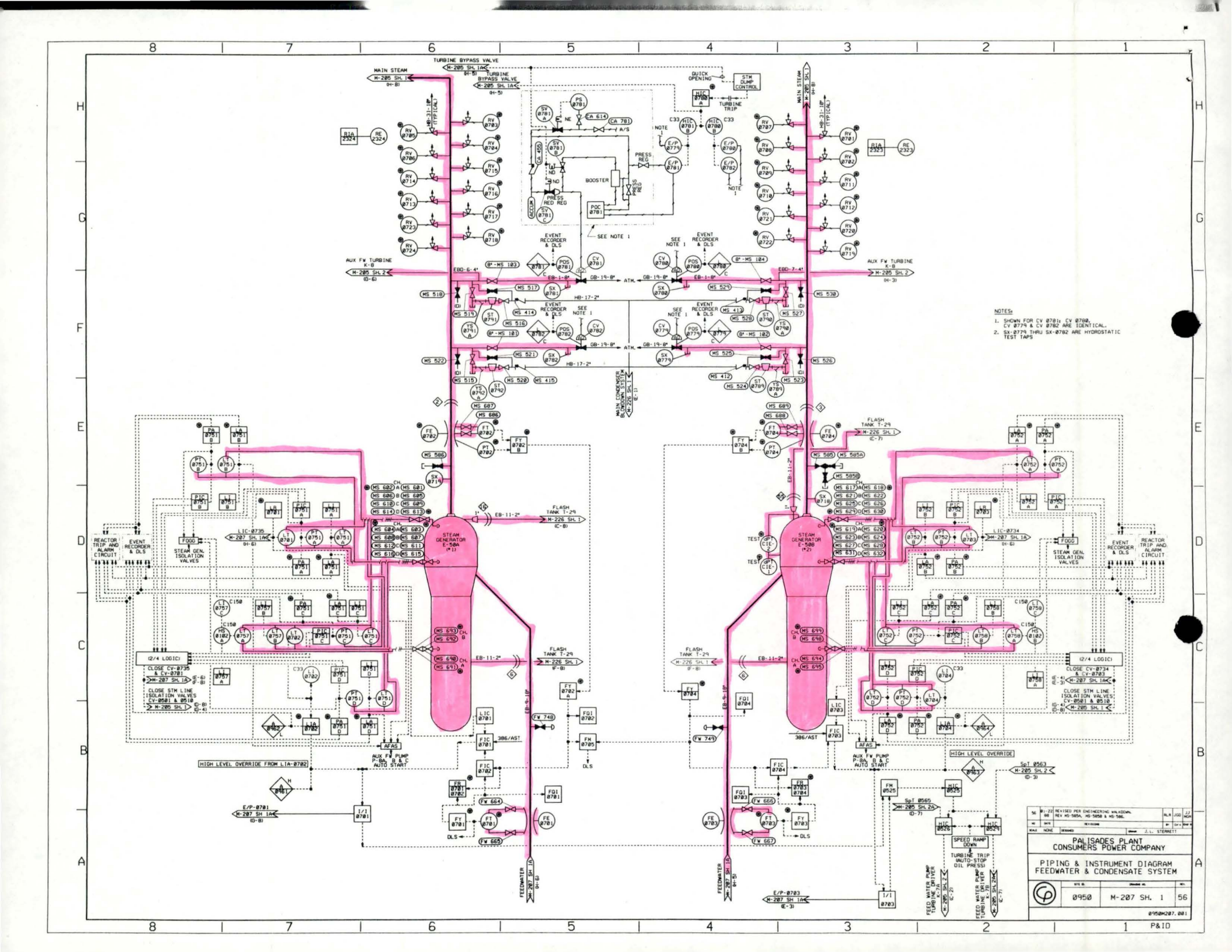
The NRC also suggested that they want a three (3) hour seminar to be held with HAFA and their revieving staff to discuss code requirements versus practical testing of pumps, valves, and systems concerning pressure testing and leakage limits of LWR's. HAFA will notify the NRC as to the date of this seminar.

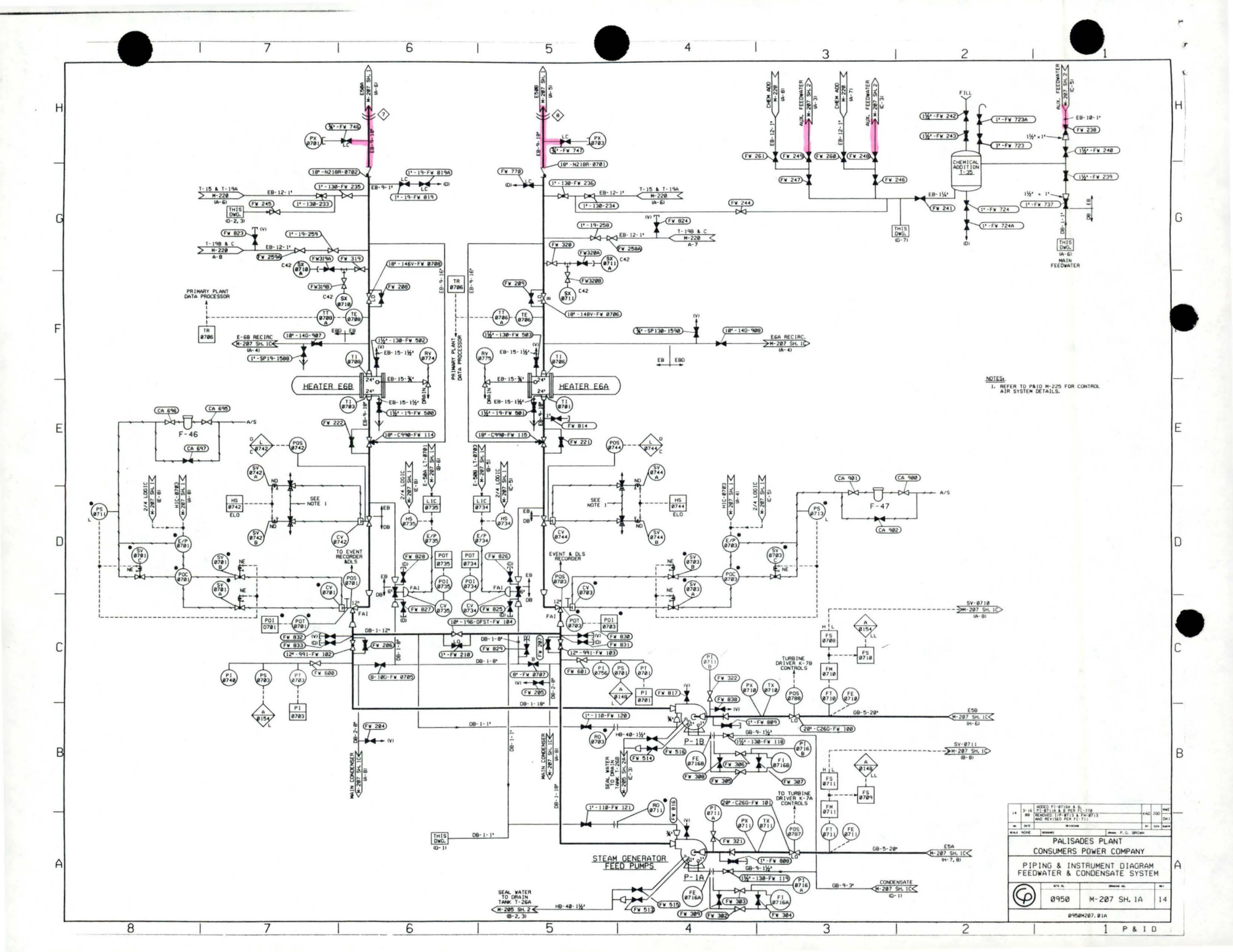
JH/mw

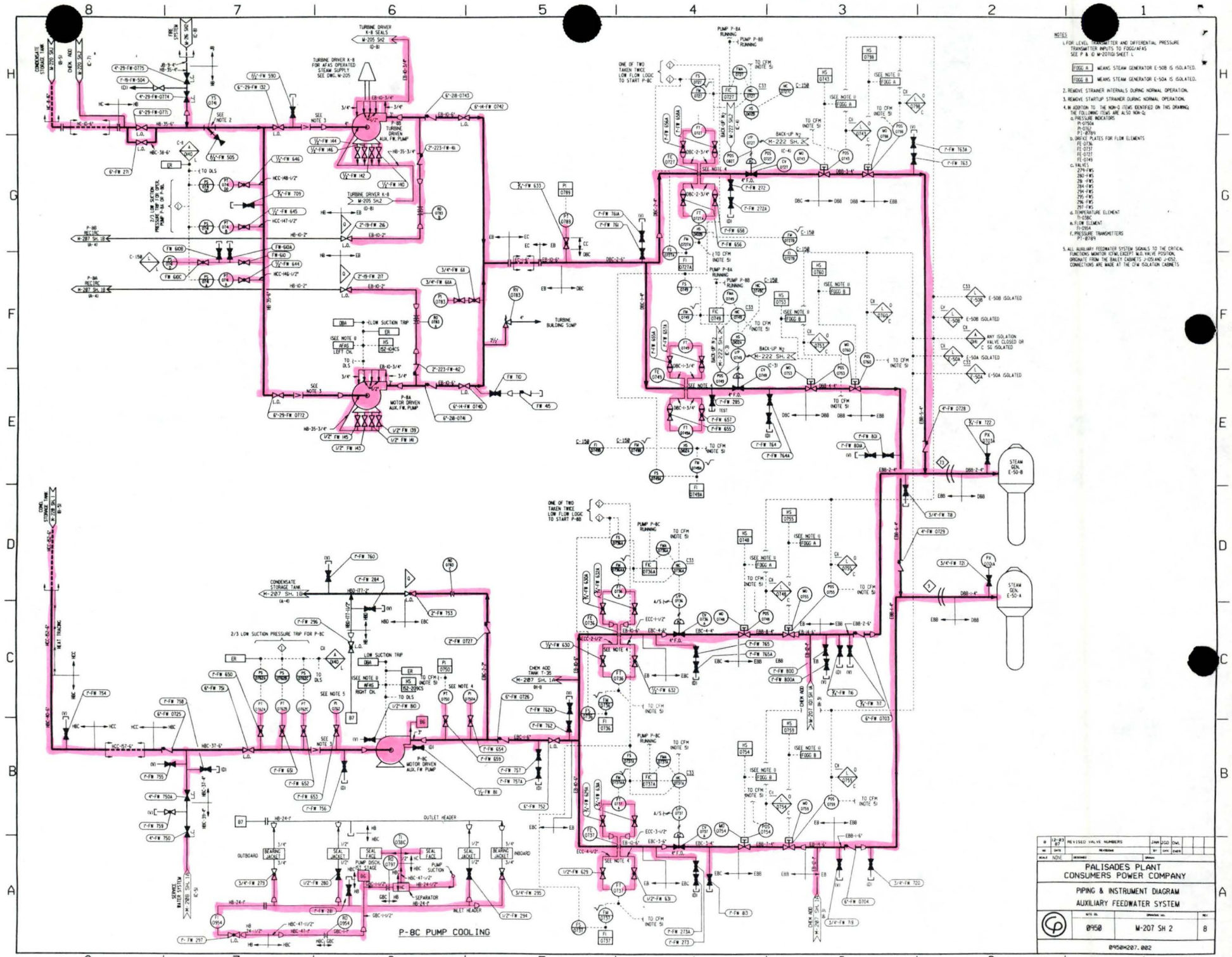
cc: Mr. D. Danielson, NRC Region III
Mr. W. Guldemont, NRC Region III
Mr. E. Caba, TED
Mr. J. Evald, TED
Mr. S. Quennoz, TED
Mr. J. Williams, Jr., TED
Mr. C. Daft, TED
Mr. R. Flood, TED
Mr. C. Ackerman, TED
Mr. T. Bloom, TED
Mr. G. Johnson, NRC
Mr. H. Shaw, NRC
Dr. C. Y. Cheng, NRC

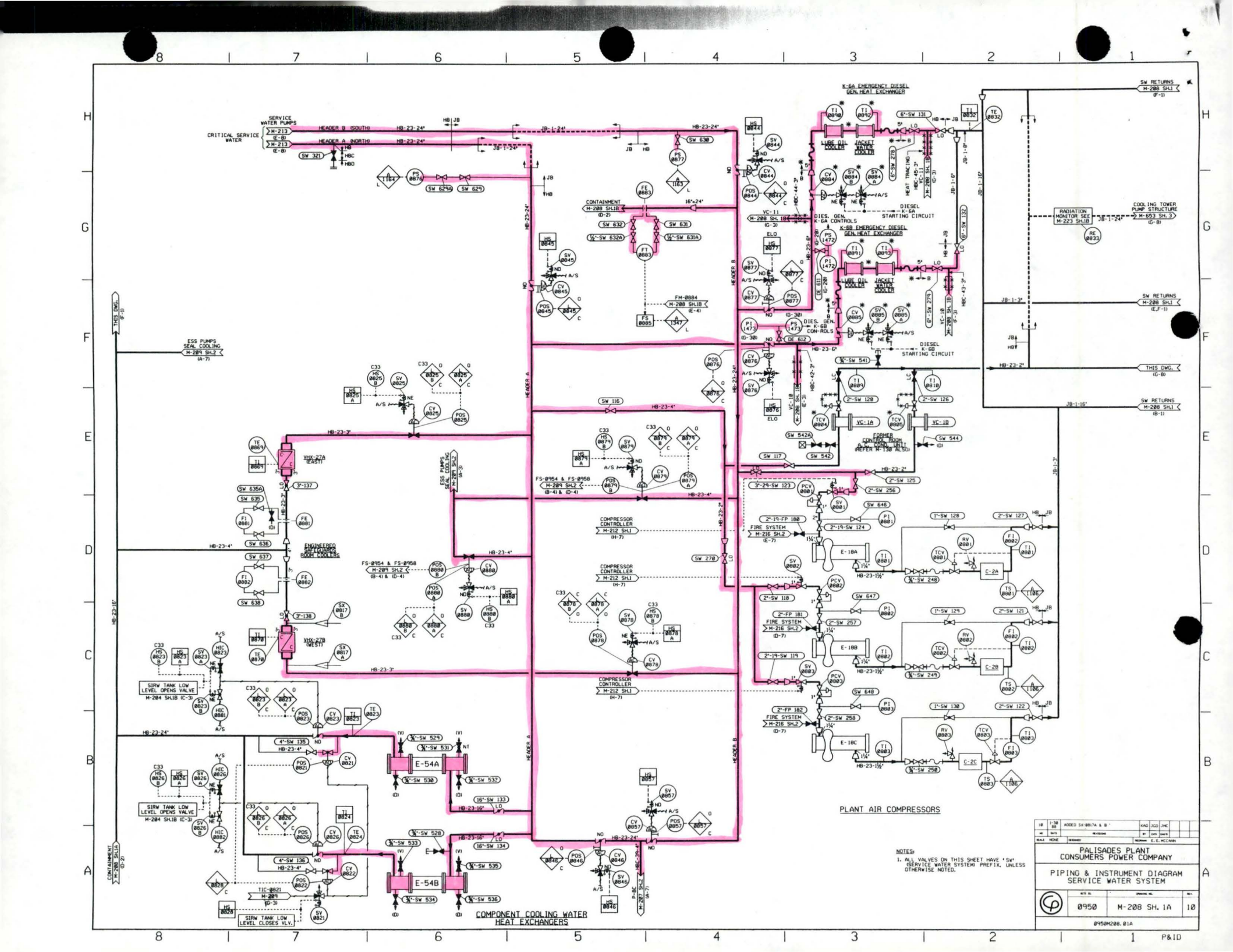

STEAM GEN E-50A
M-207 SH. 1
STEAM GENERATOR E-50A OR E-50B 2/4 LOGIC
M-207 SH. 1 (C-5 & E-7)
MAIN STEAM LINE PRESSURE
M-205 SH. (C-8)
AIR ACCUM.
AIR REG. (150 PSI)
STEAM DUMP CONTROLLER
M-207 SH. 1 (H-6)
QUICK OPENING SIGNAL FROM STEAM DUMP CONTROLLER
M-207 SH. (H-6)
AIR REG. (40 PSI)
BOOSTER
LOSS OF COND. VACUUM PS-0766
M-207 SH. 1 (D-4)
PRES. GAGE TEST TAP
MAIN STEAM BY-PASS TO CONDENSER
M-206 SH. 1B (C-3)
CONDENSER
MV-599MS
MV-597MS
MV-598MS
MAIN STEAM
STOP VALVES
GOVERNOR VALVES
LOWER LH
UPPER LH
LOWER RH
UPPER RH
CYLINDER HEATING SYSTEM
CYLINDER HEATING STEAM
DLS & EVENT RECORDER
CONDENSER
M-206 SH. 1B (C-5)
H.P. TURBINE
FIRST STAGE PRESSURE (IMPULSE CHAMBER) TO WESTINGHOUSE TURBINE CONTROLS
FIRST STAGE PRESSURE TO REACTOR CONTROLS
NO LOAD TRIP
TURBINE BY-PASS CONTROLLER PIC-0511
M-205 SH. 1A (H-7)
GLAND SEAL COND.
M-206 SH. 1C D-5
GLAND SEAL STEAM SUPPLY
M-205 SH. 1A (D-6)
DRAIN
CROSS UNDER
MOIST. SEP. DRAIN TANK
M-206 SH. 1 (D-3)
LPA & B GLAND SEAL EXHAUST
M-206 SH. 1C (F-7)
MSR E-9A
M-205 SH. 1A (B-3)
MSR E-9B
M-205 SH. 1B (B-5)
MSR E-9C
M-205 SH. 1B (A-3)
MSR E-9D
M-205 SH. 1B (H-3)
MSR E-9B
M-205 SH. 1A (H-5)
MSR E-9B
M-202 SH. 1A (G-2)
MSR E-9D
M-205 SH. 1B (G-5)
CONDENSER HEATING
M-206 SH. 1B (E-8)
GLAND SEAL CONDENSER
M-206 SH. 1C (C-5)
K-7A & B HP SIDE
M-205 SH. 2A
E-5A
M-206 SH. 1 D-7
E-5B
M-206 SH. 1 D-3
FEEDWATER HEATERS 5A & 5B
WESTINGHOUSE
BECHTEL
PALISADES PLANT
CONSUMERS POWER COMPANY
PIPING & INSTRUMENT DIAGRAM
MAIN STEAM, MAIN AND AUXILIARY
TURBINE SYSTEMS
0950
M-205 SH. 1
43
P&ID


AUX. FEEDWATER PUMP TURBINE DRIVER K-8
K-7A
E-20A
T-26A
PUMP P-8C RUNNING
PUMP P-8A RUNNING
AIR SUPPLY M-222 SH. 2 (F-4)
CONDENSER M-206 SH 1B (C-4)
MAIN STEAM M-207 SH 1 (G-4)
1" BLEED VALVE
BLEED VALVE
N2 LINE M-222 SH. 2 (H-1)
P8B RUNNING M-207 SH. 2
MAIN STEAM E-50A M-207 SH 1 (G-6)
MAIN CONDENSER M-207 SH.1B (H-5,6)
MAIN STEAM H.P. SIDE M-205 SH. 2A (G-6)
REFER TO P&ID M-225 FOR AIR SYSTEM DETAILS
AUX. F.P. P-8B M-207 SH 2 (H-6)
F.P. TURBINE TRIP THRUST
TURBINE CONTROLS
FW PUMP (P1A)
SPEED CONTROLLER HIC-0526 M-207 SH.1 (B-3)
ENERGIZE SV-0711 WHEN H.P. & L.P. T&T VALVES ARE CLOSED M-207 SH. 1C (A-8)
EVENT RECORDER
MSR E-9B LP STEAM M-205 SH. 1A (G-7)
TURBINE DRIVER K-7A CONTROL
SPEED CONTROLLER HIC-0526 M-207 SH.1 (A-2)
P-1A SEAL WATER M-207 SH 1A (A-5)
FOR NOTES SEE M-205 SH. 1
F.W. TURBINE GLAND SEAL CONDENSER
CONDENSATE RECEIVER
DRAIN TANK T-26A
DRAIN
ATMOSPHERE
CONDENSER M-206 SH 1B (C-5)
PALISADES PLANT
CONSUMERS POWER COMPANY
PIPING & INSTRUMENT DIAGRAM
MAIN STEAM AND AUXILIARY TURBINE SYSTEMS
0950
M-205 SH. 2
21


TURBINE BYPASS VALVE
MAIN STEAM
TURBINE BYPASS VALVE
QUICK OPENING
STM DUMP CONTROL
TURBINE TRIP
PRESS REG
BOOSTER
PRESS RED REG
ACCUM
SEE NOTE 1
EVENT RECORDER & DLS
AUX FW TURBINE K-8
MAIN CONDENSER BLOWDOWN SYSTEM
FLASH TANK T-29
STEAM GENERATOR E-50A (*1)
STEAM GENERATOR E-50B (*2)
STEAM GEN. ISOLATION VALVES
REACTOR TRIP AND ALARM CIRCUIT
EVENT RECORDER & DLS
(2/4 LOGIC)
CLOSE CV-0735 & CV-0781
CLOSE STM LINE ISOLATION VALVES CV-0581 & 0510
CLOSE CV-0734 & CV-0783
CLOSE STM LINE ISOLATION VALVES CV-0581 & 0510
AFAS
386/AST
AUX FW PUMP P-8A, B & C AUTO START
HIGH LEVEL OVERRIDE
HIGH LEVEL OVERRIDE FROM LIA-0782
SPEED RAMP DOWN
TURBINE TRIP (AUTO-STOP OIL PRESS)
FEEDWATER
FEED WATER PUMP TURBINE DRIVER
DLS
NOTES:
1. SHOWN FOR CV 0781; CV 0788, CV 0779 & CV 0782 ARE IDENTICAL.
2. SX-0779 THRU SX-0782 ARE HYDROSTATIC TEST TAPS
PALISADES PLANT
CONSUMERS POWER COMPANY
PIPING & INSTRUMENT DIAGRAM
FEEDWATER & CONDENSATE SYSTEM
0950
M-207 SH. 1
56
REVISED PER ENGINEERING WALKDOWN REV MS-585A, MS-585B & MS-586.
J.L. STERRETT
0950M207.001
P&ID


HEATER E6B
HEATER E6A
F-46
F-47
P-1B
P-1A
STEAM GENERATOR FEED PUMPS
PRIMARY PLANT DATA PROCESSOR
CHEMICAL ADDITION T-35
TURBINE DRIVER K-7B CONTROLS
TURBINE DRIVER K-7A CONTROLS
MAIN FEEDWATER
E6B RECIRC
E6A RECIRC
SEAL WATER TO DRAIN TANK T-26A
MAIN CONDENSER
CONDENSATE
EVENT & DLS RECORDER
TO EVENT RECORDER &DLS
NOTES:
1. REFER TO P&ID M-225 FOR CONTROL AIR SYSTEM DETAILS.
PALISADES PLANT
CONSUMERS POWER COMPANY
PIPING & INSTRUMENT DIAGRAM
FEEDWATER & CONDENSATE SYSTEM
0950
M-207 SH. 1A
14
0950M207.01A
P & I D


NOTES
1. FOR LEVEL TRANSMITTER AND DIFFERENTIAL PRESSURE TRANSMITTER INPUTS TO FOGG/AFAS SEE P & ID M-207(Q) SHEET 1.
FOGG A MEANS STEAM GENERATOR E-50B IS ISOLATED.
FOGG B MEANS STEAM GENERATOR E-50A IS ISOLATED.
2. REMOVE STRAINER INTERNALS DURING NORMAL OPERATION.
3. REMOVE STARTUP STRAINER DURING NORMAL OPERATION.
4. IN ADDITION TO THE NON-Q ITEMS IDENTIFIED ON THIS DRAWING, THE FOLLOWING ITEMS ARE ALSO NON-Q:
a. PRESSURE INDICATORS
PI-0750A
PI-0762
PI-0789
b. ORIFICE PLATES FOR FLOW ELEMENTS
FE-0736
FE-0737
FE-0727
FE-0749
c. VALVES
27A-FWS
28D-FWS
28J-FWS
28K-FWS
29A-FWS
29F-FWS
29G-FWS
29T-FWS
d. TEMPERATURE ELEMENT
TI-0380
e. FLOW ELEMENT
FI-0954
f. PRESSURE TRANSMITTERS
PT-0789
5. ALL AUXILIARY FEEDWATER SYSTEM SIGNALS TO THE CRITICAL FUNCTIONS MONITOR (CFM), EXCEPT M.O. VALVE POSITION, ORIGINATE FROM THE BAILEY CABINETS J-125 AND J-052. CONNECTIONS ARE MADE AT THE CFM ISOLATION CABINETS
P-8C PUMP COOLING
PALISADES PLANT
CONSUMERS POWER COMPANY
PIPING & INSTRUMENT DIAGRAM
AUXILIARY FEEDWATER SYSTEM
0950
M-207 SH 2
8
0950M207.002
P&ID



NOTES:
1. ALL VALVES ON THIS SHEET HAVE 'SW' (SERVICE WATER SYSTEM) PREFIX, UNLESS OTHERWISE NOTED.

1B	1-30-80	ADDED SX-0817A & B	KAD	JGD	JMC
NO.	DATE	REVISIONS	BY	CHK'D	APP'D

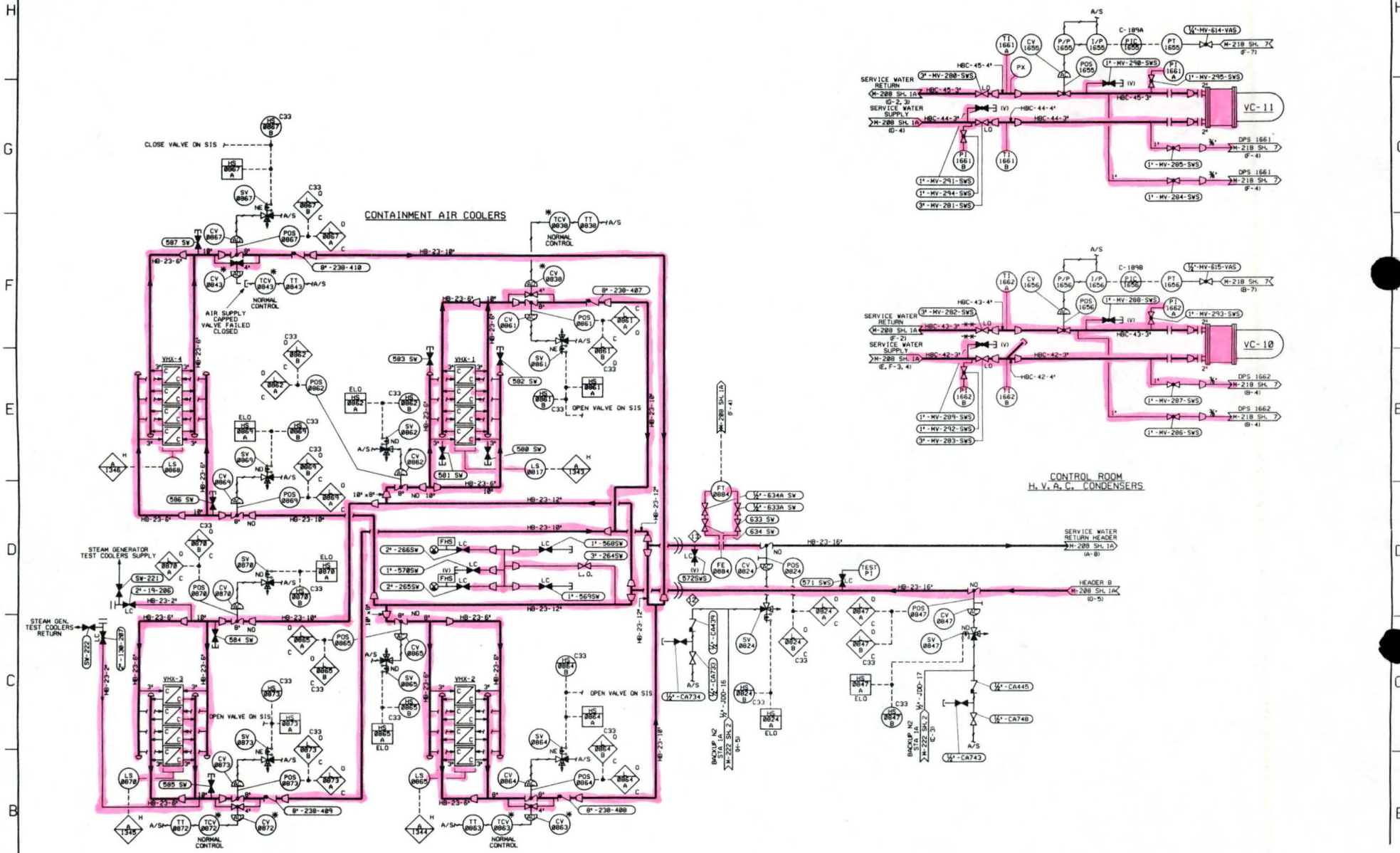
SCALE: NONE — DESIGNED — PROGRAM: E.E. MCCANN

PALISADES PLANT
CONSUMERS POWER COMPANY

PIPING & INSTRUMENT DIAGRAM
SERVICE WATER SYSTEM

	DRAWING NO.	REV.
0950	M-208 SH. 1A	10

0950M208.01A



NOTES:
1. ALL VALVES ON THIS SHEET HAVE "SWS" (SERVICE WATER SYSTEM) SUFFIX, UNLESS OTHERWISE NOTED.

8	5-4-87	REMOVED FW-2884 PER SC-86-271	COR	JDD
NO	DATE	REVISIONS	BY	CHK

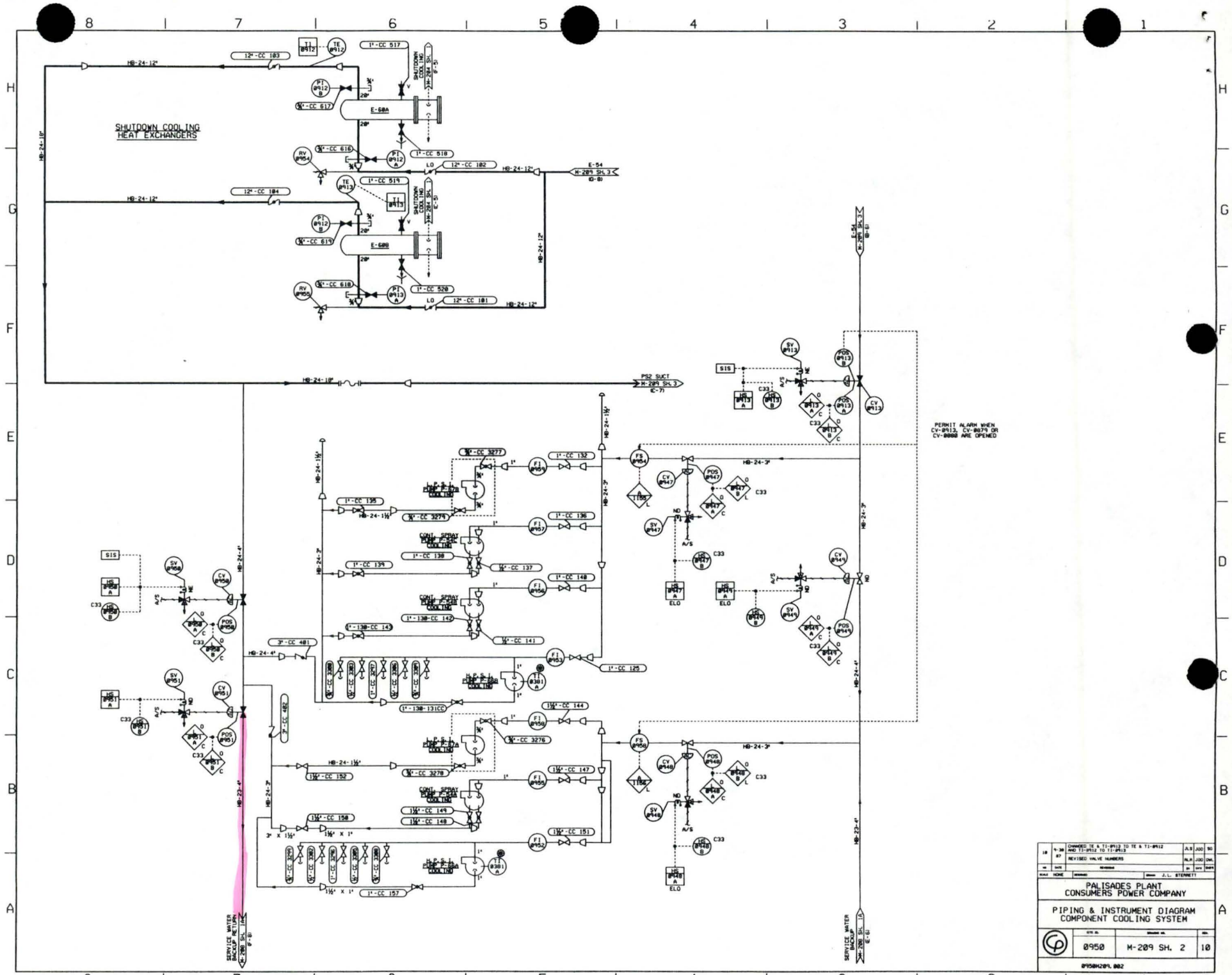
SCALE: NONE DESIGNED Nuclear E. E. MCCANN

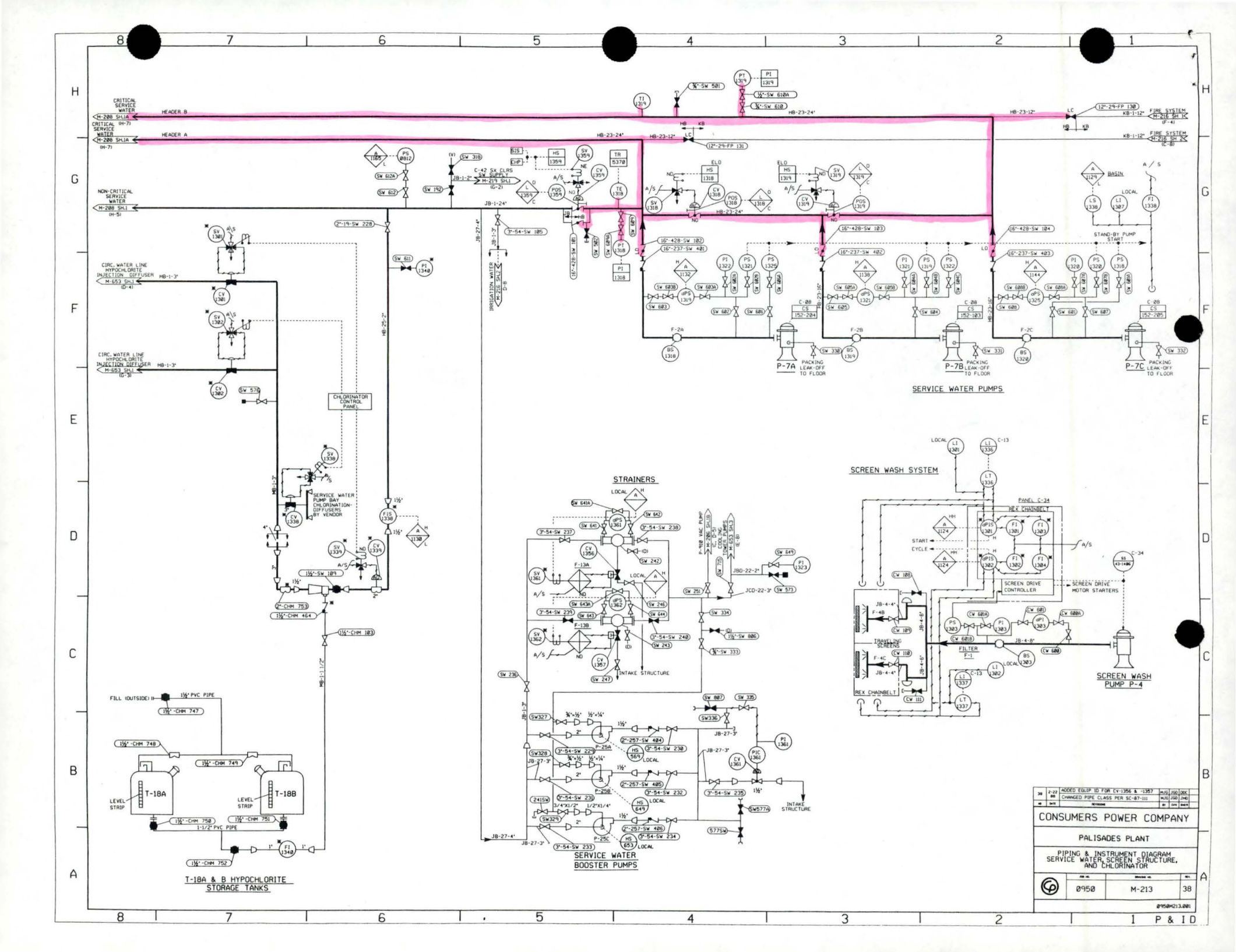
PALISADES PLANT
CONSUMERS POWER COMPANY

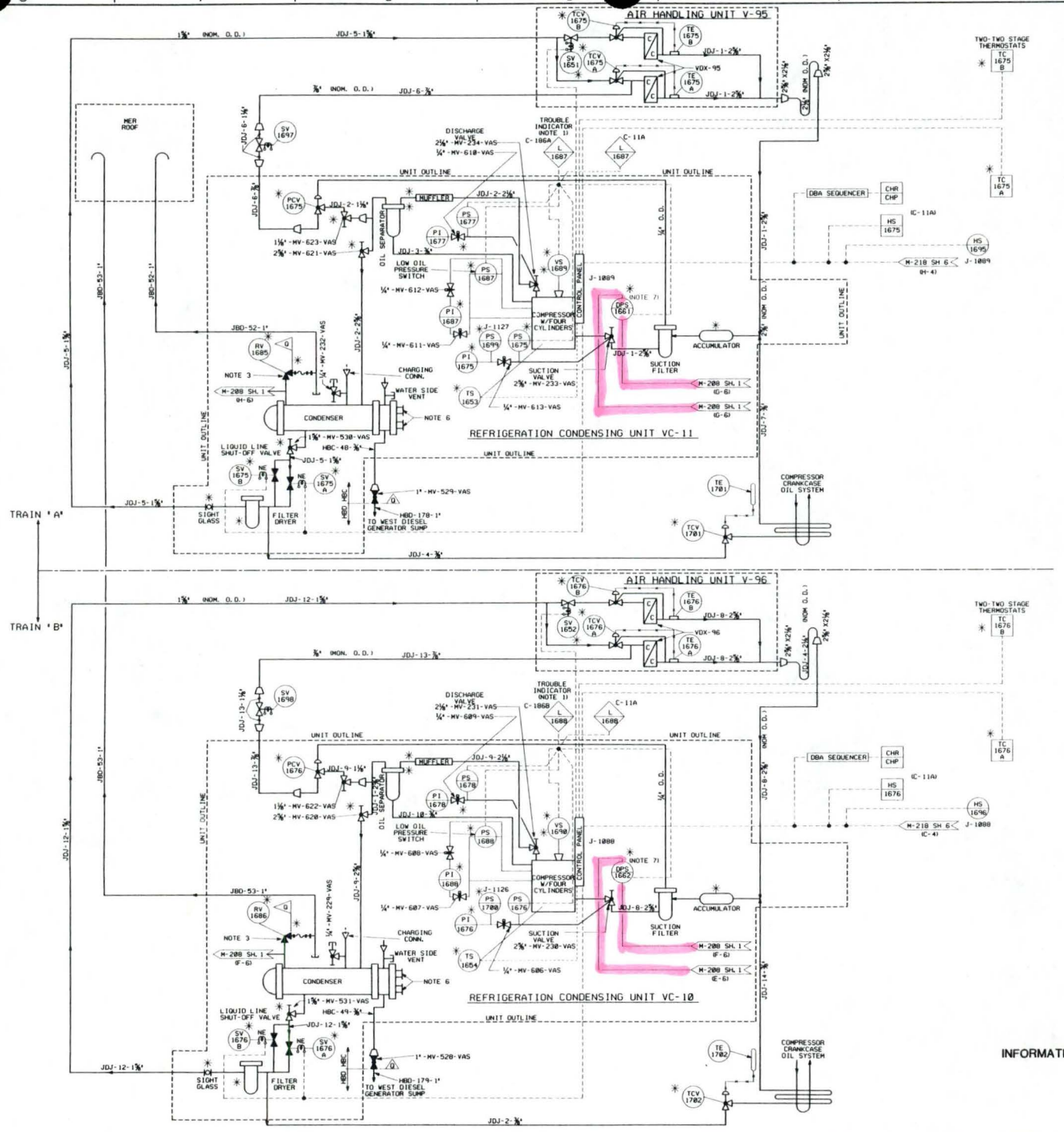
PIPING & INSTRUMENT DIAGRAM
SERVICE WATER SYSTEM

	DCTR NO.	DRAWING NO.	REV.
	0950	M-208 SH. 1B	8

0950M208.01B


SHUTDOWN COOLING HEAT EXCHANGERS
E-68A
E-68B
PERMIT ALARM WHEN CV-8913, CV-8879 OR CV-8888 ARE OPENED
PALISADES PLANT
CONSUMERS POWER COMPANY
PIPING & INSTRUMENT DIAGRAM
COMPONENT COOLING SYSTEM
0950
M-209 SH. 2
10
P & I D


CRITICAL SERVICE WATER
HEADER B
M-200 SH.1A
CRITICAL SERVICE WATER
HEADER A
M-200 SH.1A
NON-CRITICAL SERVICE WATER
M-200 SH.1
CIRC. WATER LINE HYPOCHLORITE INJECTION DIFFUSER
M-653 SH.1
CIRC. WATER LINE HYPOCHLORITE INJECTION DIFFUSER
M-653 SH.1
CHLORINATOR CONTROL PANEL
SERVICE WATER PUMP BAY CHLORINATION-DIFFUSERS BY VENDOR
IRRIGATION WATER
M-208 SH.1
C-42 Sx CLRS SW SUPPLY
M-219 SH.1
FIRE SYSTEM
M-216 SH.1
FIRE SYSTEM
M-216 SH.1
BASIN
LOCAL
STAND-BY PUMP START
P-7A
P-7B
P-7C
PACKING LEAK-OFF TO FLOOR
SERVICE WATER PUMPS
STRAINERS
INTAKE STRUCTURE
SERVICE WATER BOOSTER PUMPS
SCREEN WASH SYSTEM
PANEL C-34
REX CHAINBELT
SCREEN DRIVE CONTROLLER
SCREEN DRIVE MOTOR STARTERS
TRAVELING SCREENS
FILTER F-1
SCREEN WASH PUMP P-4
FILL (OUTSIDE)
T-18A
T-18B
LEVEL STRIP
1-1/2" PVC PIPE
T-18A & B HYPOCHLORITE STORAGE TANKS
ADDED EQUIP ID FOR CV-1356 & -1357
CHANGED PIPE CLASS PER SC-87-111
CONSUMERS POWER COMPANY
PALISADES PLANT
PIPING & INSTRUMENT DIAGRAM
SERVICE WATER, SCREEN STRUCTURE, AND CHLORINATOR
0950
M-213
38
0950M213.001
P & ID



NOTES

1. INDICATES COMPRESSOR TRIPS ON HIGH DISCH. PRESS, LOW OIL PRESSURE, OR LOW SUCTION PRESSURE. ALSO INDICATES HIGH VIBRATION & HIGH SERVICE WATER PRESSURE DROP ACROSS THE CONDENSER. INDICATES HIGH OIL TEMPERATURE TRIP AS WELL.
2. SET AT 350 PSIG.
3. UNIT STARTS & LOADS ONE CYLINDER @ TEMPERATURE AS DETERMINED BY PLANT (TB). LOADS THIRD & FOURTH CYLINDER @ TB+6°F (±1°)
4. LOADS SECOND CYLINDER @ TB+3°F (±1°)
5. FOR SERVICE WATER PIPING CONNECTIONS REFER TO SHEET M-200 (Q).
6. THE FOLLOWING LISTED ITEMS ARE NON-Q: PI-1678, PI-1688, VS-1690, PI-1676, PI-1677, PI-1687, VS-1689, PI-1675.
7. REFERENCE BY ELLIS & WATTS DRAWING #1F3S (BECHTEL DRAWING 12447-S4-M-91-68).
8. BACKSEATING OF THE FOLLOWING VALVES WILL ISOLATE COMPRESSOR FAULT PROTECTION:
   MV-233-VAS MV-230-VAS
   MV-234-VAS MV-231-VAS
9. CLOSING OF ¼"-MV-613-VAS AND ¼"-MV-606-VAS WILL PREVENT COMPRESSOR SHUT DOWN AFTER THE AUTO PUMP-DOWN CYCLE
10. ALL LOCALLY MOUNTED INSTRUMENTATION SHOWN IS MOUNTED IN J1088 OR J1089 UNLESS OTHERWISE SPECIFIED.

INFORMATION COPY

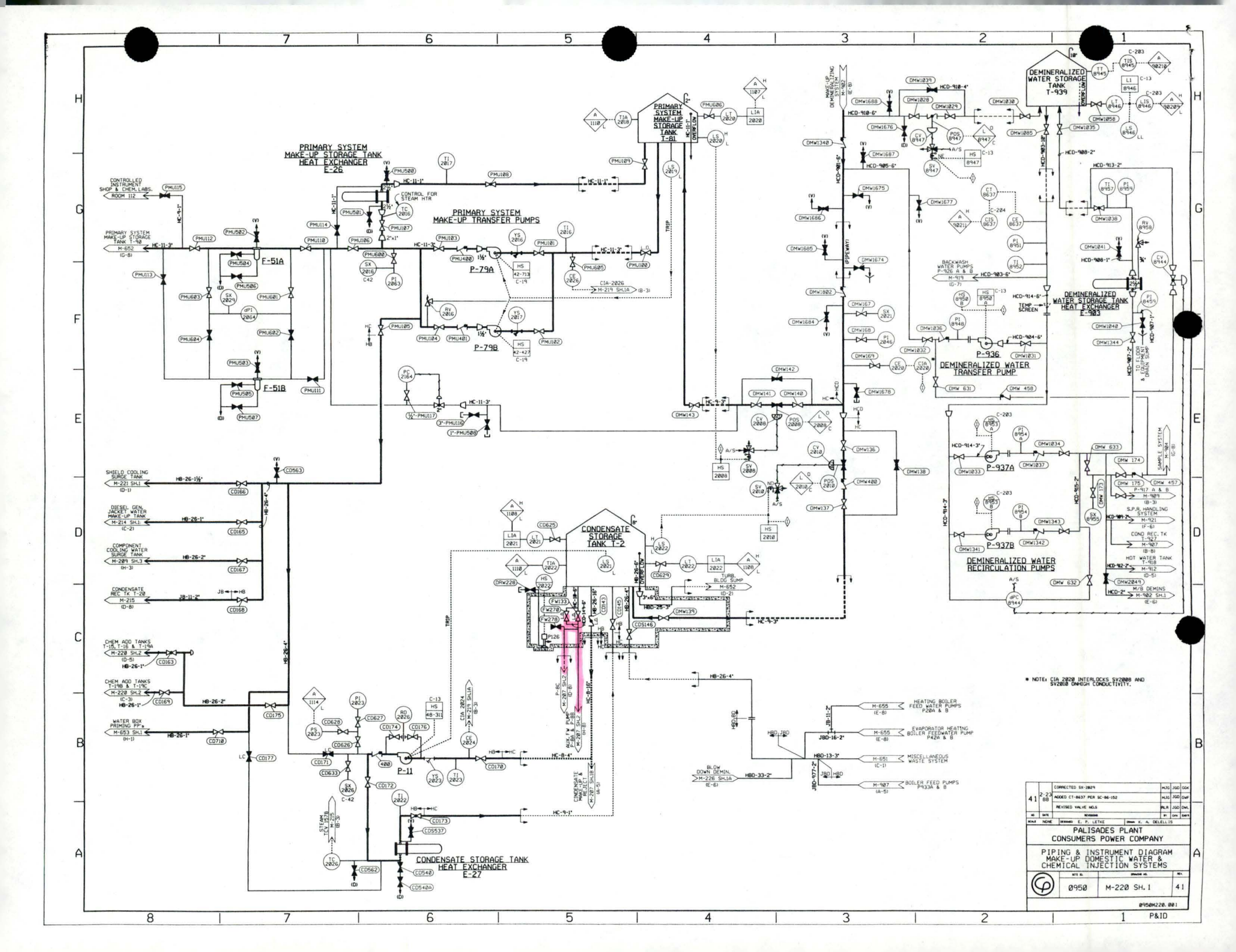
NO.	DATE	REVISION	BY	CHK.	ENG'R
3	7-25-95	REVISED NOTES 3&4 PER ENGR REVIEW DWG 8721	RMG	CWB	TDV	TAR
2	7-5-95	ADDED NEW PIPING CLASS PER ENGR. REVIEW DWG 8721	PGB	CWB	TDV	TAR
1	9-22-94	REVISED PER FIELD COMMENTS, SUB-JOB 12447-054, DWG 8721	EEM	CWB	TDV	LHY
0	4-14-94	REVISED & SPLIT DWG. PER HVAC MODS SUB JOB 12447-054 DWG 8721	PGB	RGG	TDV	LHY

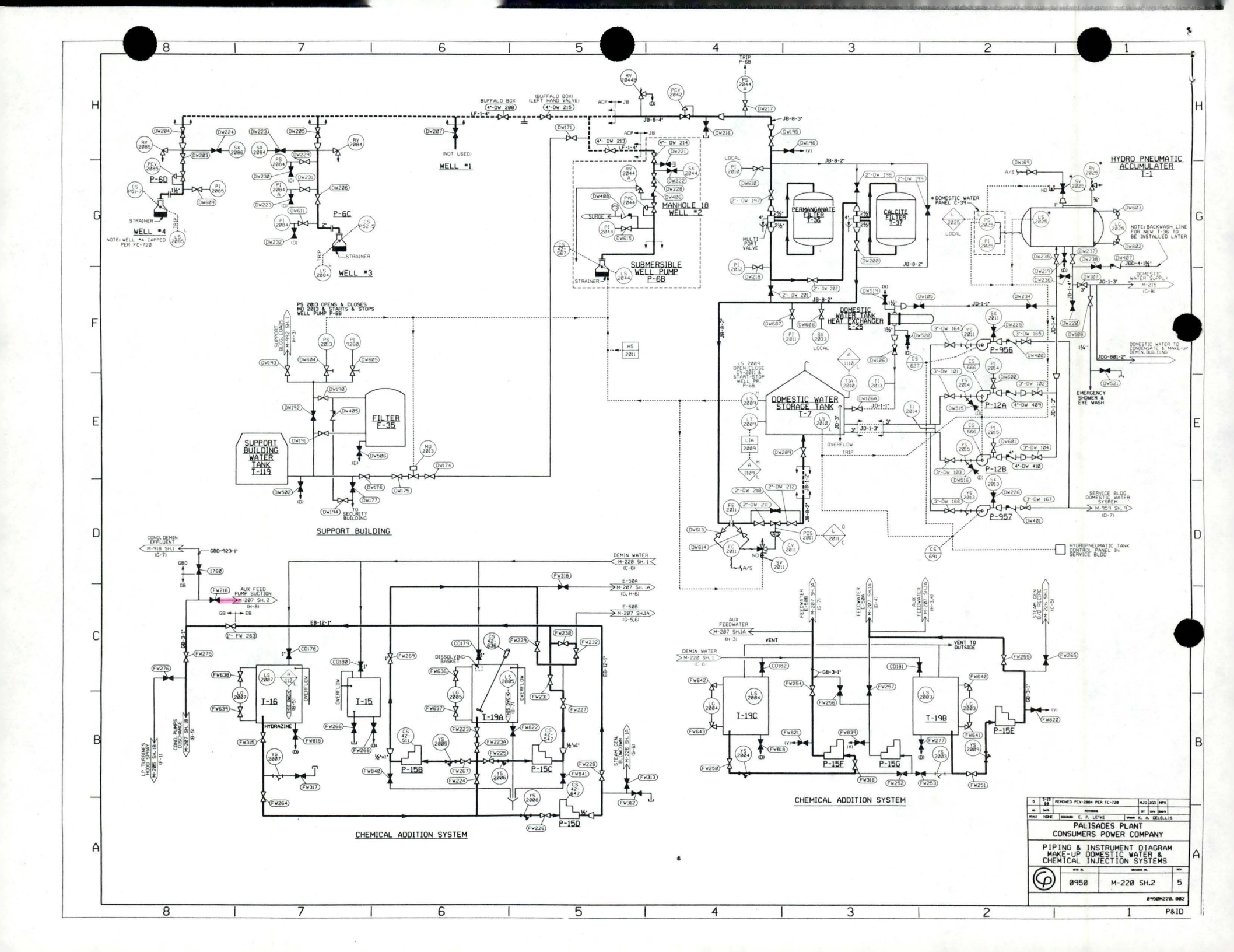
PALISADES PLANT
CONSUMERS POWER COMPANY

PIPING & INSTRUMENT DIAGRAM
HTG. VENT. & AIR COND.
CONTROL ROOM

0950	M-218 SH. 7	3

(40,100)0950M218.007


PRIMARY SYSTEM MAKE-UP STORAGE TANK HEAT EXCHANGER E-26
PRIMARY SYSTEM MAKE-UP TRANSFER PUMPS
PRIMARY SYSTEM MAKE-UP STORAGE TANK T-81
DEMINERALIZED WATER STORAGE TANK T-939
DEMINERALIZED WATER STORAGE TANK HEAT EXCHANGER E-903
DEMINERALIZED WATER TRANSFER PUMP
DEMINERALIZED WATER RECIRCULATION PUMPS
CONDENSATE STORAGE TANK T-2
CONDENSATE STORAGE TANK HEAT EXCHANGER E-27
F-51A
F-51B
P-79A
P-79B
P-936
P-937A
P-937B
P-11
CONTROLLED INSTRUMENT SHOP & CHEM. LABS. ROOM 112
SHIELD COOLING SURGE TANK M-221 SH.1
DIESEL GEN. JACKET WATER MAKE-UP TANK M-214 SH.1
COMPONENT COOLING WATER SURGE TANK M-209 SH.3
CONDENSATE REC. TK T-20 M-215
CHEM. ADD TANKS T-15, T-18 & T-19A M-220 SH.2
CHEM. ADD TANKS T-19B & T-19C M-220 SH.2
WATER BOX PRIMING PP's M-653 SH.1
BLOW DOWN DEMIN. M-226 SH.1A
HEATING BOILER FEED WATER PUMPS P-29A & B
EVAPORATOR HEATING BOILER FEEDWATER PUMP P-42A & B
MISCELLANEOUS WASTE SYSTEM
BOILER FEED PUMPS P-33A & B
TURB. BLDG SUMP M-652
S.P.R. HANDLING SYSTEM M-921
COND. REC. TK T-927 M-907
HOT WATER TANK T-918 M-912
M/B DEMINS M-902 SH.1
SAMPLE SYSTEM M-904
TO FLOOR & EQUIP. DRAIN SUMP
* NOTE: CIA 2020 INTERLOCKS SV2008 AND SV2010 ON HIGH CONDUCTIVITY.
CORRECTED SX-2829
ADDED CT-8637 PER SC-86-152
REVISED VALVE NOS.
PALISADES PLANT
CONSUMERS POWER COMPANY
PIPING & INSTRUMENT DIAGRAM
MAKE-UP DOMESTIC WATER & CHEMICAL INJECTION SYSTEMS
0950
M-220 SH. 1
41
0950M220.001
P&ID


WELL #4
WELL #3
WELL #1
P-6D
P-6C
P-6B
SUBMERSIBLE WELL PUMP
MANHOLE 18
WELL #2
BUFFALO BOX
(BUFFALO BOX) (LEFT HAND VALVE)
(NOT USED)
HYDRO PNEUMATIC ACCUMULATOR T-1
PERMANGANATE FILTER F-36
CALCITE FILTER F-37
MULTI PORT VALVE
DOMESTIC WATER PANEL C-39
DOMESTIC WATER TANK HEAT EXCHANGER E-25
DOMESTIC WATER STORAGE TANK T-7
P-956
P-12A
P-12B
P-957
EMERGENCY SHOWER & EYE WASH
SERVICE BLDG DOMESTIC WATER SYSREM
HYDROPNEUMATIC TANK CONTROL PANEL IN SERVICE BLDG
NOTE: BACKWASH LINE FOR NEW T-36 TO BE INSTALLED LATER
DOMESTIC WATER TO CONDENSATE & MAKE-UP DEMIN. BUILDING
PS 2013 OPENS & CLOSES MO 2013 & STARTS & STOPS WELL PUMP P-6B
SUPPORT BUILDING WATER TANK T-119
FILTER F-35
SUPPORT BUILDING
T-16
T-15
T-19A
T-19C
T-19B
P-15B
P-15C
P-15D
P-15E
P-15F
P-15G
HYDRAZINE
CHEMICAL ADDITION SYSTEM
CHEMICAL ADDITION SYSTEM
COND. DEMIN EFFLUENT
AUX FEED PUMP SUCTION
DEMIN WATER
VENT TO OUTSIDE
PALISADES PLANT
CONSUMERS POWER COMPANY
PIPING & INSTRUMENT DIAGRAM
MAKE-UP DOMESTIC WATER & CHEMICAL INJECTION SYSTEMS
0950
M-220 SH.2
5
0950M220.002
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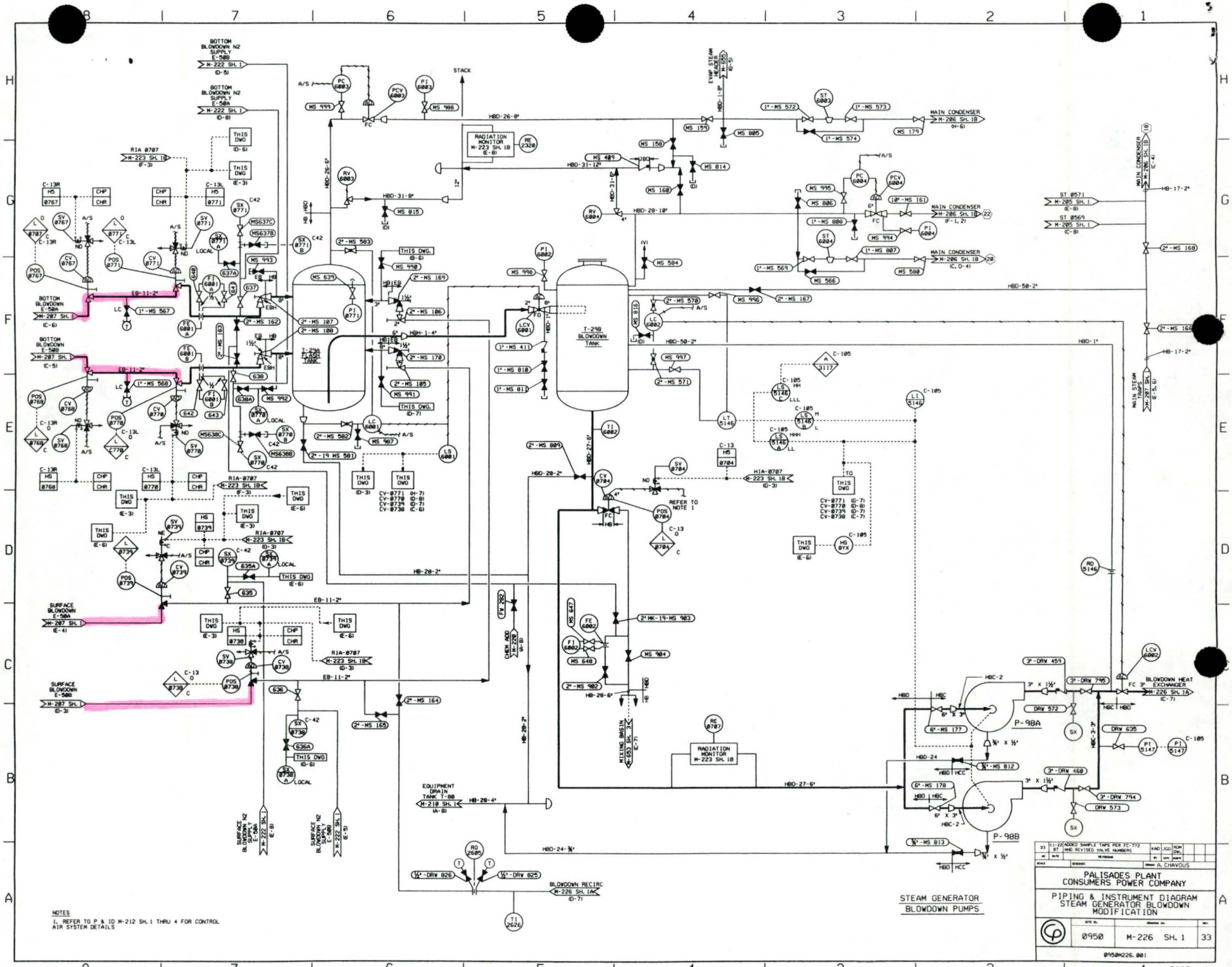
T-29B BLOWDOWN TANK
P-98A
P-98B
STEAM GENERATOR BLOWDOWN PUMPS
RADIATION MONITOR M-223 SH. 1B
RADIATION MONITOR M-223 SH. 1B
MAIN CONDENSER M-206 SH. 1B
BLOWDOWN HEAT EXCHANGER M-226 SH. 1A
BLOWDOWN RECIRC M-226 SH. 1A
MIXING BASIN M-253 SH. 2
EQUIPMENT DRAIN TANK T-88 M-210 SH. 1
BOTTOM BLOWDOWN E-50B M-222 SH. 1
BOTTOM BLOWDOWN N2 SUPPLY E-50A M-222 SH. 1
BOTTOM BLOWDOWN E-50A M-207 SH. 1
BOTTOM BLOWDOWN E-50B M-207 SH. 1
SURFACE BLOWDOWN E-50A M-207 SH. 1
SURFACE BLOWDOWN E-50B M-207 SH. 1
SURFACE BLOWDOWN N2 SUPPLY E-50A M-222 SH. 1
SURFACE BLOWDOWN N2 SUPPLY E-50B M-222 SH. 1
MAIN STEAM TRAP M-207 SH. 1
STACK
EVAP. STEAM FROM M-255
ST 8571 M-205 SH. 1
ST 8569 M-205 SH. 1
REFER TO NOTE 1
NOTES
1. REFER TO P & ID M-212 SH. 1 THRU 4 FOR CONTROL AIR SYSTEM DETAILS
PALISADES PLANT
CONSUMERS POWER COMPANY
PIPING & INSTRUMENT DIAGRAM
STEAM GENERATOR BLOWDOWN MODIFICATION
0950
M-226 SH. 1
33
0950M226.001
P&ID