

Uprate PEPSE Model with New HP Turbine  
 High Pressure Turbine Expansion Sheet 1 of 6

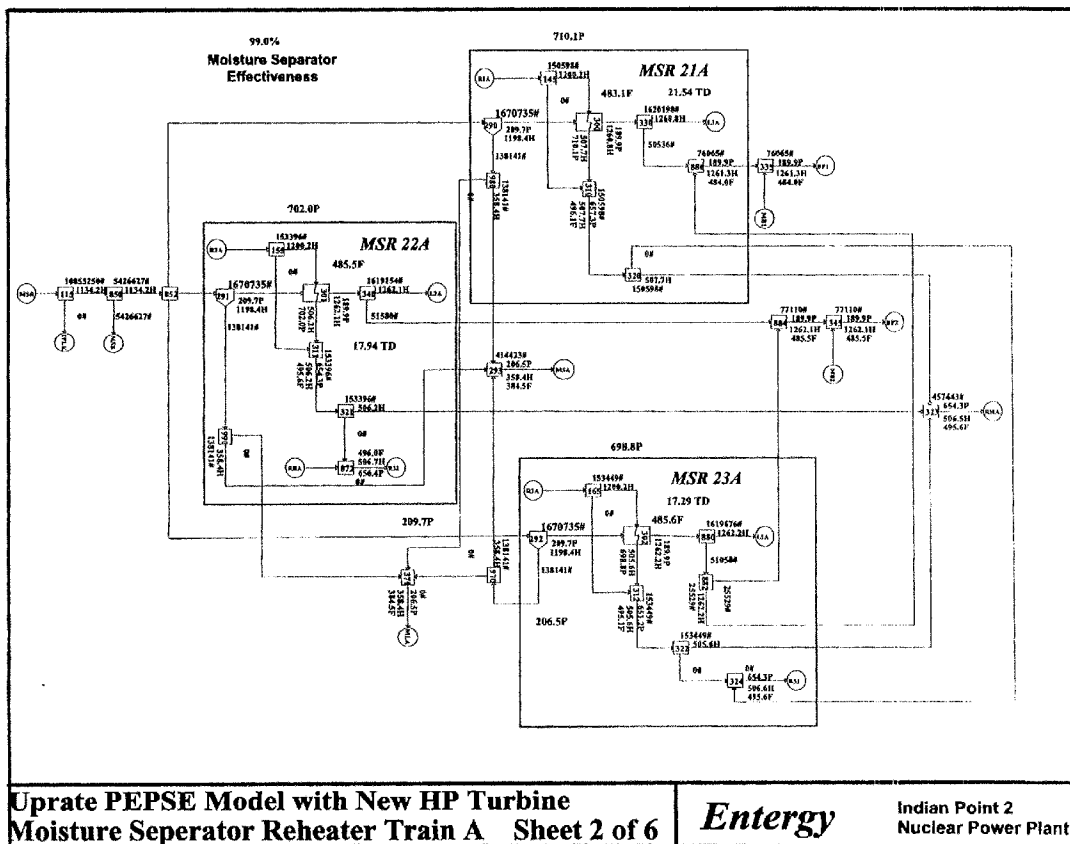
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Indian Point 2  
 Nuclear Power Plant

INDIAN POINT UNIT No. 2

UPRATE PEPSE MODEL WITH NEW HP  
 TURBINE HIGH PRESSURE TURBINE  
 EXPANSION

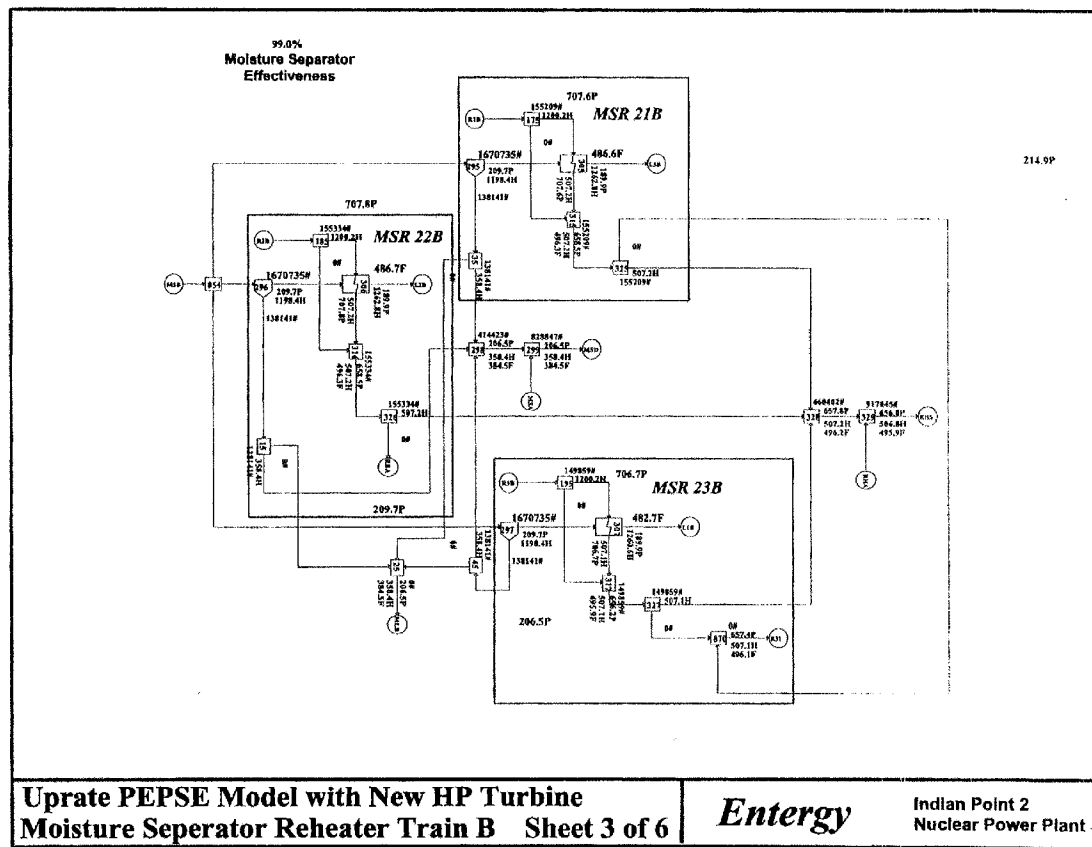
UFSAR FIGURE 10.1-1a REV. No. 21



INDIAN POINT UNIT No. 2

UPRATE PEPSE MODEL WITH NEW HP TURBINE  
MOISTURE SEPARATOR REHEATER TRAIN A

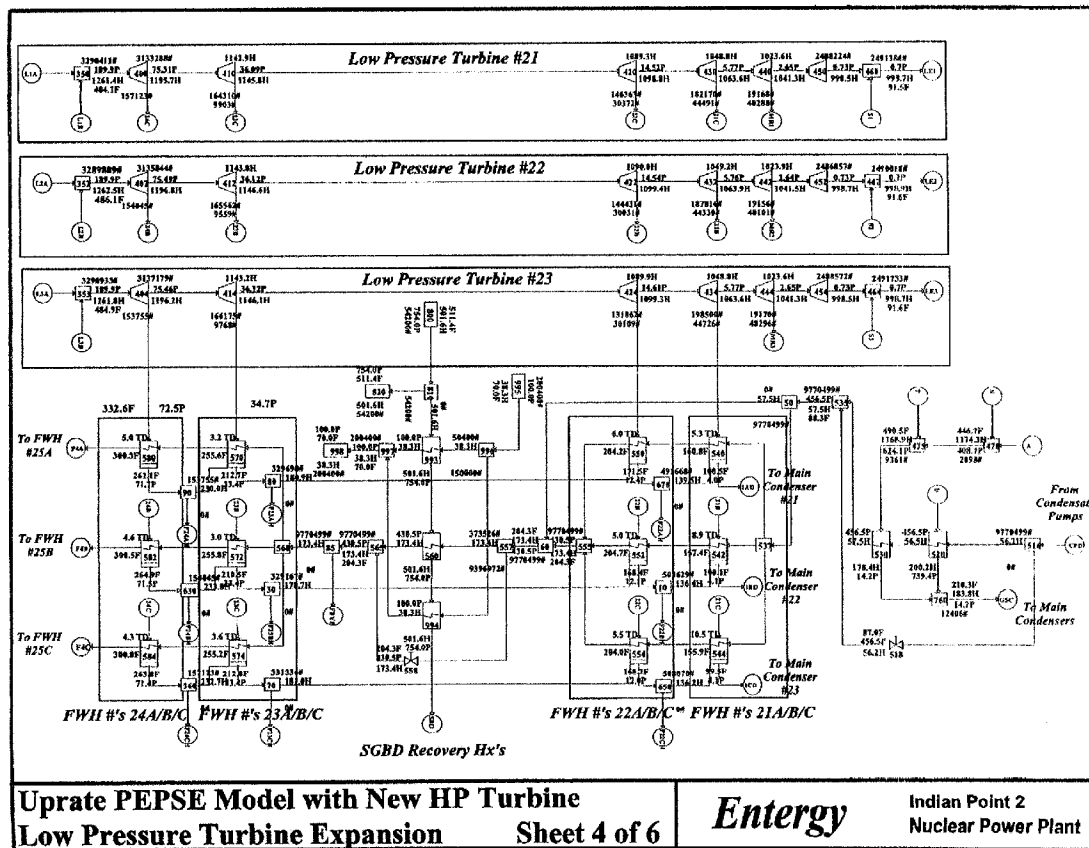
UFSAR FIGURE 10.1-1b REV. No. 21



INDIAN POINT UNIT No. 2

UPRATE PEPSE MODEL WITH NEW HP TURBINE  
MOISTURE SEPARATOR REHEATER TRAIN B

UFSAR FIGURE 10.1-1c REV. No. 21



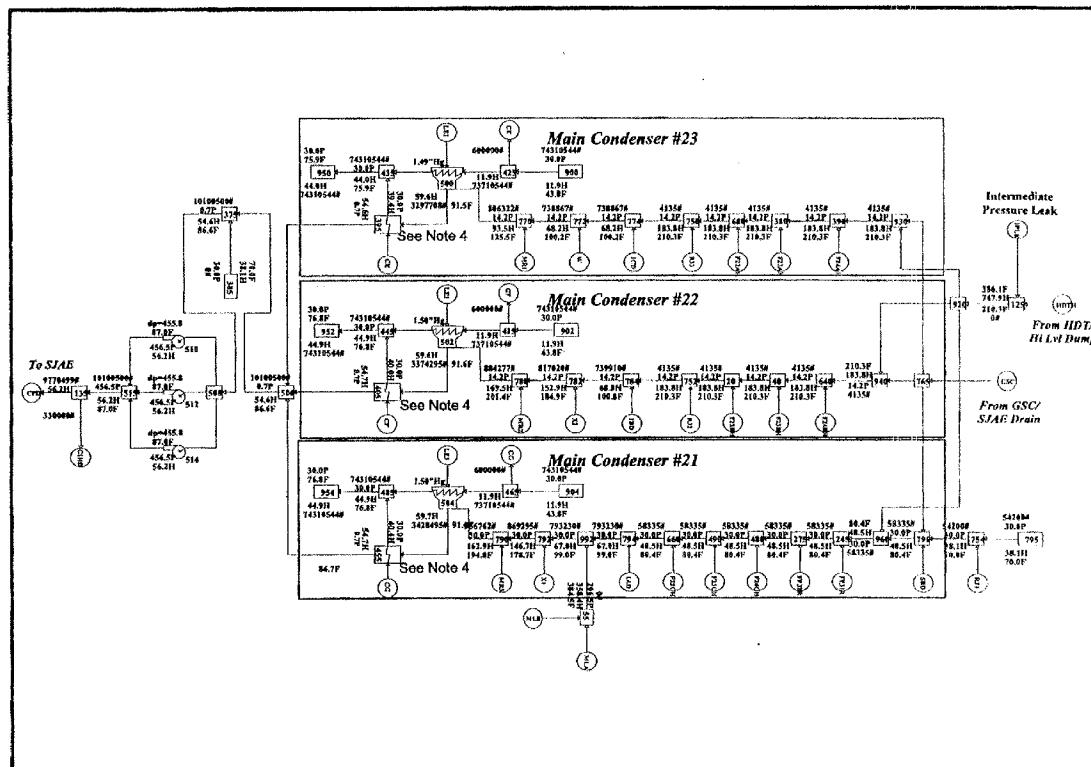
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Indian Point 2  
Nuclear Power Plant

INDIAN POINT UNIT No. 2

UPRATE PEPSE MODEL WITH NEW HP TURBINE  
LOW PRESSURE TURBINE EXPANSION

UFSAR FIGURE 10.1-1d REV. No. 21



Uprate PEPSE Model with New HP Turbine  
Main Condensers  
Sheet 5 of 6

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Indian Point 2  
Nuclear Power Plant

INDIAN POINT UNIT No. 2

UPRATE PEPSE MODEL WITH NEW HP TURBINE  
MAIN CONDENSERS

UFSAR FIGURE 10.1-1e REV. No. 21

CIRCULATING WATER TEMPERATURES  
INLET, F: 43.80    OUTLET #21:

NOTES:

1. This model runs Data Sets 1, 6, 5 and 16 in that order. S&W changes are in Data Set 16, or else in the last set where the data are entered.
2. OPVB 12 is the input for Circ Water Inlet Temp. Operations 103-105 set this value for the CW sources.
3. This heat balance should not be used to predict pressures in the condensate and feedwater system. The hydraulic performance has not been tuned to reflect actual plant conditions.
4. Hotwell subcooling is modeled by means of fictitious heat exchangers (Component Numbers 395, 405, 455) in the condensate line at the condenser exit. For the uprate case 5 Deg F subcooling has been assumed.
5. New HP turbine is tuned to match turbine parameters per Siemens-Westinghouse heat balance WB-9341.
6. The reheaters are modeled using the simplified design mode components of PEPSE 66. In this representation the heat transfer coefficients are fixed at the values established for the Benchmark Tuning Model, representative of pre-uprate performance. The heat transfer coefficients are expected to be somewhat higher after uprate.

Uprate PEPSE Model with New HP Turbine  
Notes and Significant Results      Sheet 6 of 6

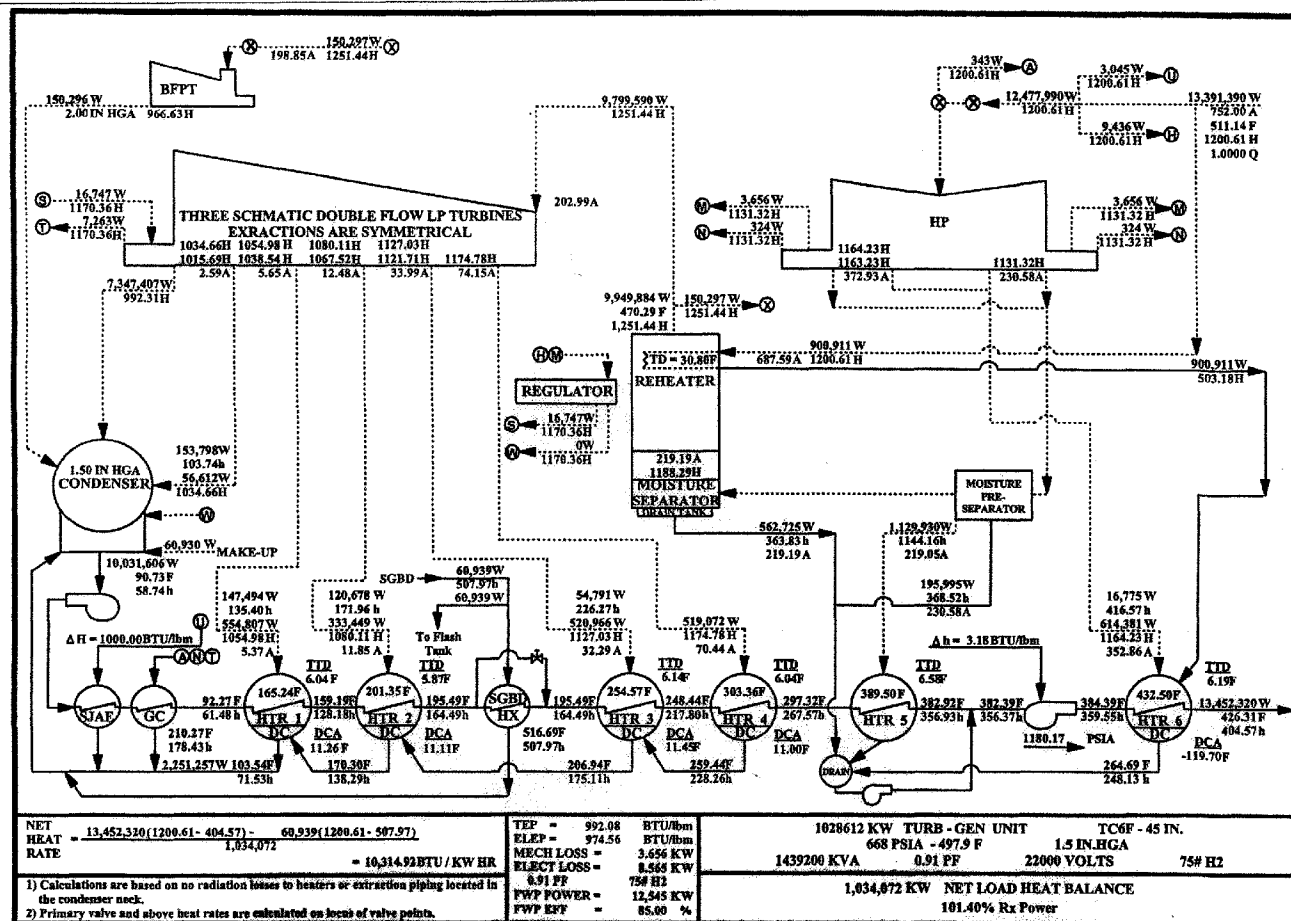
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Indian Point 2  
Nuclear Power Plant

INDIAN POINT UNIT No. 2

UPRATE PEPSE MODEL WITH NEW HP TURBINE  
NOTES AND SIGNIFICANT RESULTS

UFSAR FIGURE 10.1-1f    REV. No. 21



INDIAN POINT UNIT No. 2

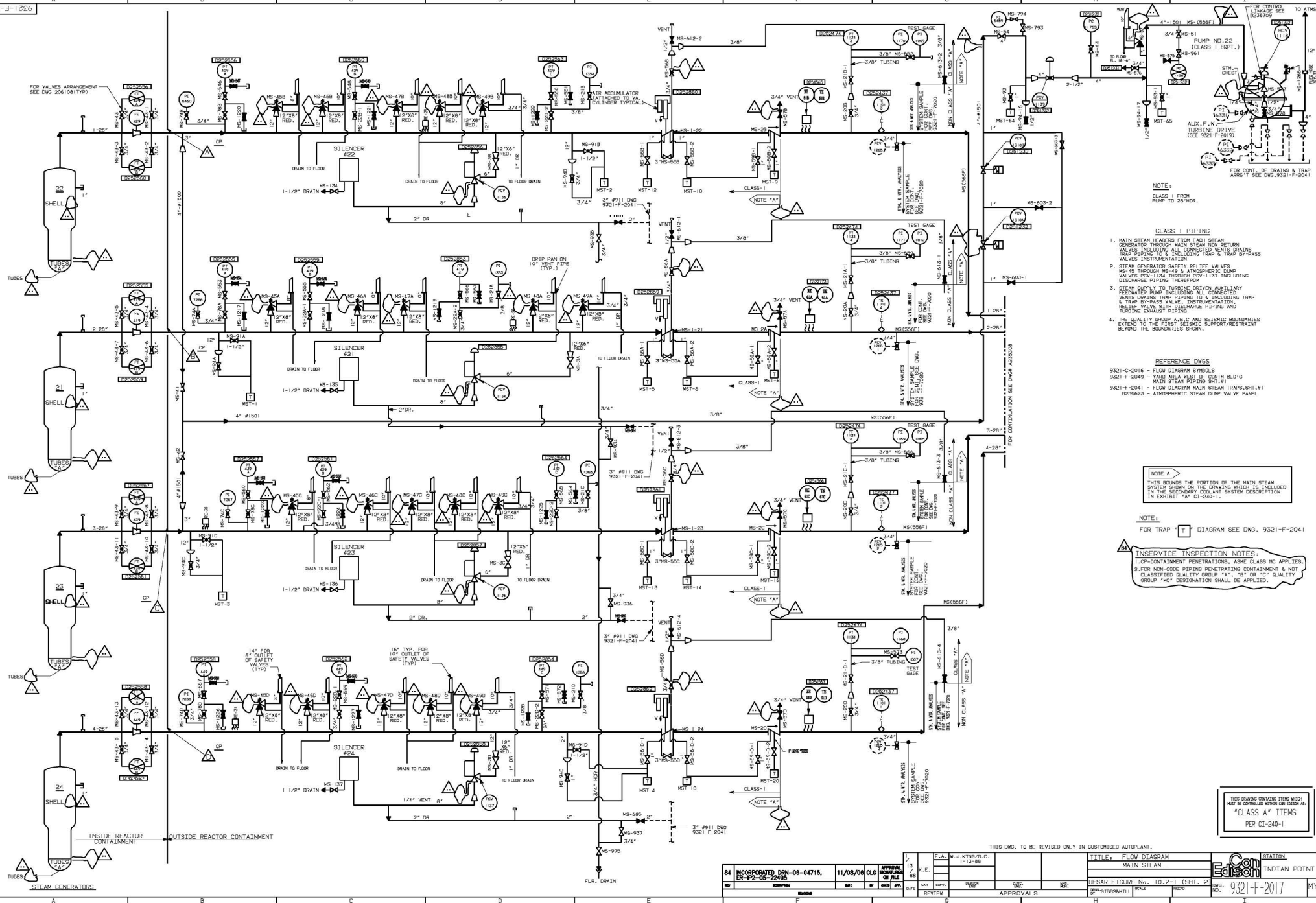
UFSAR FIGURE 10.1-7

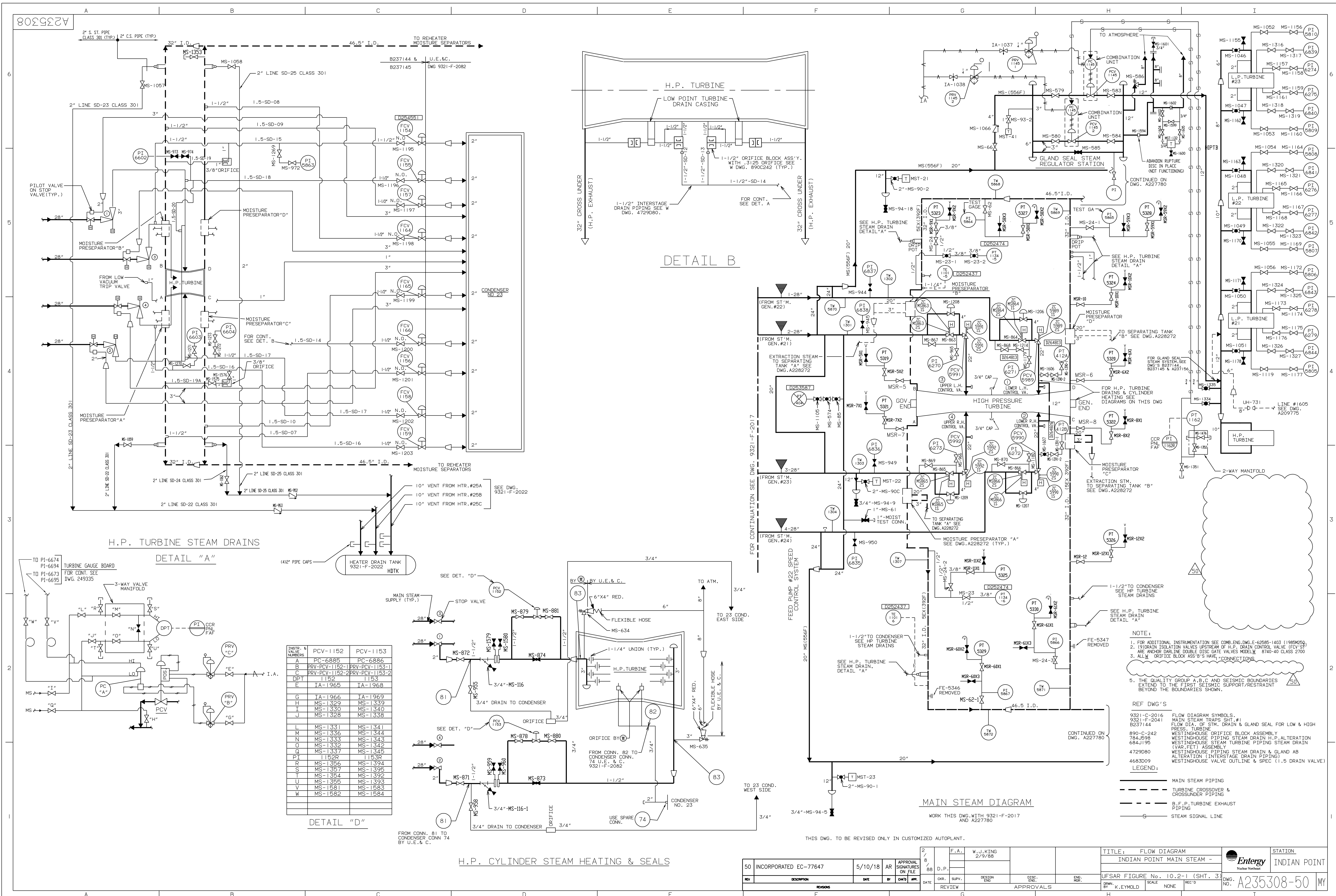
LOAD HEAT BALANCE DIAGRAM  
AT 1,034,072 KWE

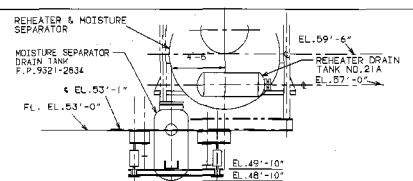
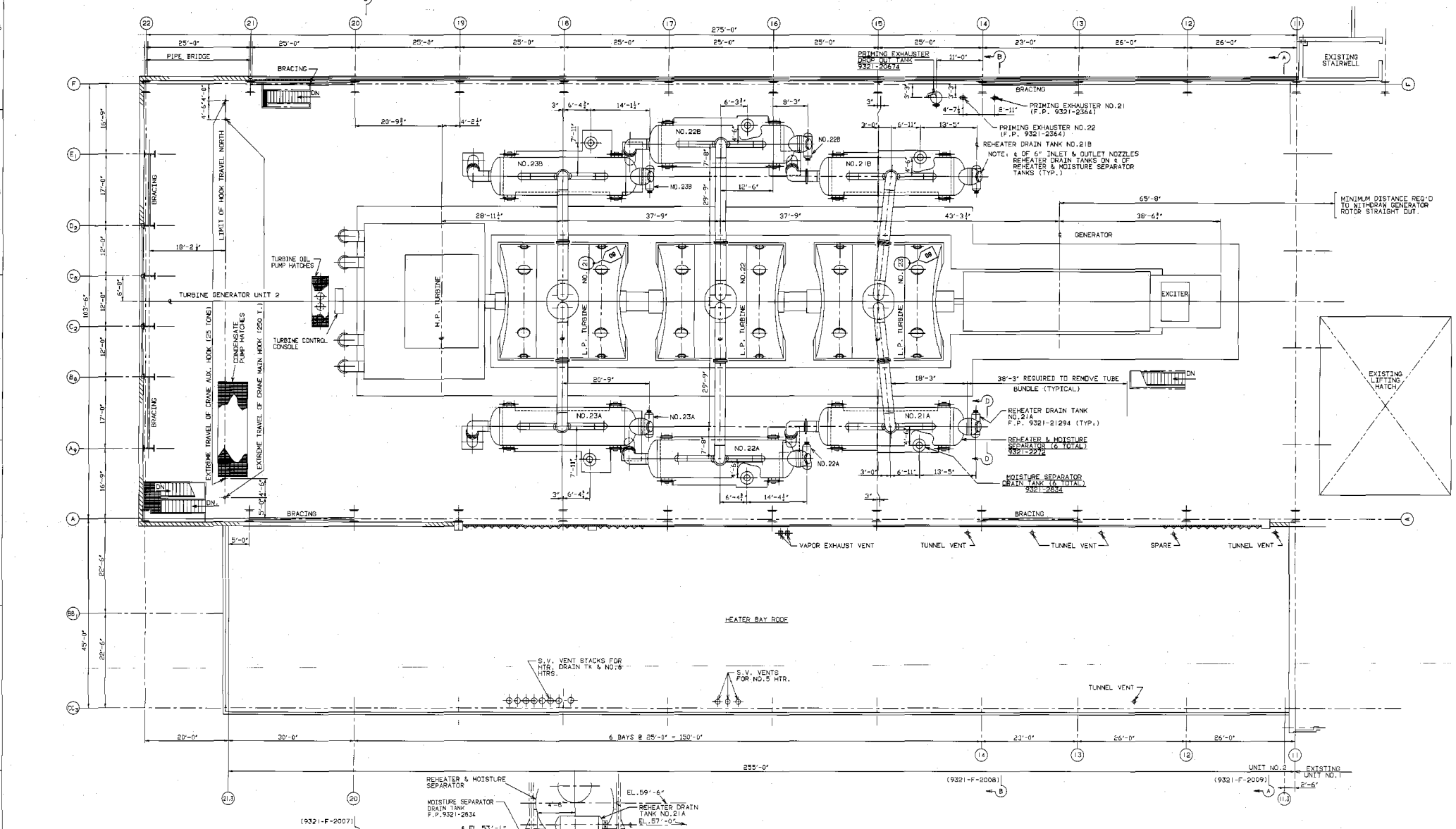
UFSAR FIGURE 10.1-7 REV. No. 19











PLAN  
SCALE: 1" = 1'-0"

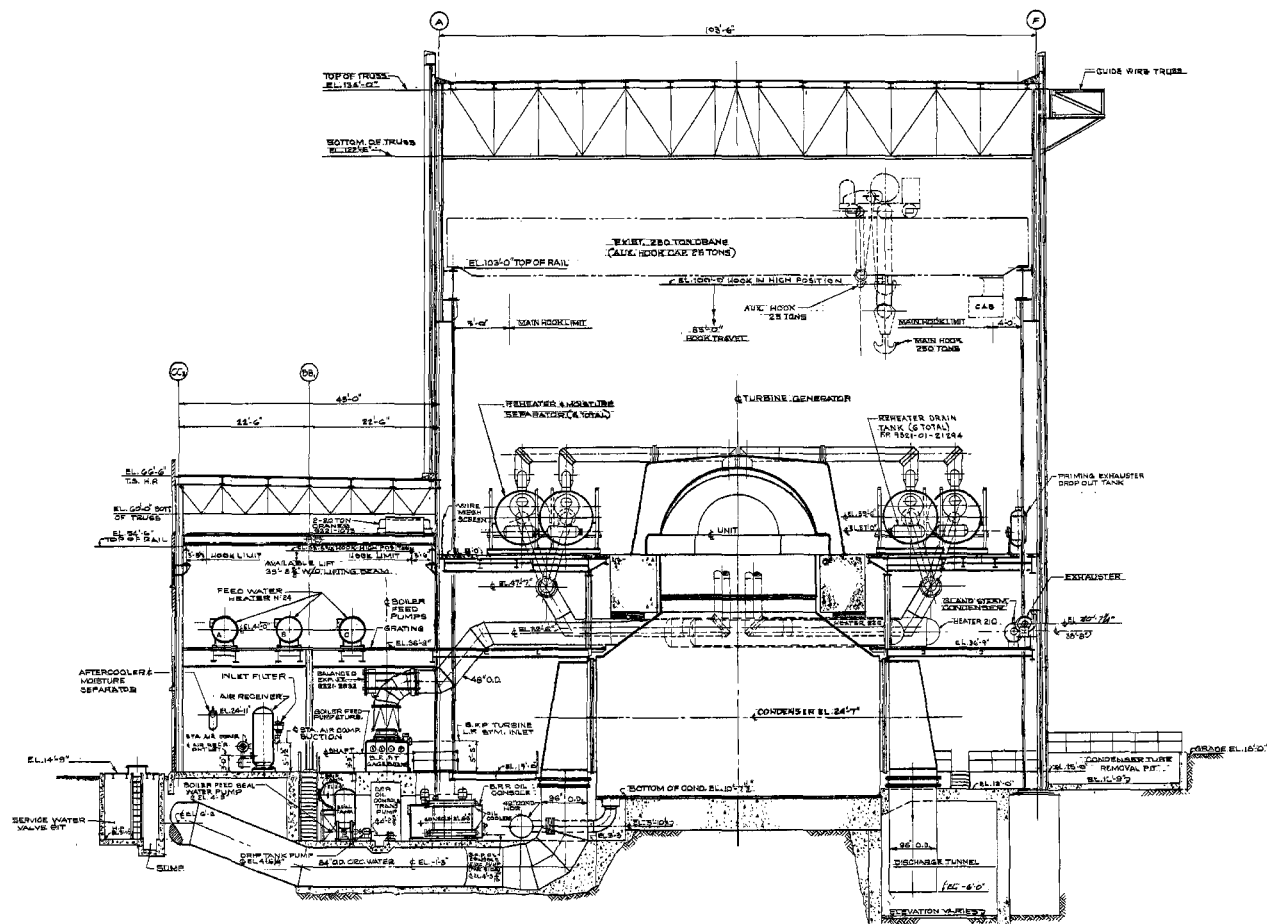
FOR GENERAL NOTES & REFER. DWGS.  
SEE DRG. NO. 9321-F-2006

THIS REVISION IS NON-CLASS PER G-240-1 UPDATED DRG. TO INCLUDE UTILITY TIEING NO. IN TITLE PREPARED FOR RECORD V.T. 04/26/09 04/26/09		F. BERNARD, SMITH 9-11-73		TITLE: TURBINE BLDG & HTR. BAY GEN. ARROW: OPERATING FUR-PLAN AT EL. 53'-0" UNIT NO. 2 - USAR FIGURE NO. 102-2 REVISIONS: SEE R. HARRIS 04/26/09		STATION INDIAN PT 9321-F-2004-9 MA
DATE REVIEW APPROVALS	DATE REVIEW APPROVALS	DATE REVIEW APPROVALS	DATE REVIEW APPROVALS	DATE REVIEW APPROVALS	DATE REVIEW APPROVALS	DATE REVIEW APPROVALS

(CON. ED. CO. DWG. NO. A200352)

COMPUTER GENERATED DRAWING NOT TO BE HAND REVISED

700002  
 8 ON KING  
 14-24 N.Y.S.D.



SECTION "B-B"  
 8321-F-2004  
 SCALE: 1/4" = 1'-0"

700002  
 8 ON KING  
 14-24 N.Y.S.D.

07

WESTINGHOUSE ELECTRIC CORPORATION  
 TURBINE BUILDING & HEATER BAY  
 GENERAL ARRANGEMENT CROSS SECTION  
 UFSAR FIGURE No. 10.2-3

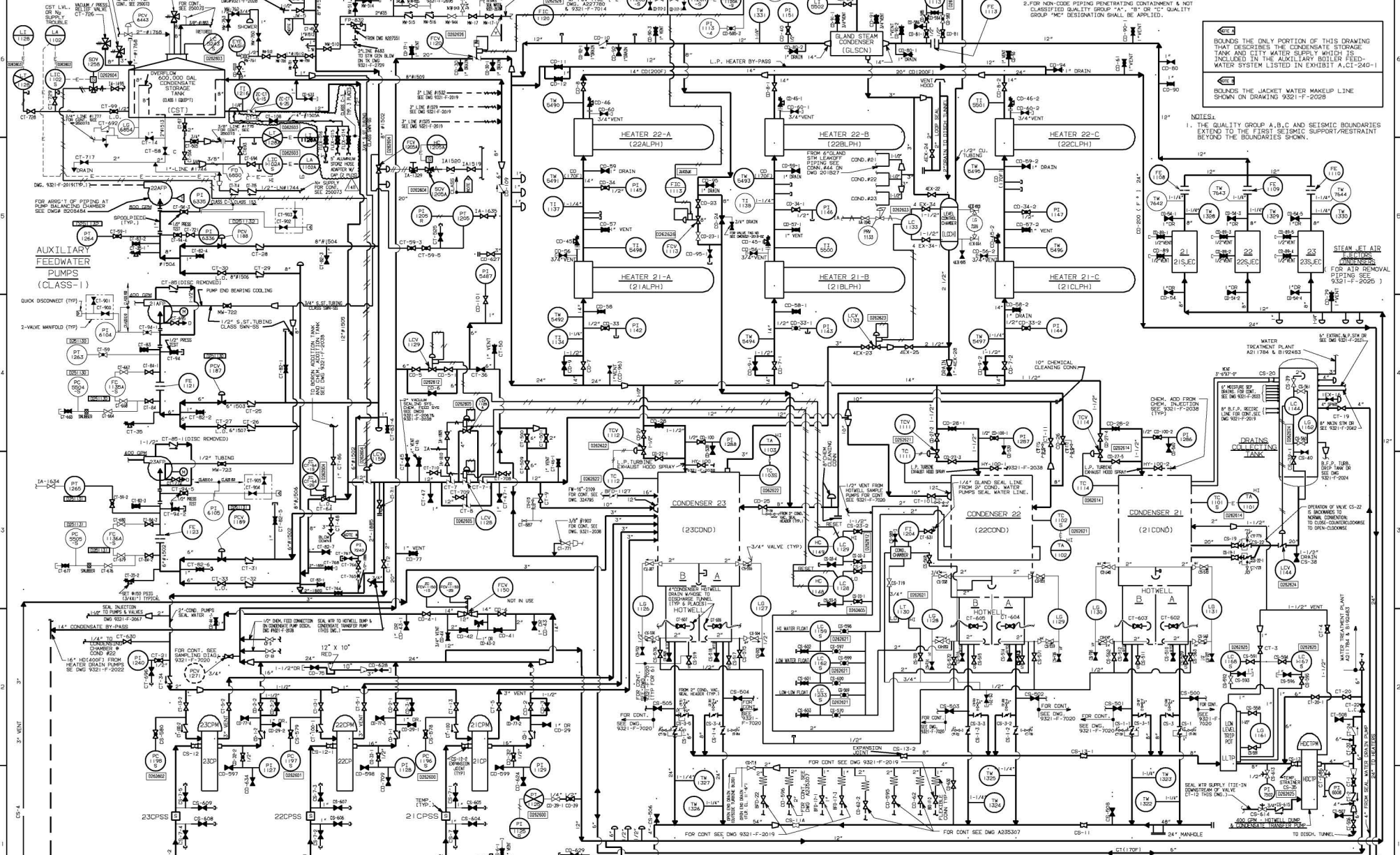
CONSOLIDATED EDISON COMPANY  
 INDIAN POINT GENERATING STATION  
 UNIT NO. 2

8321-F-2008-7 200856





9321-F-2018



INSERVICE INSPECTION NOTES:  
1. CP-CONTAINMENT PENETRATIONS, ASME CLASS MC APPLIES.  
2. FOR NON-CODE PIPING PENETRATIONS CONTAINMENT & NOT CLASSIFIED QUALITY GROUP "A", "B" OR "C" QUALITY GROUP "MC" DESIGNATION SHALL BE APPLIED.

BOUNDS THE ONLY PORTION OF THIS DRAWING THAT DESCRIBES THE CONDENSATE STORAGE TANK AND CITY WATER SUPPLY WHICH IS INCLUDED IN THE AUXILIARY BEILER FEED-WATER SYSTEM LISTED IN EXHIBIT A, C1-240-1

BOUNDS THE JACKET WATER MAKEUP LINE SHOWN ON DRAWING 9321-F-2028

NOTES:  
1. THE QUALITY GROUP A, B, C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

STEAM JET AIR SEPARATOR FOR AIR REMOVAL PIPING SEE 9321-F-2025

WATER TREATMENT PLANT 821 1784 & 8199483

CONDENSATE STORAGE TANK

OPERATION OF THE CS-22 IS BACKLOGGED TO NORMAL OPERATION TO DRAIN-CONTROLLER TO OPEN-CLOSURE

WATER TREATMENT PLANT 821 1784 & 8199483

WATER TREATMENT PLANT 821 1784 & 8199483

WATER TREATMENT PLANT 821 1784 & 8199483

WATER TREATMENT PLANT 821 1784 & 8199483

WORK THIS DWG WITH DWG #A235307

FOR CONT. SEE DWG #A235307

THIS DWG TO BE REVISED ONLY IN AUTOCAD

FOR CONT. SEE DWG #A235307

14B INCORPORATED EC-50146

04/26/16 SUB APPROVAL ON FILE

APPROVAL

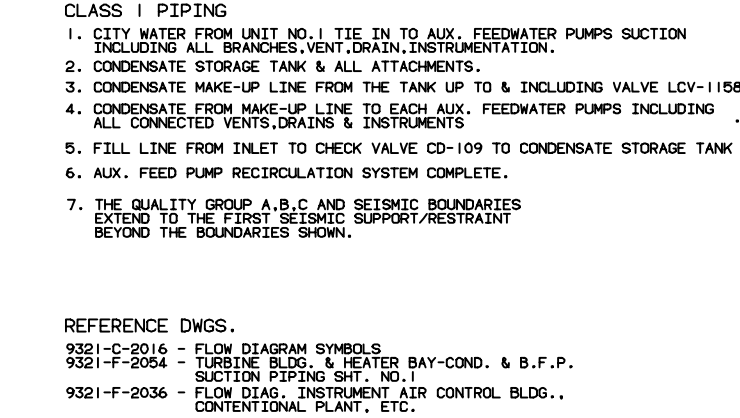
DATE

REVISION


BY

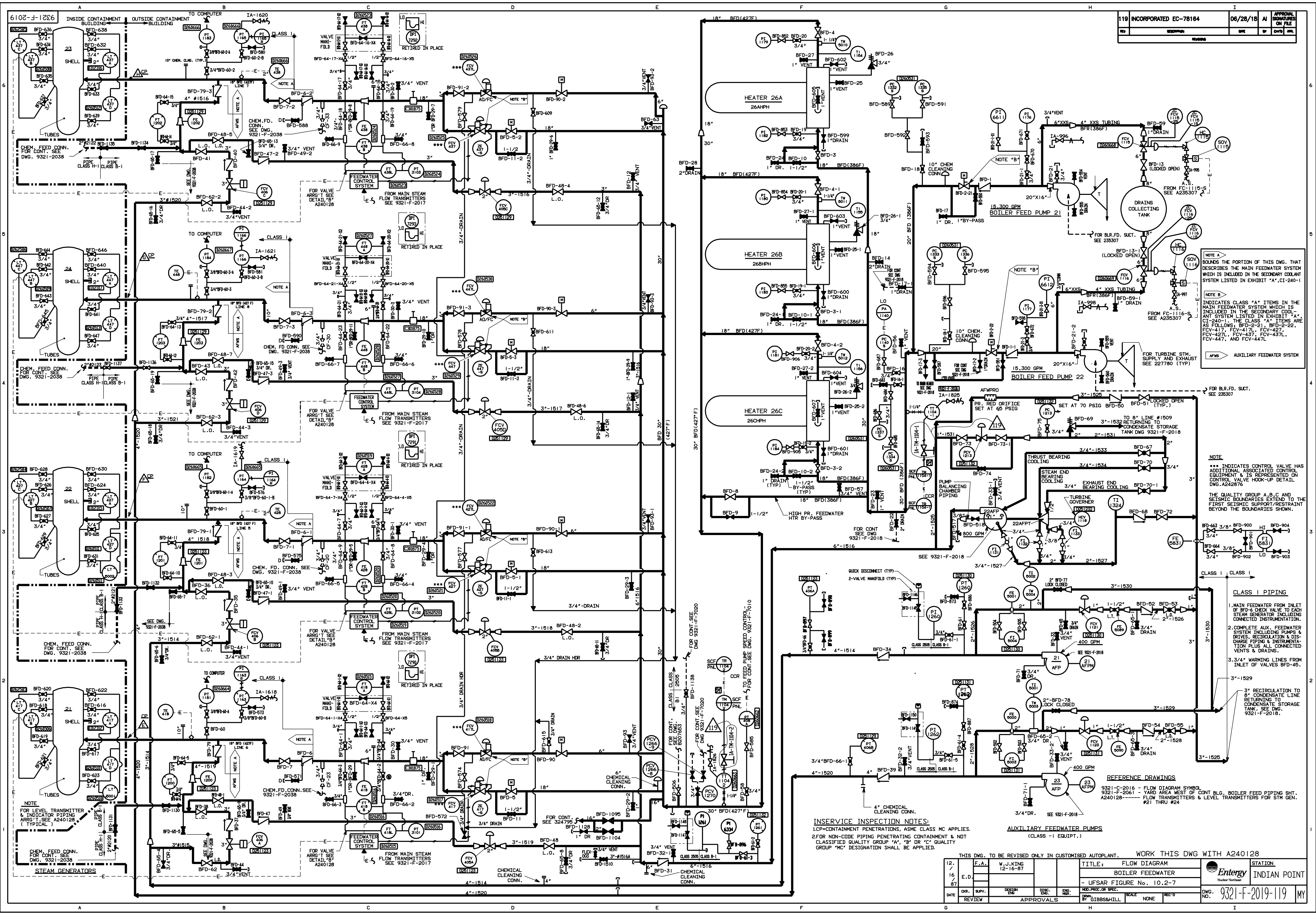
DATE

TITLE		STATION	
CONDENSATE & BOILER FEED PUMP SECTION		INDIAN POINT	
USAR FIGURE No. 10-2-5 (SHT. 1)		9321-2018	



THIS DWG. TO BE REVISED ONLY IN AUTOCAD

33		INCORPORATED EC-78164				6/28/18		A	APPROVAL SIGNATURES ON FILE		W. J. KING 9/28/87				TITLE: FLOW DIAGRAM CONDENSATE & BOILER FEED PUMP STATION -		 Indian Point		STATION: INDIAN POINT				
REV		DESCRIPTION				DATE		BY	DATE	APP	DESIGN ENG		DISC. ENG.		ENG. NO.		UFSAR FIGURE No. 10.2-5 (SHT. 2)		DWG. NO.: A235307-33				
APPROVALS																		BY: B. JOHN		SCALE: NONE		REV'D:	



119 INCORPORATED EC-78164	06/28/18	AI	APPROVAL SIGNATURES ON FILE
REV	DESCRIPTION	DATE	BY

NOTE A  
INDICATES CLASS "A" ITEMS IN THE MAIN FEEDWATER SYSTEM WHICH IS INCLUDED IN THE SECONDARY COOLANT SYSTEM LISTED IN EXHIBIT "A". CLASS "A" ITEMS ARE AS FOLLOWS: BFD-21, BFD-22, FCV-417, FCV-417L, FCV-427, FCV-427L, FCV-437, FCV-437L, FCV-447, AND FCV-447L.

NOTE B  
BOUNDS THE PORTION OF THIS DWG. THAT DESCRIBES THE MAIN FEEDWATER SYSTEM WHICH IS INCLUDED IN THE SECONDARY COOLANT SYSTEM LISTED IN EXHIBIT "A".

AUXILIARY FEEDWATER SYSTEM

NOTE  
\*\*\* INDICATES CONTROL VALVE HAS AN ADDITIONAL ASSOCIATED EQUIPMENT & IS REPRESENTED ON CONTROL VALVE HOOD-UP DETAIL DWG. A242876

THE QUALITY GROUP A, B, C AND SEISMIC BOUNDARIES EXTEND TO THE FIRST SEISMIC SUPPORT/RESTRAINT BEYOND THE BOUNDARIES SHOWN.

- CLASS I PIPING
- 1. MAIN FEEDWATER FROM INLET OF BFD-6 CHECK VALVE TO EACH STEAM GENERATOR INCLUDING CONNECTED INSTRUMENTATION.
  - 2. COMPLETE AUX. FEEDWATER SYSTEM INCLUDING PUMPS & DRIVES, REGULATION & DISCHARGE PIPING & INSTRUMENTATION PLUS ALL CONNECTED VENTS & DRAINS.
  - 3. 3/4" WARMING LINES FROM INLET OF VALVES BFD-45.
- 3"-1529
- 3" RECIRCULATION TO 8" CONDENSATE LINE RETURNING TO CONDENSATE STORAGE TANK. SEE DWG. 9321-F-2018.

INSERVICE INSPECTION NOTES:  
1. LCP=CONTAINMENT PENETRATIONS, ASME CLASS MC APPLIES.  
2. FOR NON-CODE PIPING PENETRATING CONTAINMENT & NOT CLASSIFIED QUALITY GROUP "A", "B" OR "C" QUALITY GROUP "MC" DESIGNATION SHALL BE APPLIED.

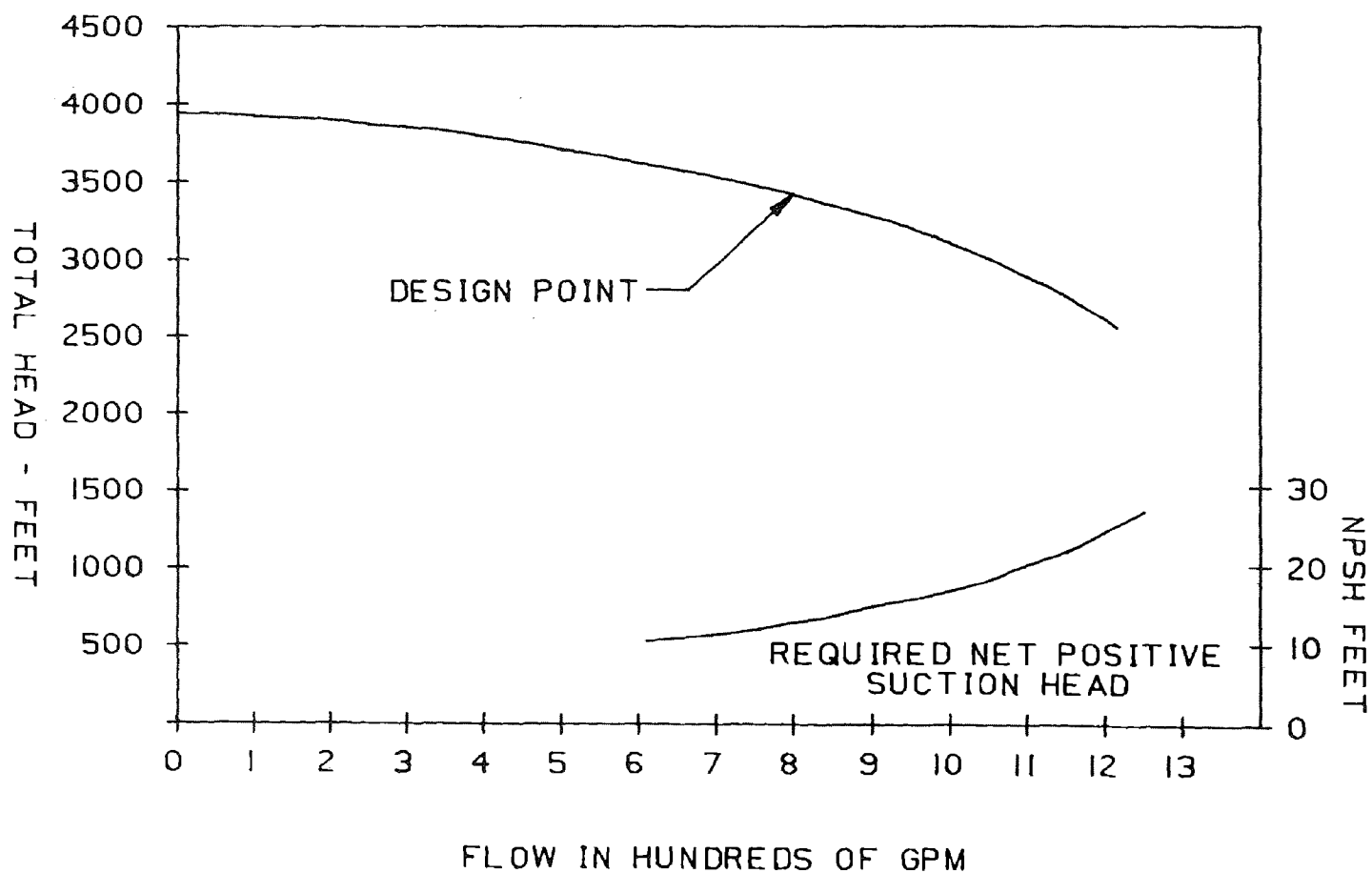
REFERENCE DRAWINGS  
9321-C-2016 - FLOW DIAGRAM SYMBOLS  
9321-F-2061 - YARD AREA WEST OF CONT. BLDG. BOILER FEED PIPING SHIT.  
A240128 - FLOW TRANSMITTERS & LEVEL TRANSMITTERS FOR STM GEN. #21 THRU #24

AUXILIARY FEEDWATER PUMPS  
(CLASS - 1 EQUIP.)

THIS DWG. TO BE REVISED ONLY IN CUSTOMISED AUTOPLANT. WORK THIS DWG WITH A240128

12.	F.A.	W.J. KING	12-16-87	TITLE: FLOW DIAGRAM	STATION: INDIAN POINT
16	E.D.			BOILER FEEDWATER	
87				- UPSAR FIGURE No. 10.2-7	
DATE	DES. SUPV.	DESIGN ENR.	DATE	MOD. PROC. OR SPEC.	DWG. NO. 9321-F-2019-119
				BY GIBBS&HILL	
				APPROVALS	





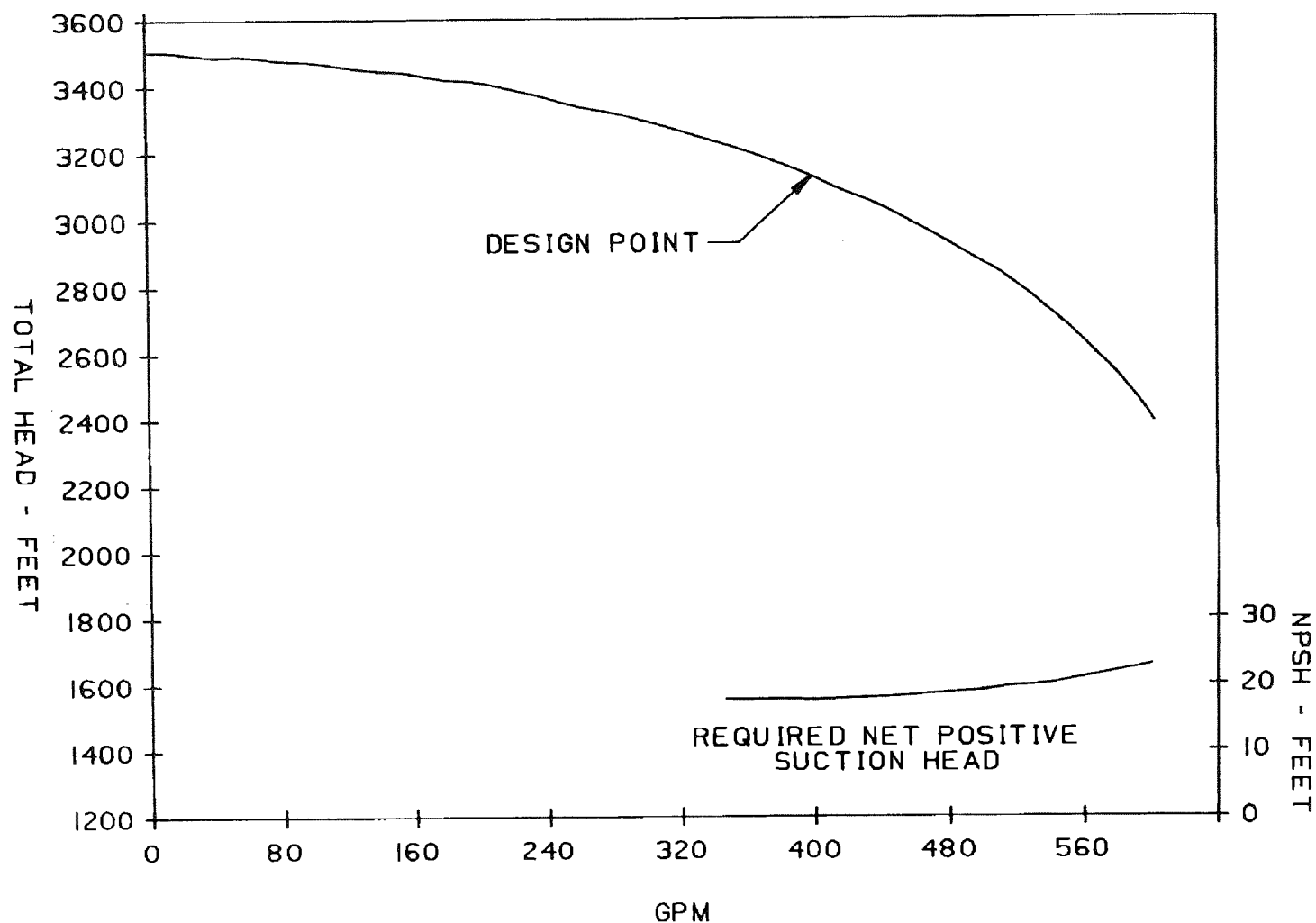
INDIAN POINT UNIT No. 2

UFSAR FIGURE 10.2-8

STEAM TURBINE-DRIVEN AUXILIARY  
FEEDWATER PUMP ESTIMATED  
PERFORMANCE CHARACTERISTICS

MIC. No. 1999MC3918

REV. No. 17A



INDIAN POINT UNIT No. 2

UFSAR FIGURE 10.2-9

MOTOR-DRIVEN AUXILIARY  
FEEDWATER PUMP ESTIMATED  
PERFORMANCE CHARACTERISTICS

MIC. No. 1999MC3919

REV. No. 17A