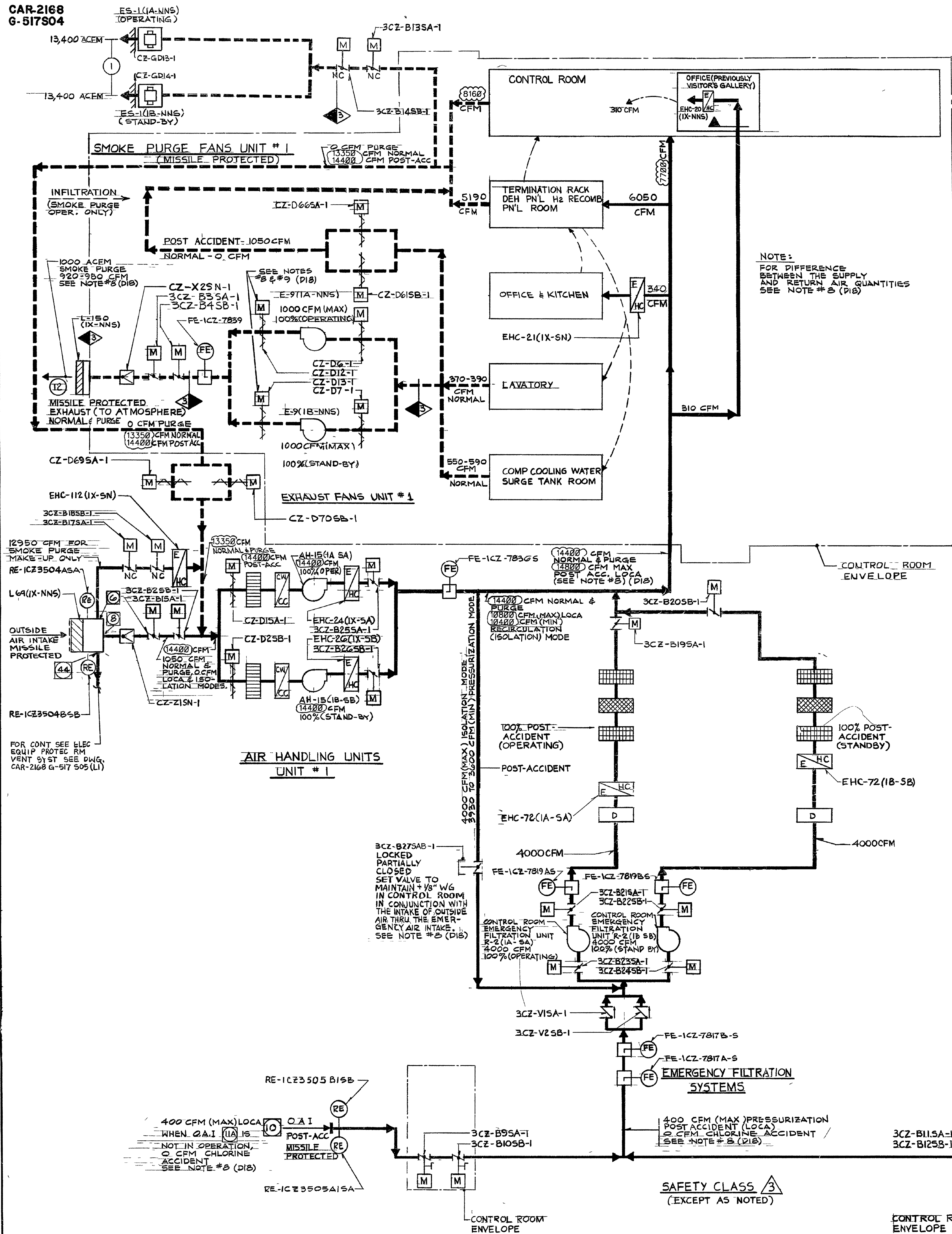




Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	8-G-0517 S04		
Document Revision Number :	013		
Document EC Number :			
Change Reason :	EC0000284333		
Document Title :	HVAC-RAB CONTROL ROOM AIR FLOW DIAGRAM		
Brennan, Jerry W.	PREPARER		4/23/2018
Pappur, Manjunath V.	APPROVER		4/26/2018
Notes :			

CAR-2168
G-517504



NOTES
1) AIR FLOW DIAGRAMS ARE SCHEMATIC AND ARE NOT INTENDED TO REPRODUCE THE ACTUAL SEQUENCE OF DUCT CONNECTIONS AS THEY OCCUR ON THE PHYSICAL DRAWINGS.

2) FOR LOCATION OF BALANCING DAMPERS REFER TO THE PHYSICAL DRAWINGS.

3) FLOW ELEMENTS TO BE INSTALLED WHERE SPACE PERMITS OR IN COMMON DUCT.

4) AIR FLOW QUANTITIES SHOWN SHALL BE USED FOR SYSTEM BALANCING AT THE APPLICABLE MODE OF OPERATION.

5.

6) FOR SYMBOLS & ABBREVIATIONS SEE DWG. CAR-2168-G-528502.

7) FOR PLANT AIRBORNE EFFLUENT RELEASE POINTS DESIGNATED THUS (1) ETC AND FOR THE CONTROL RM. OUTSIDE AIR INTAKES DESIGNATED THUS (2) ETC SEE FSAR FIG. 9.4.0-2.

8) CONTROL ROOM ENVELOPE CALCULATED LEAKAGE @ 1/8" W.G. IS WITHIN THE RANGE OF 10 TO 150 CFM. THE ACTUAL LEAKAGE TO BE DETERMINED BY CONTROL ROOM ENVELOPE LEAK TESTING CAPACITY OF SYSTEM ACCOMMODATES 400 CFM.

9) LEAK RATED CAPACITY 1000 CFM, HOWEVER, LEAK FLOW SHALL BE AUTOMATICALLY THROTTLED AS REQUIRED BY THE MODULATING DAMPER CZ-D12-1 & CZ-D13-1 ACTED UPON BY THE CONTROL ROOM PRESSURE DIFFERENTIAL CONTROLLER TO MAINTAIN THE 1/8" W.G. PRESSURE DIFFERENTIAL IN THE NORMAL MODE OF OPERATION.

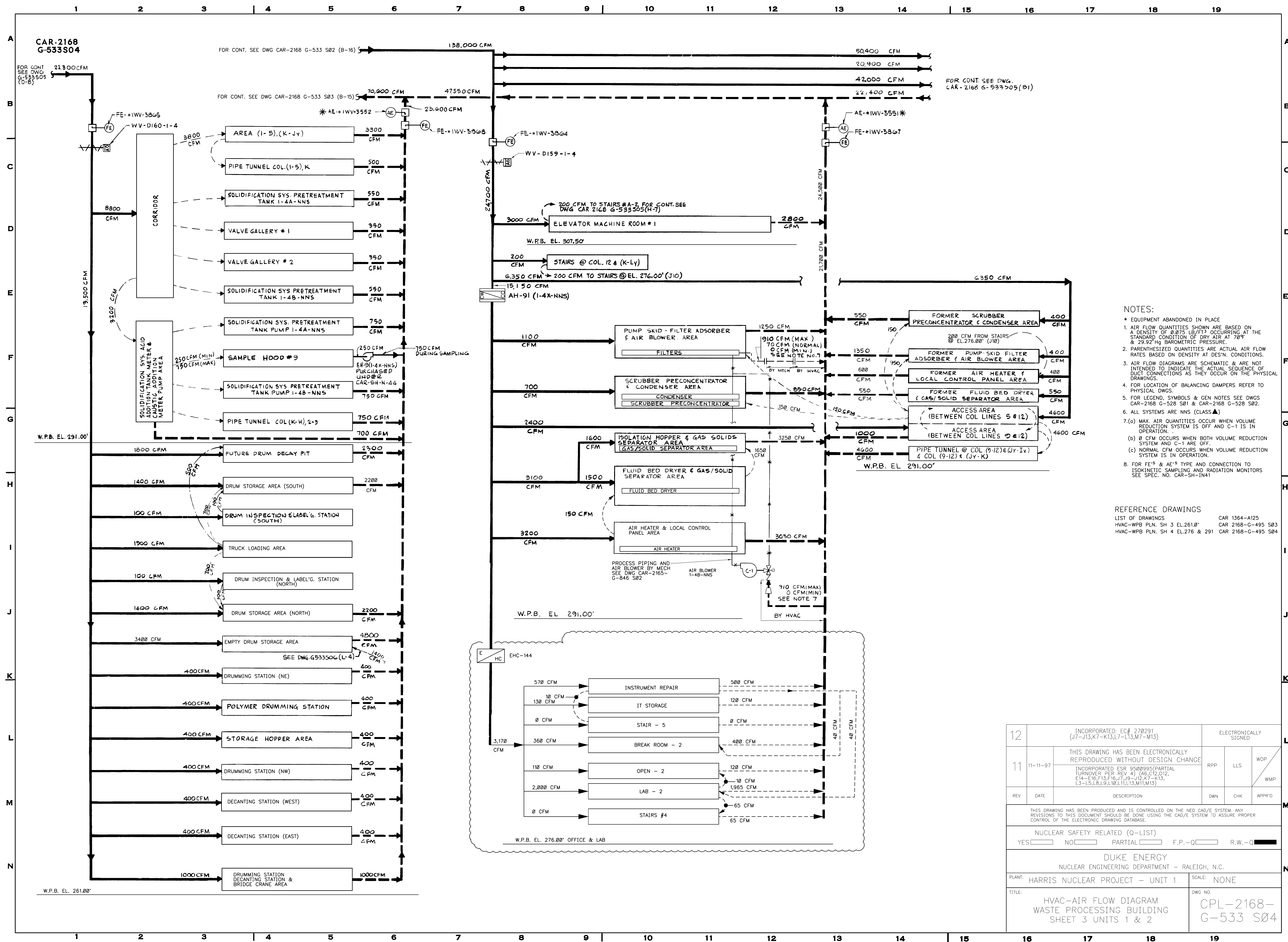
REFERENCE DRAWINGS

HVAC-RAB PLAN UNIT #1 EL 305 2168 G 507501
HVAC-RAB CONT RM UNIT #1 EL 305 G 525502
HVAC-RAB PLAN UNIT #1 EL 286 G 806

QUALITY LEVEL:	NUCLEAR SAFETY RELATED IN PART
PLANT:	HARRIS PROJECT - UNIT 1
TITLE:	HVAC-REACTOR AUXILIARY BUILDING CONTROL ROOM AIR FLOW DIAGRAM
PLANT Dwg NO.:	2168-G-0517504
REV	DESCRIPTION
13	INCORPORATED: EC 284333 (05/04/72, 03/04/06, 07/02/14)
14	ELECTRONICALLY SIGNED
15	APPROVAL

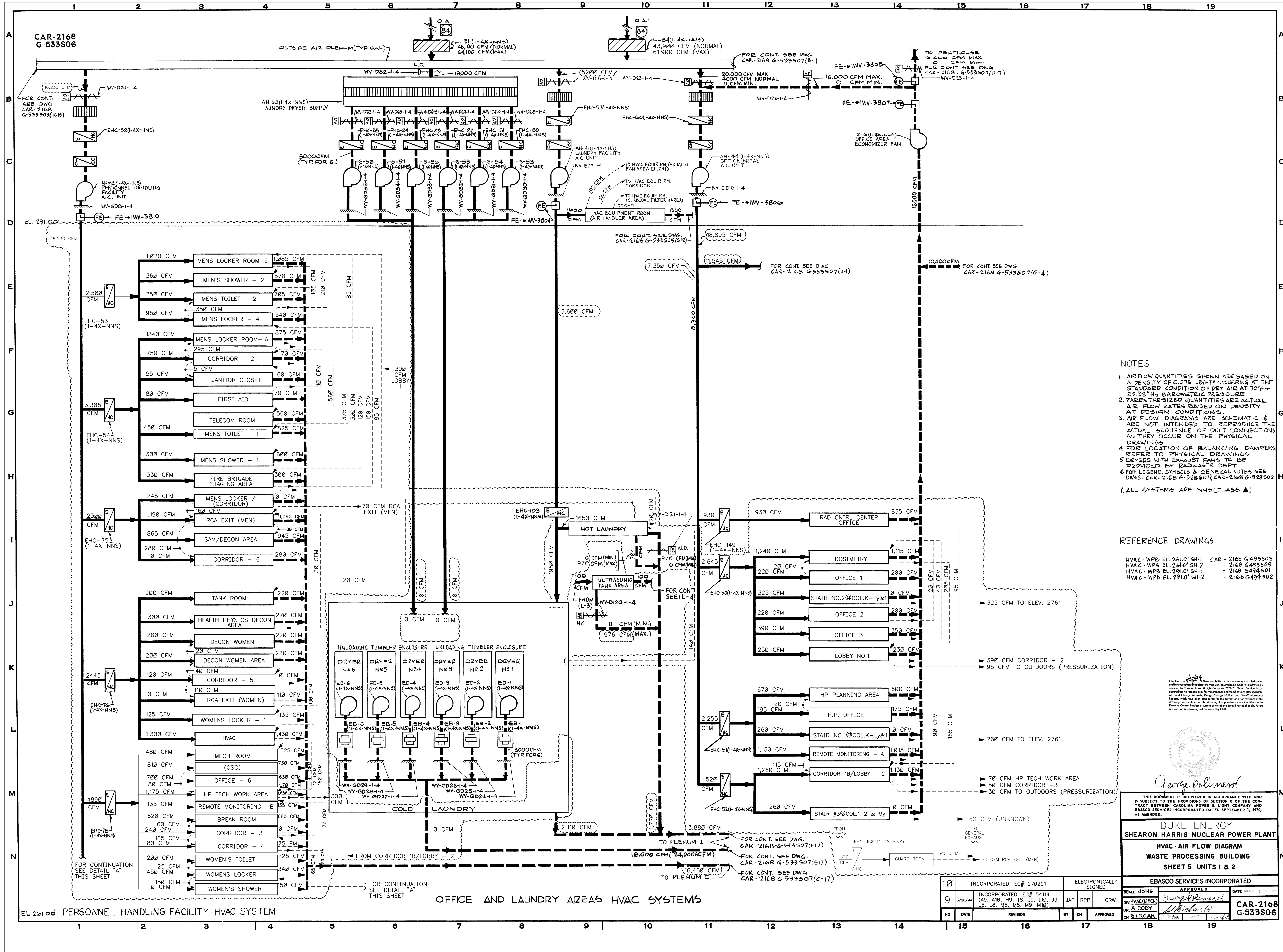


Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	8-G-0533 S04		
Document Revision Number :	012		
Document EC Number :			
Change Reason :	EC0000270291		
Document Title :	HVAC-AIR FLOW DIAG WPB SH 3 UNITS 1-2		
Mehta, Ameeta	Preparer		7/19/2017
Scattergood, Tom	Approver		7/19/2017
Notes :			





Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	8-G-0533 S06		
Document Revision Number :	010		
Document EC Number :			
Change Reason :	EC0000270291		
Document Title :	HVAC-AIR FLOW DIAGRAM WASTE PROCESSING BUILDING SHEET 5 UNITS 1 & 2		
Mehta, Ameeta	Preparer		7/18/2017
Scattergood, Tom	Approver		7/18/2017
Notes :			



- NOTES
1. AIR FLOW QUANTITIES SHOWN ARE BASED ON A DENSITY OF 0.075 LB/FT³ OCCURRING AT THE STANDARD CONDITION OF DRY AIR AT 70°F + 23.92" Hg BAROMETRIC PRESSURE
 2. PARENT SIZED QUANTITIES ARE ACTUAL AIR FLOW RATES BASED ON DENSITY AT DESIGN CONDITIONS
 3. AIR FLOW DIAGRAMS ARE SCHEMATIC & ARE NOT INTENDED TO REPRODUCE THE ACTUAL SEQUENCE OF DUCT CONNECTIONS AS THEY OCCUR ON THE PHYSICAL DRAWINGS
 4. FOR LOCATION OF BALANCING DAMPERS REFER TO PHYSICAL DRAWINGS
 5. DRYERS WITH EXHAUST FANS TO BE PROVIDED BY RADIOACTIVE DEPT
 6. FOR LEGEND, SYMBOLS & GENERAL NOTES SEE DWG'S: CAR-2168 G-528501; CAR-2168 G-528502
 7. ALL SYSTEMS ARE NNS (CLASS 6)

- REFERENCE DRAWINGS
- | | |
|----------------------------|---------------------|
| HVAC - WPB EL. 261.0' SH-1 | CAR - 2168 G-495503 |
| HVAC - WPB EL. 261.0' SH-2 | - 2168 G-495509 |
| HVAC - WPB EL. 291.0' SH-1 | - 2168 G-494501 |
| HVAC - WPB EL. 291.0' SH-2 | - 2168 G-494502 |

Effective as of 12/1/84
I hereby certify that I am a duly licensed Professional Engineer in the State of North Carolina and that I am the author of the design and calculations shown on this drawing and that I am not aware of any falsification of the data used in the design and calculations shown on this drawing.
George Poliment
Professional Engineer
No. 12345
State of North Carolina

THIS DOCUMENT IS DELIVERED IN ACCORDANCE WITH AND IS SUBJECT TO THE PROVISIONS OF SECTION X OF THE CONTRACT BETWEEN CAROLINA POWER & LIGHT COMPANY AND EBASCO SERVICES INCORPORATED DATED SEPTEMBER 1, 1970, AS AMENDED.

DUKE ENERGY
SHEARON HARRIS NUCLEAR POWER PLANT
HVAC - AIR FLOW DIAGRAM
WASTE PROCESSING BUILDING
SHEET 5 UNITS 1 & 2

EBASCO SERVICES INCORPORATED	
SCALE NONE	APPROVED
DATE 10/26/84	DATE 10/26/84
DR. A. CODY	CH. S. CAR
NO. 1	DATE 10/26/84
REVISION	BY CH
APPROVED	APPROVED

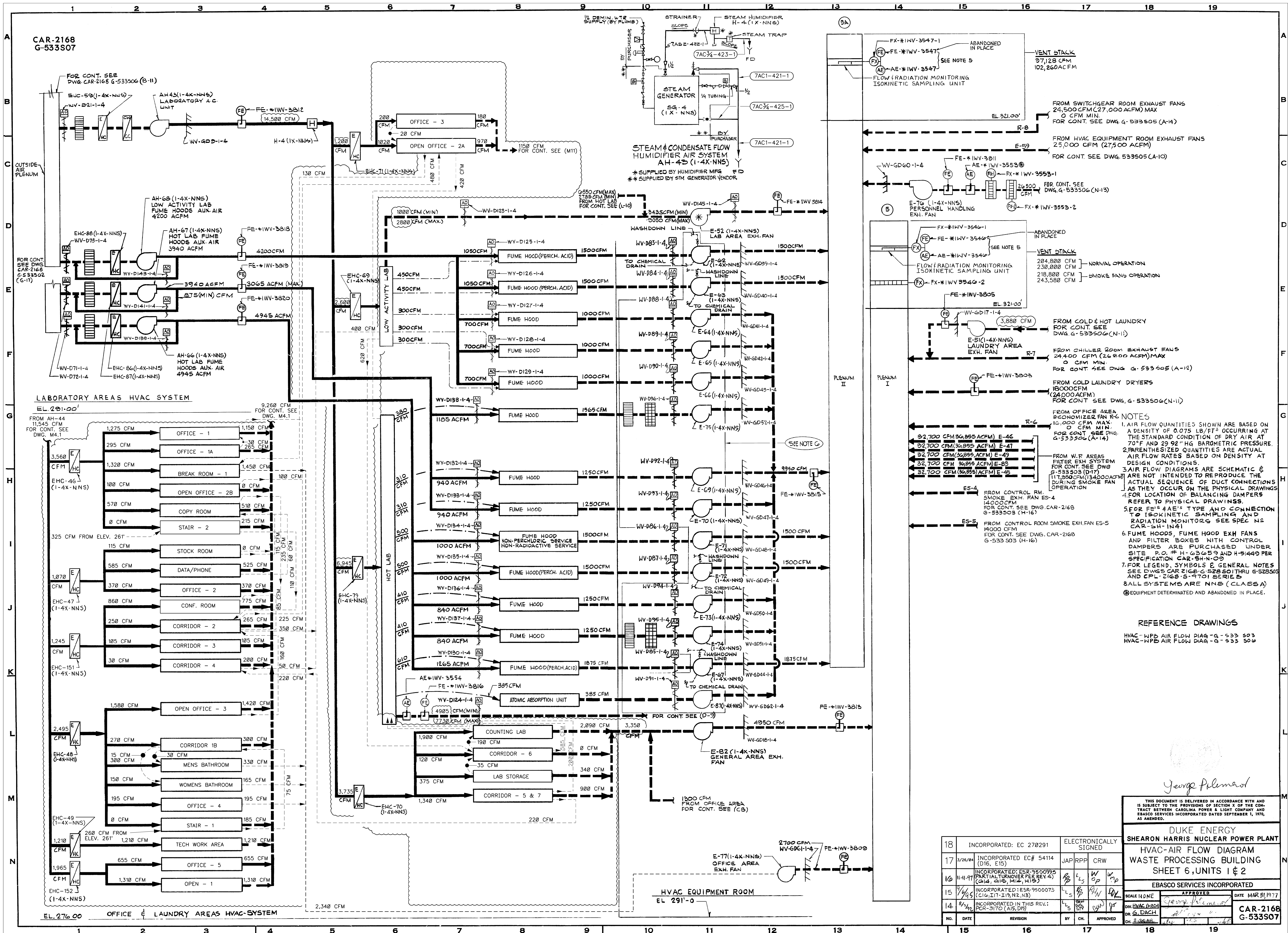
CAR-2168 G-533506

10	INCORPORATED: EC# 270291	ELECTRONICALLY SIGNED
9	INCORPORATED: EC# 54114 (A9, A10, H9, I9, J9, L5, L8, M5, M8, M9, M10)	JAP RPP CRW
NO	DATE	REVISION
1	10/26/84	1



Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	8-G-0533 S07		
Document Revision Number :	018		
Document EC Number :			
Change Reason :	EC0000270291		
Document Title :	HVAC-AIR FLOW DIAGRAM WASTE PROCESSING BUILDING SHEET 6, UNITS 1 & 2		
Mehta, Ameeta	Preparer		7/19/2017
Scattergood, Tom	Approver		7/19/2017
Notes :			

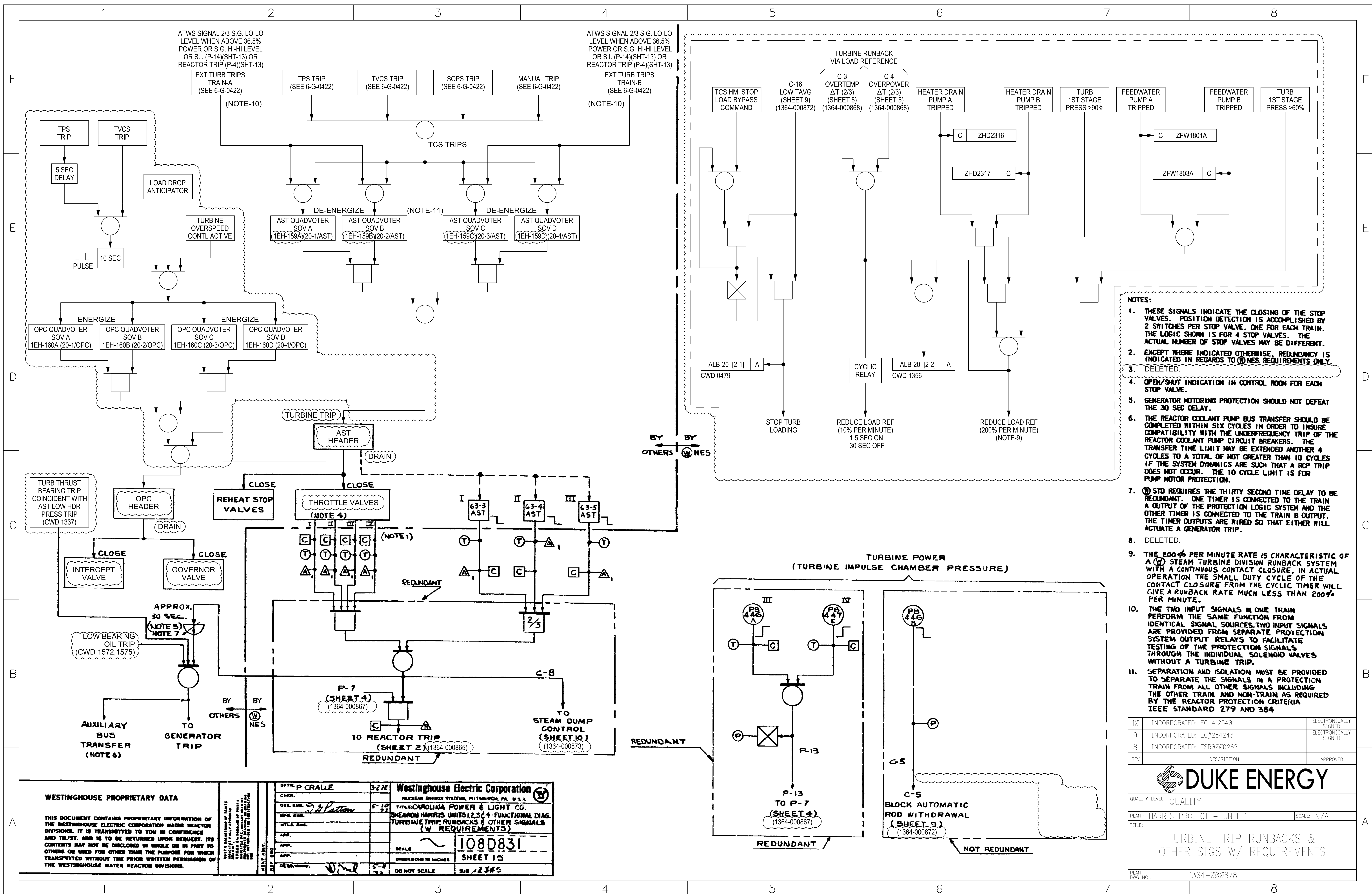
CAR-2168
G-533S07



18	INCORPORATED: EC 270291	ELECTRONICALLY SIGNED
17	3/26/84 INCORPORATED EC# 54114 (D16, E15)	JAP RPP CRW
16	INCORPORATED: ESR-9500995 (PARTIAL TURNOUT PER REV 4) (C14, C15, H14, H15)	L ₅ W ₅ O ₅ M ₅
15	11-11-77 INCORPORATED: ESR-9500073 (C16, I17-I19, N2, N3)	L ₅ W ₅ O ₅ M ₅
14	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
13	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
12	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
11	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
10	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
9	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
8	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
7	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
6	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
5	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
4	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
3	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
2	INCORPORATED IN THIS REV: PCR-3170 (A15, D17)	L ₅ W ₅ O ₅ M ₅
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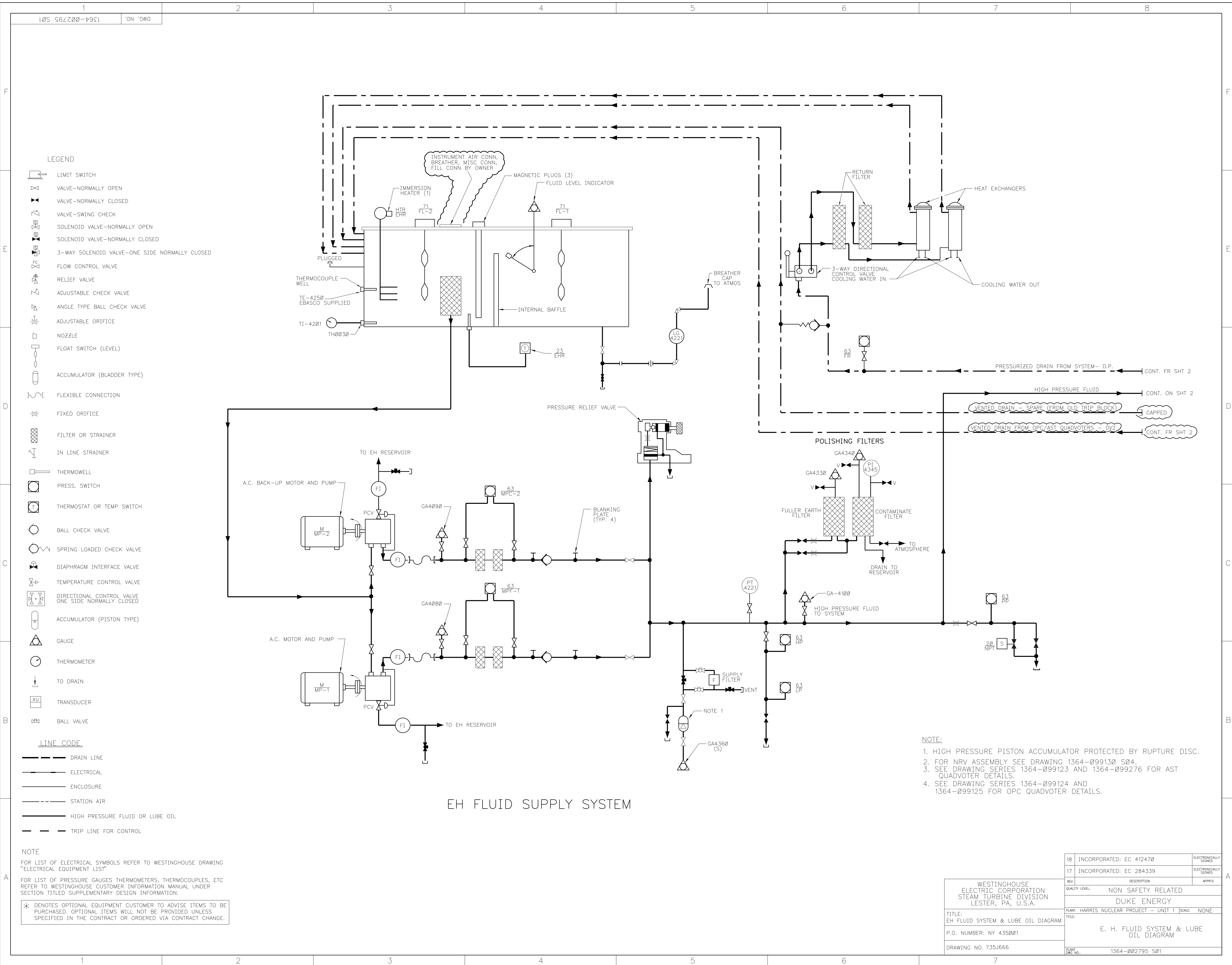


Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	1364-000878	
Document Revision Number :	010	
Document EC Number :		
Change Reason :	EC0000412540	
Document Title :	TURBINE TRIP RUNBACKS & OTHER SIGS W/REQUIREMENTS	
Pearson, Drew	PREPARER	8/1/2018
Morales, Gustavo J	APPROVER	8/13/2018
Martinelli, Nick	APPROVER	8/13/2018
Notes :		





Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	1364-002795 S01	
Document Revision Number :	018	
Document EC Number :		
Change Reason :	EC0000412470	
Document Title :	EH FLUID SYSTEM & LUBE OIL DIAGRAM	
Brennan, Jerry W.	Preparer	5/23/2018
Pitser, Ken	approver	5/23/2018
Notes :		

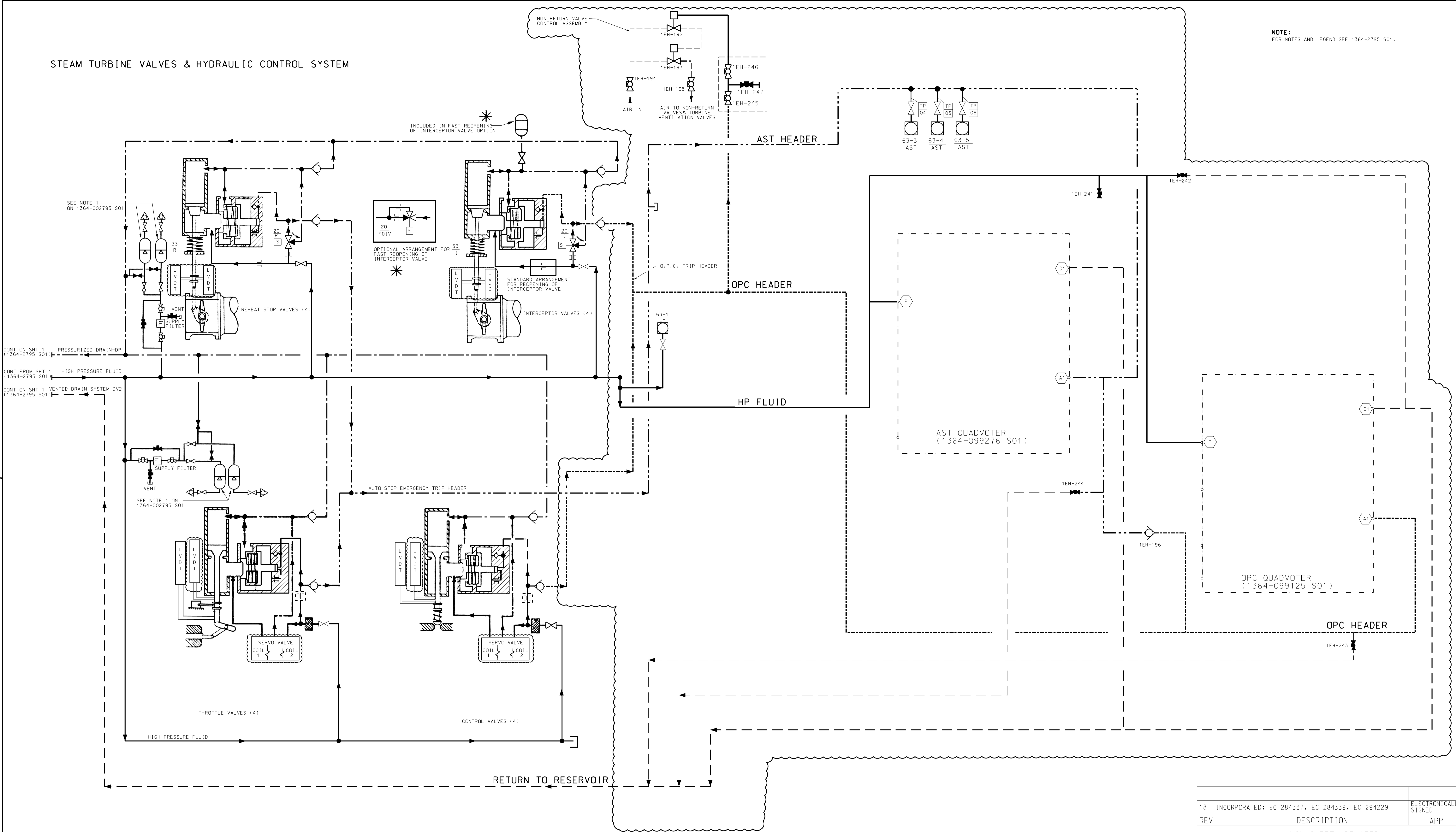




Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	1364-002795 S02	
Document Revision Number :	018	
Document EC Number :		
Change Reason :	EC0000284337;EC0000284339;EC0000294229	
Document Title :	E.H. FLUID SYSTEM AND LUBE OIL DIAGRAM	
Brennan, Jerry W.	Preparer	5/4/2018
Pitser, Ken	APPROVER	5/5/2018
Notes :		

STEAM TURBINE VALVES & HYDRAULIC CONTROL SYSTEM

NOTE:
FOR NOTES AND LEGEND SEE 1364-2795 S01.



Westinghouse Electric Corporation
STEAM TURBINE DIVISION LESTER PA USA
OF PA: TITLE
EH FLU SYS & LUB DIAG 735 J 666
DWS NOT TO SCALE 2 700 298 000 SHEET 2 OF 3

18	INCORPORATED: EC 284337, EC 284339, EC 294229	ELECTRONICALLY SIGNED
REV	DESCRIPTION	APP
QUALITY LEVEL: NON-SAFETY RELATED		
DUKE ENERGY		
PLANT:	HARRIS NUCLEAR PLANT - UNIT 1	SCALE: N/A
TITLE:	E.H. FLUID SYSTEM & LUBE OIL DIAGRAM	
PLANT DWG NO.:	1364-002795 S02	



Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	1364-002795 S03	
Document Revision Number :	019	
Document EC Number :		
Change Reason :	EC0000284339;EC0000294229	
Document Title :	1-2 E.H.FLUID SYS. & LUBE DIA.1-3	
Brennan, Jerry W.	PREPARER	5/3/2018
Pitser, Ken	APPROVER	5/3/2018
Notes :		

TURBINE-GENERATOR LUBRICATION SYSTEM

INSTR AIR IN

VENT

IN

OUT

TURNING GEAR ENGAGED
"ENGAGE AIR ON"

NUMBER OF BEARINGS LIFTED (G)
(2 GEN. BEARINGS)
(4 LP TURB BRGS)

PRESSURE SWITCH
62 ON BEARING
BL NO 4 ONLY

MAIN OIL PUMP

OIL SEAL RING

BEARING OIL

MAIN OIL PUMP SUCTION

MAIN OIL PUMP DISCHARGE

HP SEAL OIL BACK-UP

OIL TO GENERATOR BEARINGS

HP SEAL OIL BACK-UP

LP SEAL OIL BACK-UP

EMERGENCY OIL MOTOR/PUMP

BEARING OIL MOTOR/PUMP

AUXILIARY BEARING LIFT PUMP/MOTOR

BEARING LIFT MOTOR/PUMP

OIL RETURN

LUB OIL RESERVOIR

EJECTOR

OIL DRAIN GUARD

SEAL OIL BACK-UP MOTOR/PUMP

IMMERSION HEATER (H)

VENTED SIGHT FLOWS

VAPOR EXTRACTOR (1A-NNS)

VAPOR EXTRACTOR (1B-NNS)

HEAT EXCHANGER

FLUSHING CONN.

PT-4119

GA4020

GA4010

GA4030

PI 4134

PS 4135

PI 4783

PI 4197 A

PS 4197 B

PS 4197 C

TE-4102

TI-4102

TM0020

TM0010

TI-4101

TE-4101

FOR CONT. SEE 2165-G-053 (B12)

* THERMOBELLS FOR HEATER THERMOSTATS

19 INCORPORATED: EC 294229, EC 284339

REV DESCRIPTION ELECTRONICALLY SIGNED APPROVED

DUKE ENERGY

QUALITY LEVEL: NON NUCLEAR SAFETY

PLANT: HARRIS PROJECT - UNIT 1 SCALE: N/A

TITLE: E.H. FLUID SYS. & LUBE DIA.

PLANT DWG NO.: 1364-002795 S03

13-A-4681

Westinghouse Electric Corporation

STEAM TURBINE DIVISION, LESTER, PA, U.S.A.


EN FLU SYS & LUB DIAG

735J666

30 JUN 71

2-26-75

3 OF 3

19	INCORPORATED: EC 294229, EC 284339	ELECTRONICALLY SIGNED
REV	DESCRIPTION	APPROVED
 <h1>DUKE ENERGY</h1>		
QUALITY LEVEL: NON NUCLEAR SAFETY		
PLANT: HARRIS PROJECT - UNIT 1		SCALE: N/A
TITLE: E.H.FLUID SYS. & LUBE DIA.		
PLANT DWG. NO.: 1364-002795 S03		

Westinghouse Electric Corporation
STEAM TURBINE DIVISION, LESTER, PA., U.S.A.

04	EN FLU SVS + LUB DIAG	735.1666
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SPC	FROM DATE TO DATE	ISSUE DATE	1	00000000
			THE	PAGE 3 OF 3

7	8
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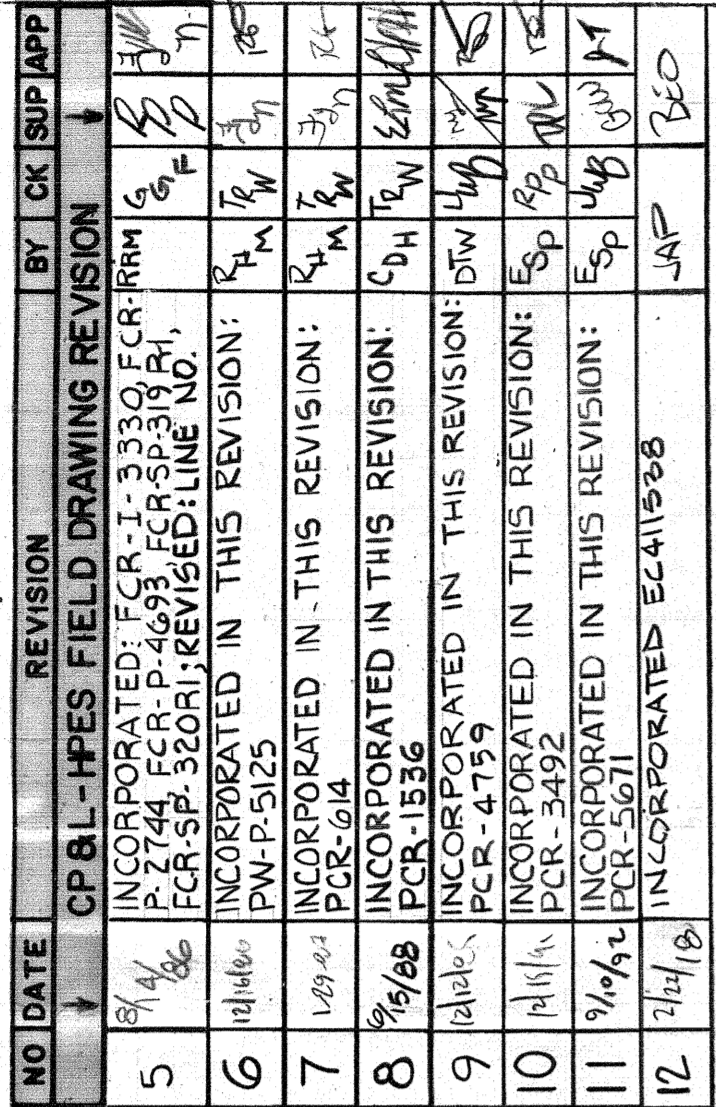
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Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	1364-003628	
Document Revision Number :	017	
Document EC Number :		
Change Reason :	EC0000413175	
Document Title :	CONDENSATE POLISHER FLOW DIAGRAM TURBINE BLDG. EL. 240.00'	
Pearson, Drew	PREPARER	10/10/2018
Almond, Erv	APPROVER	10/10/2018
Notes :		



...A 4758 DRAWING UPDATED.



REV	DATE	BY	APP	DESCRIPTION REWORK ACTION
2	11/14/74	MM		DESCRIPTION 1756 NOS 410 3-1-1 PREFORMATION

1	8/19/74			FINISH BY 12/1/74 CHECK BY 12/2/74 DESCRIPTION 1756 NOS 410 3-1-1 PREFORMATION
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SECT.	SUB SECT
SB-1132	W-12 DATE

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 APPROVAL-RETURN
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 S. J. Tappan

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 SPECIFIED IN REVISION BLOCK

CAROLINA POWER AND LIGHT COMPANY
 SHEATON HARRIS NUCLEAR PLANT
 WAKE COUNTY, NORTH CAROLINA
 PROJECT NO. - CAR-SH-NI-10
 UNIT NO. - 1

FLOW DIAGRAM

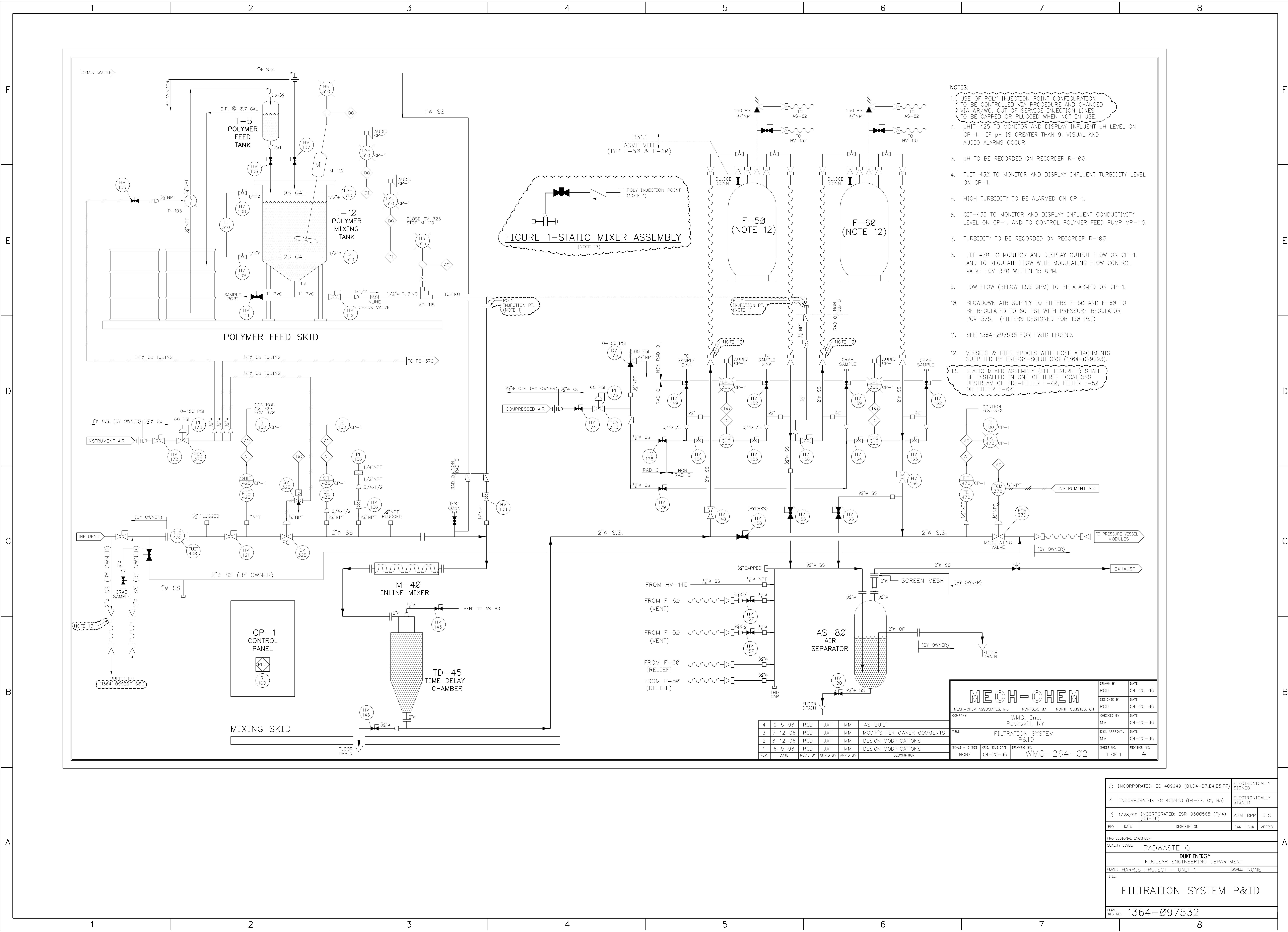
SIZE	NUMBER	CIS/ITE
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SHEEP BOOK		

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Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	1364-097532	
Document Revision Number :	005	
Document EC Number :		
Change Reason :	EC0000409949	
Document Title :	FILTRATION SYSTEM P&ID	
Pearson, Drew	PREPARER	4/5/2018
Hughes, Daryl W	APPROVER	4/5/2018
Notes :		





Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	1364-093034		
Document Revision Number :	004		
Document EC Number :			
Change Reason :	EC0000402153		
Document Title :	ASSEMBLY LONGITUDINAL SECTION THRU TURBINE NSSS TURBINE		
Boudreaux, Sheryl S.	PREPARER		6/26/2018
Barfield, Alfred L.	APPROVER		6/26/2018
Notes :			

