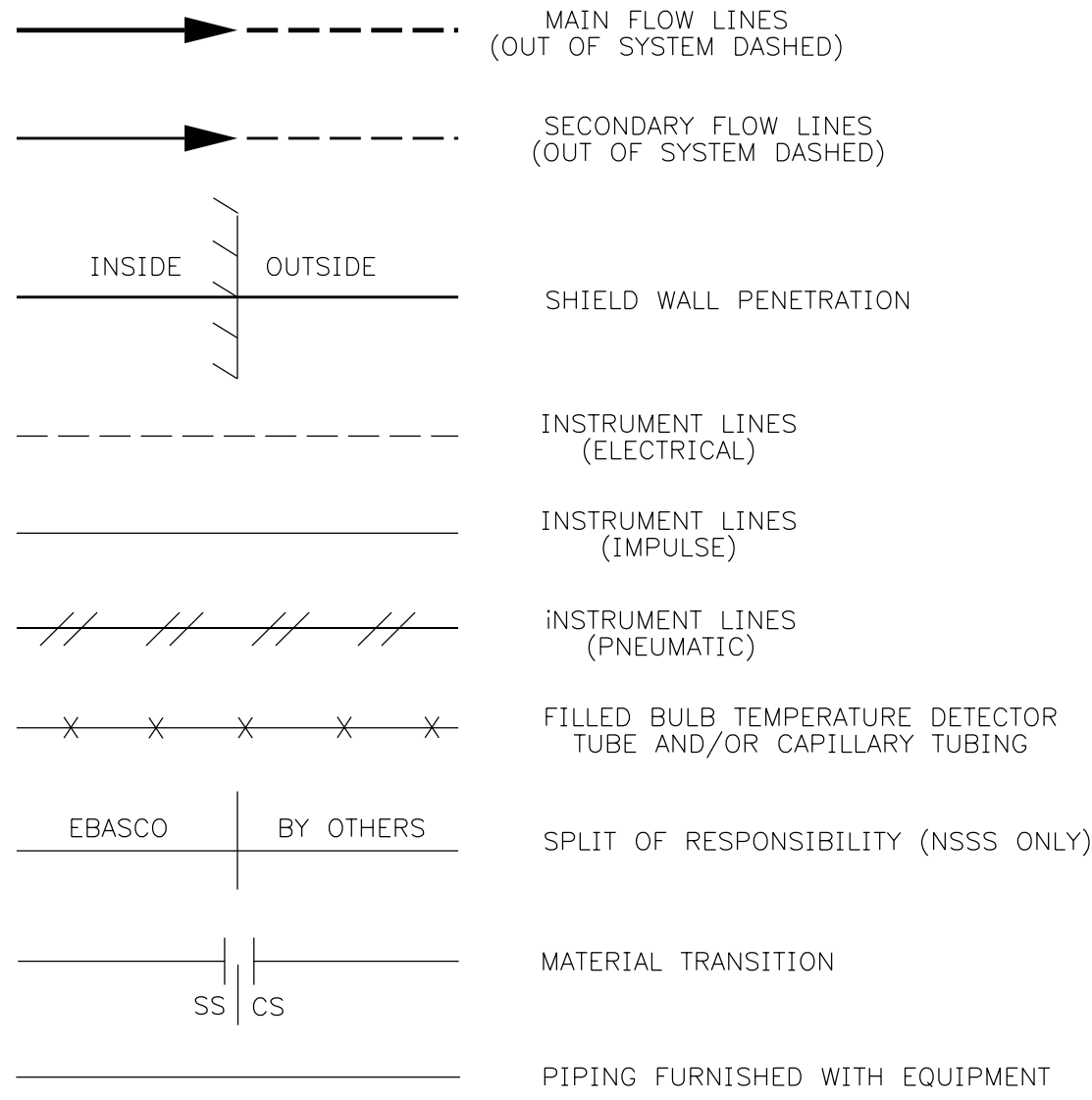




Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	5-G-0041		
Document Revision Number :	014		
Document EC Number :			
Change Reason :	EC0000407254		
Document Title :	FLOW DIAGRAM LEGEND PIPING AND INSTRUMENTATION SYMBOLS		
Williams, Timothy R	PREPARER		11/21/2017
Pugh, Ben	APPROVAL		11/21/2017
Notes :			

VALVE & SPECIALTY SYMBOLS

LINE CODING

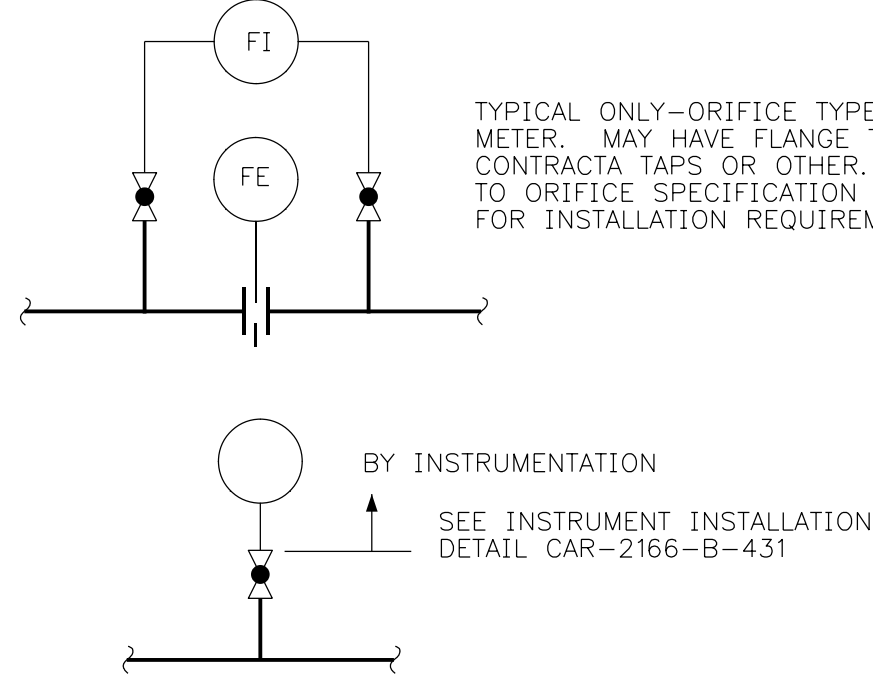


VALVE & SPECIALTY DESIGNATIONS

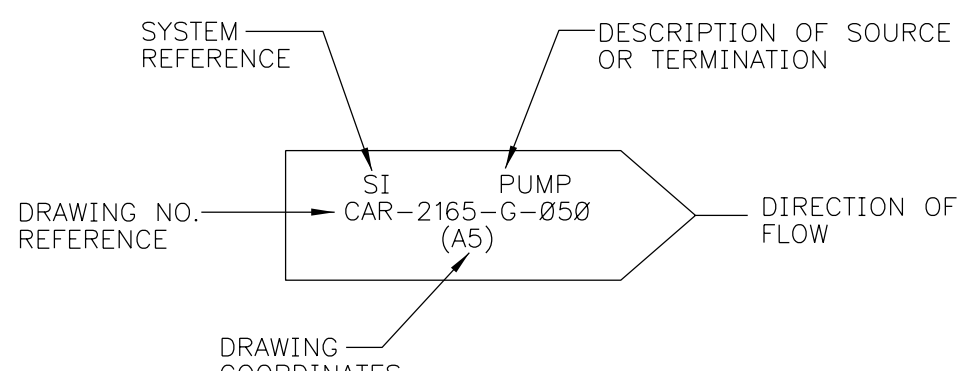
GATE VALVES  
GLOBE VALVES  
CHECK VALVES  
REVERSE CURRENT VALVES  
THREE-WAY VALVES  
BUTTERFLY VALVES  
PLUG VALVES  
SAFETY AND RELIEF VALVES  
EXPANSION JOINTS  
TRAPS  
STRAINERS  
STRAINERS - SELF-CLEANING  
NEEDLE VALVES  
ANGLE VALVES  
DIAPHRAGM VALVES  
LEVEL CONTROL VALVES  
PRESSURE CONTROL VALVES  
TEMPERATURE-CONTROL VALVES  
FLOW CONTROL VALVES  
RESTRICTION ORIFICES  
FLOW LIMITERS  
MISCELLANEOUS  
FLEXIBLE METAL HOSE  
CURB BOX VALVE

V  
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S  
E  
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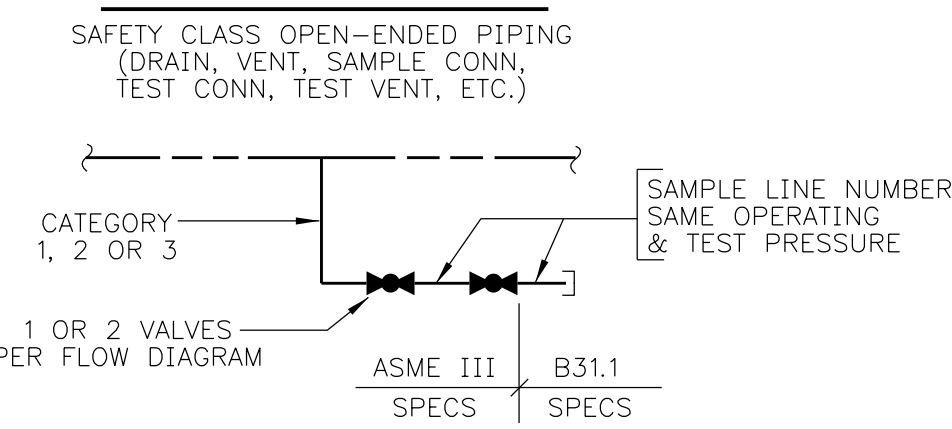
INSTRUMENTATION SYMBOLS



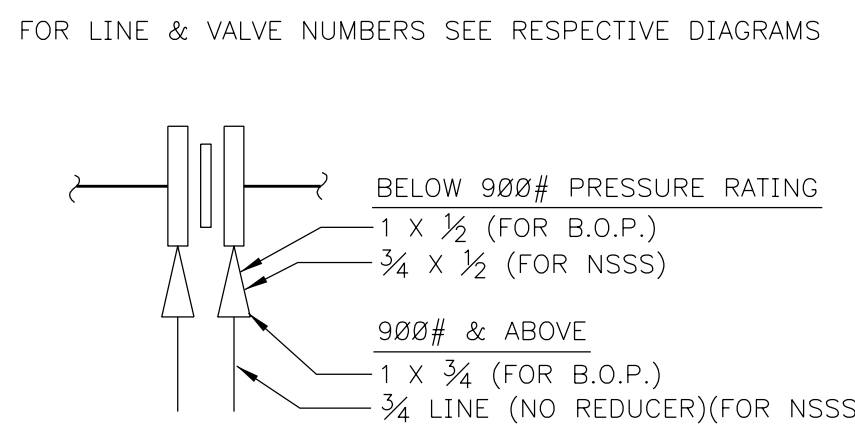
REFERENCE BLOCK



TYPICAL DETAIL



TYPICAL ORIFICE FLANGE CONNECTION



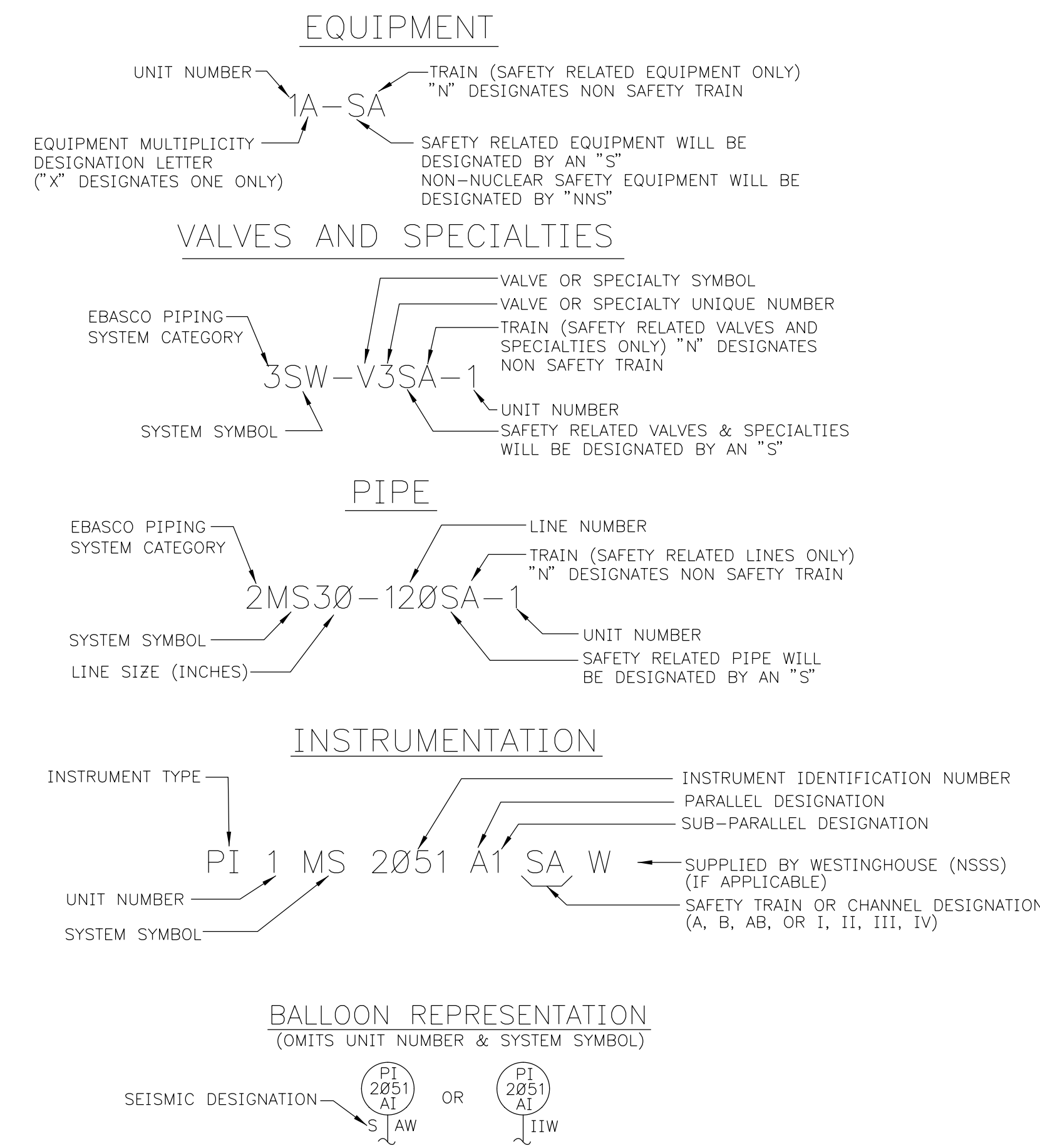
MISCELLANEOUS ABBREVIATIONS

T - CONTAINMENT ISOLATION TRIP SIGNAL PHASE A (S SIGNAL OR MANUAL)  
CA - CONTAINMENT AIR  
L.A.I. - LOCKED AS IS  
ECC - EMERGENCY COOLING CONNECTION  
BD - THERMAL REGENERATION SIGNAL  
BOP - BALANCE OF PLANT  
NR - NOT RELEASED  
NTS - NOT TO SCALE  
\* - BY OTHERS  
BF - BY FIELD  
R - REMOTELY CONTROLLED FROM CONTROL ROOM  
ATM - ATMOSPHERE  
F.A.I. - FAIL AS IS  
F.C. - FAIL CLOSED  
F.O. - FAIL OPEN  
L.C. - LOCKED CLOSED  
L.O. - LOCKED OPEN  
N.C. - NORMALLY CLOSED  
N.O. - NORMALLY OPEN  
VH - VENT HEADER  
V - VENT TO ATMOSPHERE  
PV - PLANT VENT  
SSE - SAFE SHUTDOWN EARTHQUAKE  
MFIS - MAIN FEEDWATER ISOLATION SIGNAL  
MSIS - MAIN STEAM ISOLATION SIGNAL  
S - SAFETY INJECTION SIGNAL- PLACED AT EQUIPMENT & VALVE  
IMB - INSIDE MISSILE BARRIER  
OMB - OUTSIDE MISSILE BARRIER  
RR - REACH ROD REQUIRED  
P - CONTAINMENT ISOLATION TRIP PHASE B (HI-HI CONTAINMENT PRESS)  
IRC - INSIDE REACTOR CONTAINMENT  
ORC - OUTSIDE REACTOR CONTAINMENT  
DC - VITAL BATTERY SOURCE OF POWER

PIPING SYSTEM DESIGNATIONS

SYSTEM LETTER	SYSTEM DESCRIPTION	SYSTEM LETTER	SYSTEM DESCRIPTION
AC	AUXILIARY STEAM CONDENSATE	HD	HEATER DRAIN
AE	AIR EVACUATION	HV	HEATER VENTS
AF	AUXILIARY FEEDWATER	HY	HYDROGEN
AS	AUXILIARY STEAM	IA	INSTRUMENT AIR
ASI	ALTERNATE SEAL INJECTION	LO	LUBE OIL
ACD	ACID-CAUSTIC DRAIN	LT	LEAK RATE TESTING
BD	BLOWDOWN	LU	STEAM GENERATOR WET LAY-UP
BR	BORON RECYCLE	MD	MISCELLANEOUS DRAINS
CA	CAUSTIC & ACID	MP	MAKE-UP PLANT WATER
CB	CONTAINMENT BLDG VACUUM RELIEF (HVAC)	MS	MAIN STEAM
CC	COMPONENT COOLING WATER	NI	NITROGEN
CCD	COMPONENT COOLING DRAIN	OX	OXYGEN
CE	CONDENSATE	PW	PRIMARY MAKE-UP WATER
CF	CHEMICAL FEED	PP	PENETRATION PRESSURIZATION
CG	CARBON DIOXIDE	PW	POTABLE WATER
CH	CHILLED WATER SUPPLY (HVAC)	RC	REACTOR COOLANT
CL	CHLORINATION	RH	RESIDUAL HEAT REMOVAL
CM	CONTAINMENT BLDG HYDROGEN CONTROL (HVAC)	SA	SERVICE AIR
CO	COMPRESSED AIR	SC	SCREEN WASH
CP	CONTAINMENT BLDG PURGE (HVAC)	SDG	SHUTDOWN DIESEL GENERATOR
CS	CHEMICAL & VOLUME CONTROL	SF	SPENT FUEL POOL COOLING & CLEANUP
CT	CONTAINMENT SPRAY	SI	SAFETY INJECTION
CW	CIRCULATING WATER	SP	SAMPLING (NUCLEAR), RADIATION MONITORING
CX	CHILLED WATER RETURN (HVAC)	SW	SERVICE WATER
DW	DEMINERALIZED WATER	TB	TOWER BLOWDOWN (COOLING TOWER)
EA	EMERGENCY AIR	VA	VACUUM SYSTEM (LABORATORIES)
ED	EQUIPMENT DRAIN	VL	VALVE LEAKOFF
ES	EXTRACTION STEAM	WC	WPB COOLING WATER
FD	FLOOR DRAIN	WCD	WPB COOLING WATER DRAIN
FM	PRIMARY FILTER MAKE-UP WATER	WG	WASTE PROCESSING (GAS)
FO	FUEL OIL	WL	WASTE PROCESSING (LIQUID)
FP	FIRE PROTECTION	WS	SECONDARY WASTE TREATMENT
FW	FEEDWATER	WSD	SECONDARY WASTE TREATMENT DRAIN

EQUIPMENT, VALVES, SPECIALTIES, PIPING & INSTRUMENTS NUMBERING



REFERENCE DRAWINGS

PIPING LINE LIST  
VALVE & SPECIALTY LIST  
INSTRUMENT LIST  
INSTRUMENT INSTALLATION DETAILS

CAR-1364-B-070  
CAR-1364-B-069  
CAR-2166-B-432  
CAR-2166-B-431

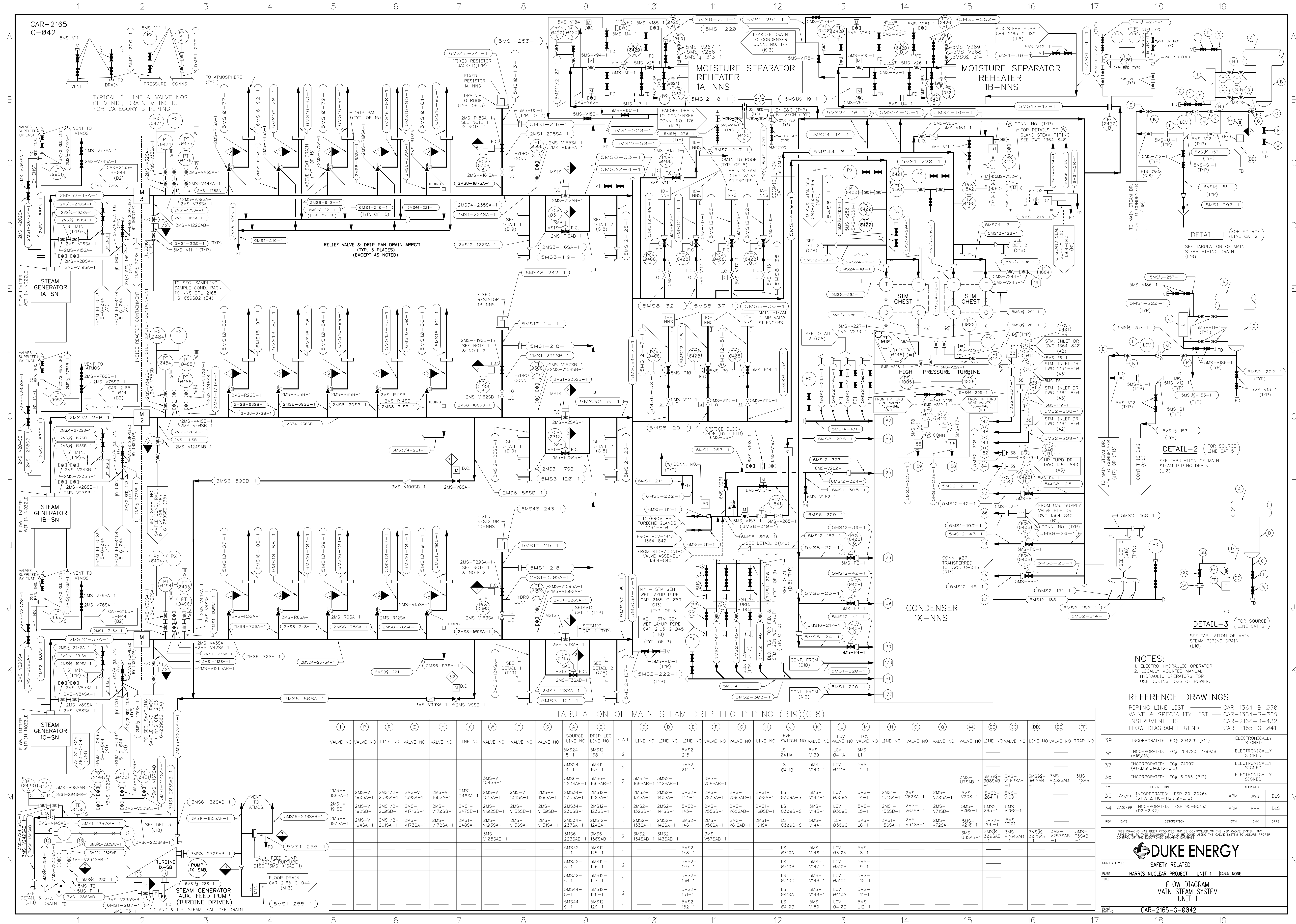
GENERAL NOTES

- ALL VENTS, DRAINS, AND TEST CONNECTIONS SHALL BE VALVED AS SHOWN ON FLOW DIAGRAM.
- ALL VALVES PURCHASED WITH LEAKOFF CONNECTIONS SHALL BE PERMANENTLY PIPED TO THE APPROPRIATE DRAIN POINT OR CAPPED (AS REQUIRED).
- THE SAFETY CLASS BOUNDARIES FOR PIPING AND VALVES ARE DESIGNATED BY THE FOLLOWING FLAGS:  
  
SAFETY CLASS 1  
SAFETY CLASS 2  
SAFETY CLASS 3  
NON-NUCLEAR SAFETY CLASS (NNS)  
BOUNDARY BETWEEN CLASS 1 & 2
- SAFETY CLASS EQUIPMENT SHALL BE SHOWN WITH HATCH LINES ON GENERAL ARRANGEMENT DRAWINGS
- IN SAFETY CLASS 1 PIPING, A FLOW RESTRICTION IS REQUIRED (WATER LINES) AT LOCATIONS SPECIFICALLY INDICATED ON THE FLOW DIAGRAMS IN 3/4 INCH PIPING, TO ALLOW TRANSITION FROM SAFETY CLASS 1 TO SAFETY CLASS 2  
  
TYPICAL FLOW RESTRICTOR  
(DEVIATIONS FROM THIS DESIGN ARE ACCEPTABLE WHERE NECESSARY PROVIDED THEY CONFORM TO PIPE BRANCH CONNECTION CRITERIA AND RESTRICT THE FLOW AREA BY REDUCING THE INSIDE DIAMETER TO 0.375")
- TRANSITION PIECES MUST BE PROVIDED IF A SCHEDULE DIFFERENCE EXISTS BETWEEN SYSTEM PIPING AND COMPONENTS. IT IS NOT ACCEPTABLE TO USE COMPONENTS AS THE TRANSITION. THE HEAVIER WALL SCHEDULE MUST BE USED FOR THE TRANSITION PIPE AND ONE END SHALL BE MACHINED TO MATCH THE LESSER WALL SCHEDULE.
- INSTRUMENTATION SHOWN ON FLOW DIAGRAMS REPRESENT ONLY THE INSTRUMENT PRIMARY ELEMENT. FOR THE COMPLETE INSTRUMENT LOOP AND INTERLOCKS, SEE THE CORRESPONDING 00 FLOW DIAGRAM OR APPROPRIATE INSTRUMENT INSTALLATION DETAILS CAR-2166-B-431. CLASSIFICATION OF INSTRUMENTATION IS DEFINED ON CAR-2166-B-431.
- FLOW DIAGRAMS PROVIDE A FUNCTIONAL REPRESENTATION OF THE SYSTEM. VALVE AND LINE NUMBERS/SIZES, INSTRUMENTATION DETAILS, CLASS BREAKS AND FLOWPATHS ARE DEPICTED TO PROVIDE AN ACCURATE REPRESENTATION OF DESIGN FUNCTIONS. THE PLANT PHYSICAL ARRANGEMENT MAY DIFFER FROM THAT DEPICTED BY THE FLOW DIAGRAM.



Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	5-G-0042		
Document Revision Number :	039		
Document EC Number :			
Change Reason :	EC0000294229		
Document Title :	FLOW DIAGRAM MAIN STEAM SYSTEM UNIT 1		
Brennan, Jerry W.	PREPARER		5/3/2018
Morgan, Richard D.	APPROVER		5/4/2018
Notes :			









Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	5-G-0043		
Document Revision Number :	031		
Document EC Number :			
Change Reason :	EC0000294229;EC0000402153		
Document Title :	FLOW DIAGRAM EXTRACTION STEAM SYSTEM		
Brennan, Jerry W.	PREPARER		5/3/2018
Morgan, Richard D.	APPROVER		5/3/2018
Notes :			

CAR-2165  
G-043

# HIGH PRESSURE TURBINE

## L.P. TURBINE A

## L.P. TURBINE B

### ZONE 1

### CONDENSER 1X-NNS

### ZONE 2

## L.P. TURBINE A

## L.P. TURBINE B

### HOTWELL

#### REFERENCE DRAWINGS

PIPING LINE LIST CAR-1364-B-070  
VALVE & SPECIALTY LIST CAR-1364-B-069  
INSTRUMENT LIST CAR-2166-B-432  
FLOW DIAGRAM LEGEND CAR-2165-G-041

#### LEGEND

○ DENOTES VENDORS CONN. ON CONDENSER  
□ DENOTES VENDORS CONN. ON TURBINE

#### NOTE:

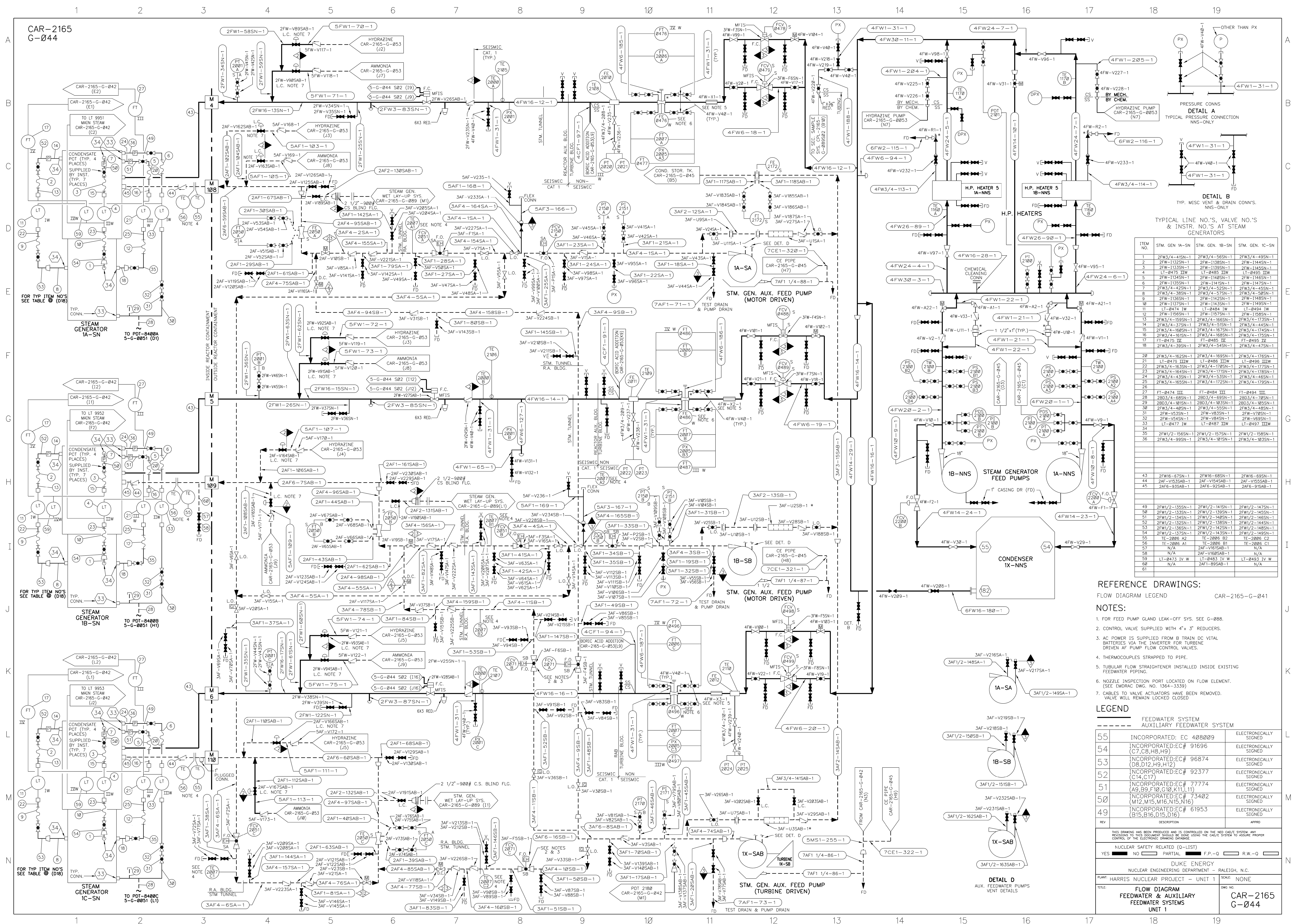
1. ISOKINETIC SAMPLING NOZZLE LOCATION (DUAL-NOZZLE MULTI-PORT TYPE)
2. 6ES-V22-1 IS CLOSED (NOT LOCKED OPEN) DURING NORMAL OPERATION (EC79388)
3. SEE SHEET 1 FOR DETAILS
4. TUBING ABANDONED IN PLACE PER EC294229

31				
INCORPORATED: EC 294229 (C12,E8,E18,F9,G17) EC 482153 (F9-F16)				
ELECTRONICALLY SIGNED AND DATED				
REV	DESCRIPTION	OWN	CHK	APPROVED
NUCLEAR SAFETY RELATED (O-LIST)				
YES	NO	PARTIAL	F.P.-Q	R.W.-Q
DUKE ENERGY				
PLANT: HARRIS NUCLEAR PROJECT - UNIT 1				
SCALE: NONE				
TITLE: FLOW DIAGRAM				
EXTRACTION STEAM SYSTEM				
CAR-2165 G-0043				



<b>Facility Code :</b>	HNP
<b>Applicable Facilities :</b>	HNP
<b>Document Number :</b>	5-G-0044
<b>Document Revision Number :</b>	055
<b>Document EC Number :</b>	
<b>Change Reason :</b>	EC0000408009
<b>Document Title :</b>	FLOW DIAGRAM FEEDWATER & AUXILIARY FEEDWATER SYSTEMS UNIT 1
Mehta, Ameeta	Preparer 3/28/2017
Martinez-Llanos, Julio E	Approver 3/28/2017
<b>Notes :</b>	

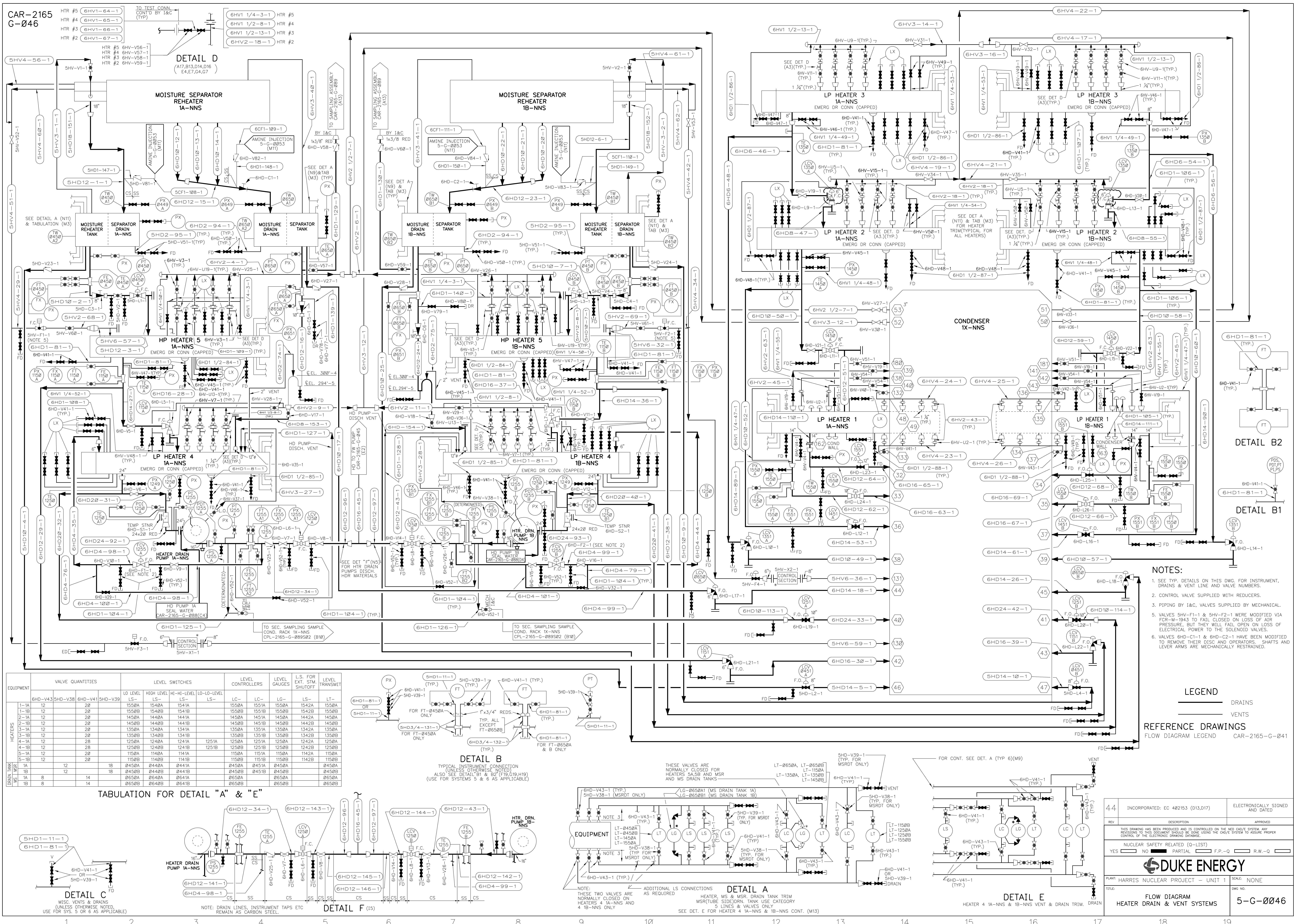






Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	5-G-0046		
Document Revision Number :	044		
Document EC Number :			
Change Reason :	EC0000402153		
Document Title :	FLOW DIAGRAM HEATER DRAIN & VENT SYSTEMS		
Brennan, Jerry W.	PREPARER		4/13/2018
Shoemaker, Guy T	APPROVER		4/19/2018
Notes :			

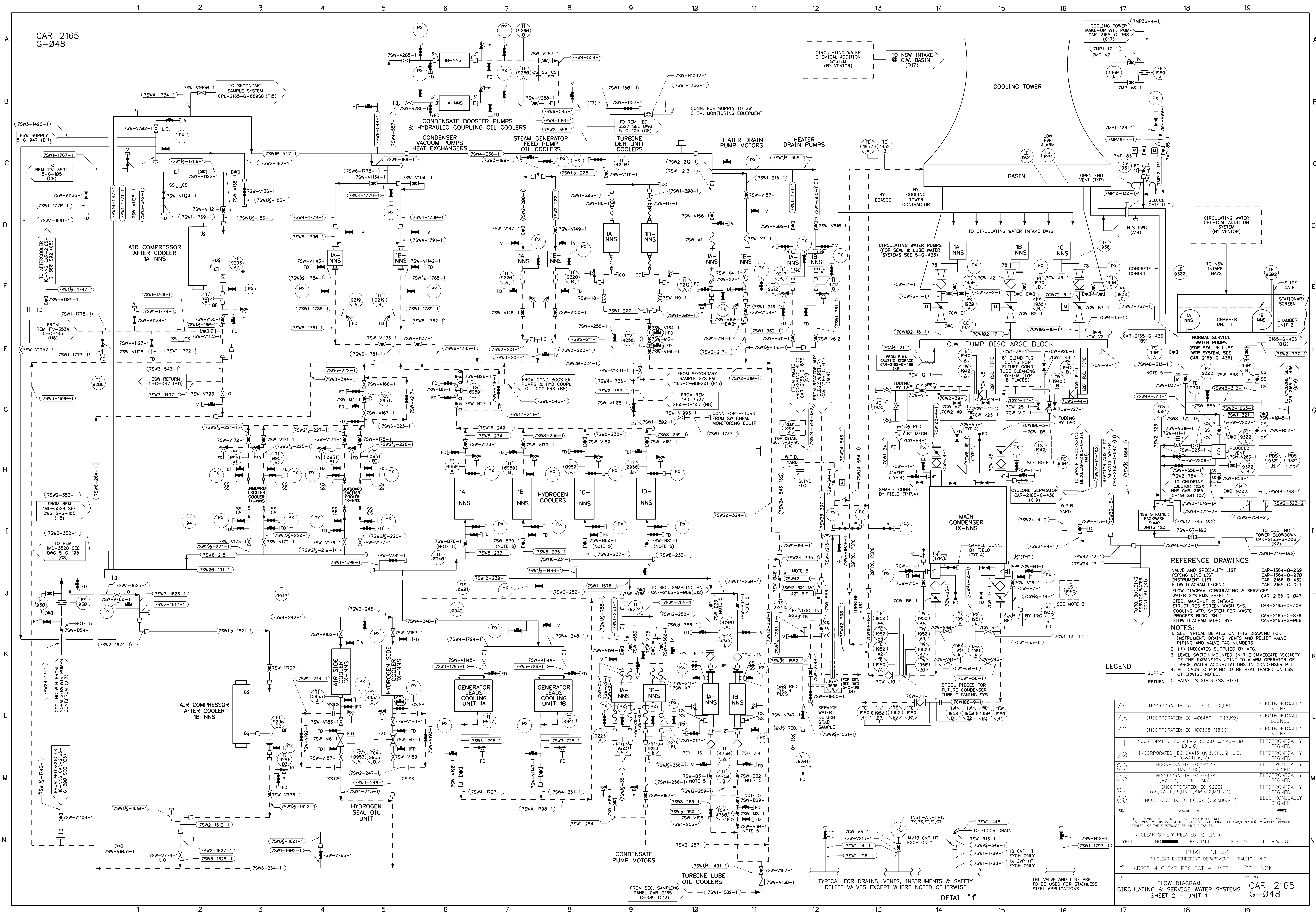








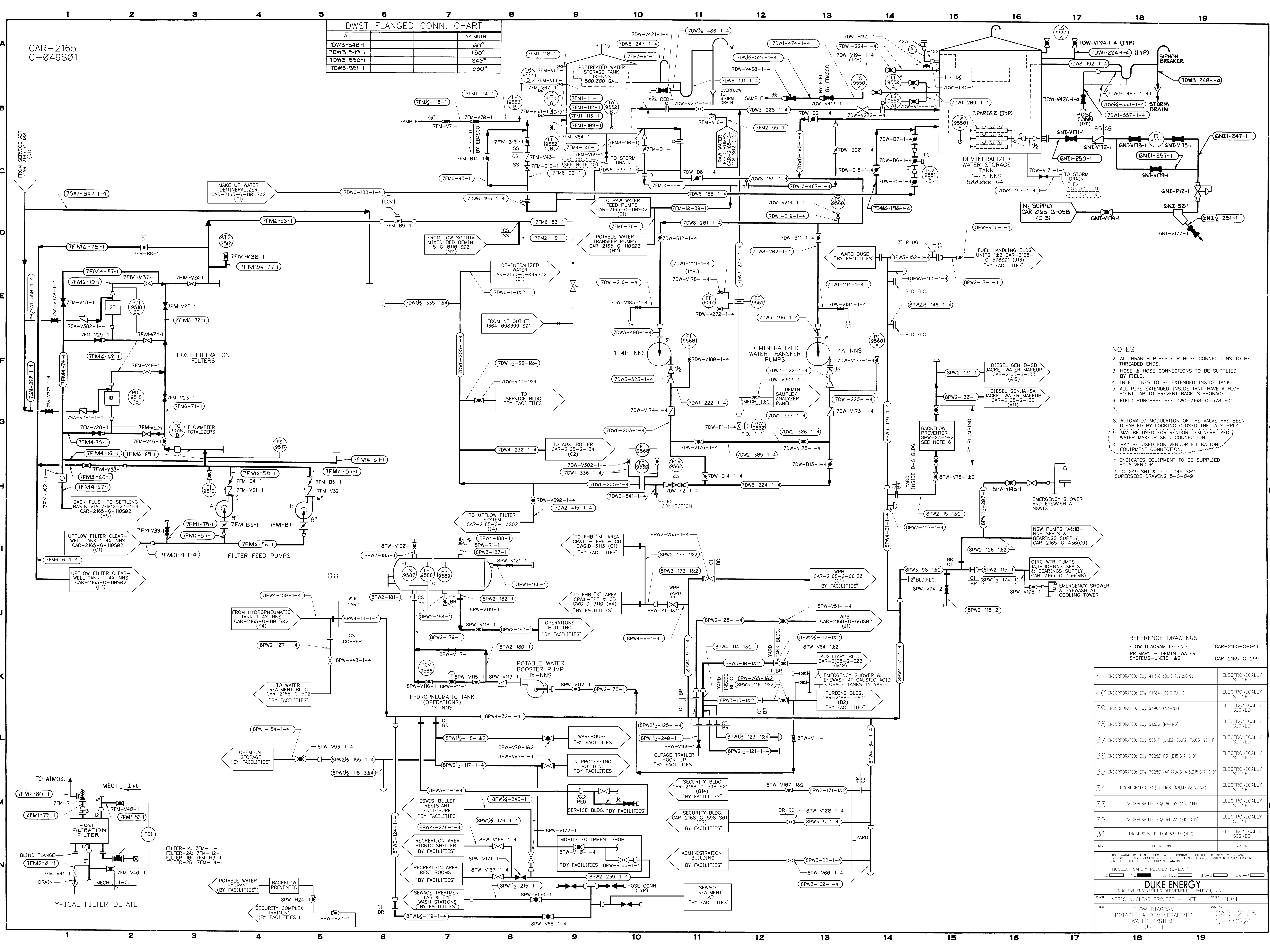
Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	5-G-0048		
Document Revision Number :	074		
Document EC Number :			
Change Reason :	EC0000411770		
Document Title :	FLOW DIAGRAM-CIRCULATING & SERVICE WATER SYSTEMS SHEET 2 - UNIT 1		
Williams, Timothy R	PREPARER		5/8/2018
Mcgowan, Lawrence S.	APPROVAL		5/9/2018
Notes :			





Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	5-G-0049 S01		
Document Revision Number :	041		
Document EC Number :			
Change Reason :	EC0000411318		
Document Title :	FLOW DIAGRAM POTABLE & DEMINERALIZED WATER SYSTEMS UNIT 1		
Pearson, Drew	PREPARER		2/1/2018
Hughes, Daryl W	APPROVER		2/1/2018
Notes :			





DWST FLANGED CONN. CHART			
A			AZIMUTH
7DW3-54B-1			60°
7DW3-549-1			150°
7DW3-550-1			240°
7DW3-551-1			330°

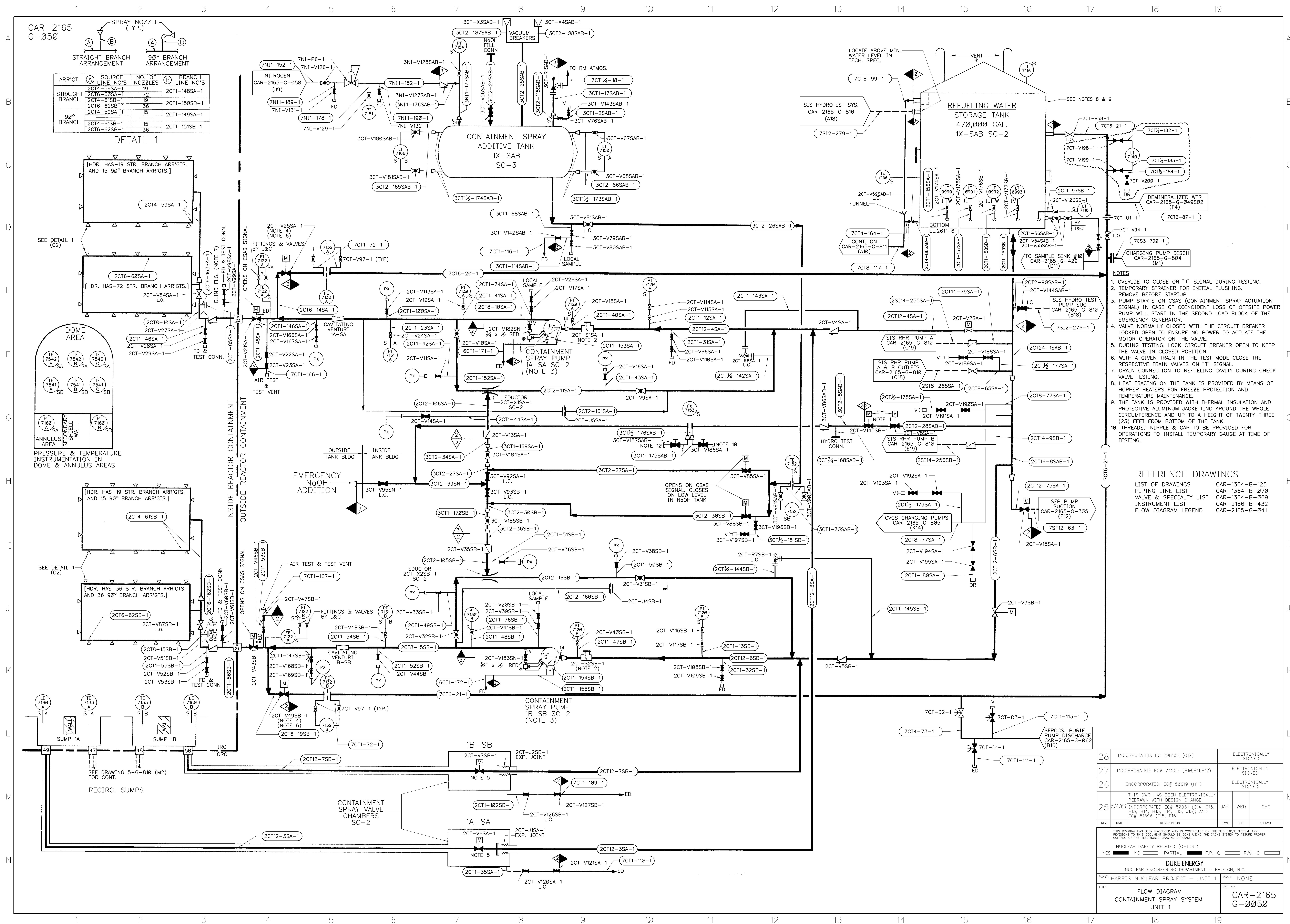
- NOTES
2. ALL BRANCH PIPES FOR HOSE CONNECTIONS TO BE THREADED ENDS.
  3. HOSE & HOSE CONNECTIONS TO BE SUPPLIED BY FIELD.
  4. INLET LINES TO BE EXTENDED INSIDE TANK.
  5. ALL PIPE EXTENDED INSIDE TANK HAVE A HIGH POINT TAP TO PREVENT BACK-SIPHONAGE.
  6. FIELD PURCHASE SEE DWG-2168-G-578 S05
  - 7.
  8. AUTOMATIC MODULATION OF THE VALVE HAS BEEN DISABLED BY LOCKING CLOSED THE 1A SUPPLY.
  9. MAY BE USED FOR VENDOR DEMINERALIZED WATER MAKEUP SKID CONNECTION.
  10. MAY BE USED FOR VENDOR FILTRATION EQUIPMENT CONNECTION.
- \* INDICATES EQUIPMENT TO BE SUPPLIED BY A VENDOR.
- 5-G-049 S01 & 5-G-049 S02 SUPERSEDE DRAWING 5-G-049

REFERENCE DRAWINGS		
FLOW DIAGRAM LEGEND		CAR-2165-G-041
PRIMARY & DEMIN. WATER SYSTEMS-UNITS 1&2		CAR-2165-G-299
41	INCORPORATED: EC# 41138 (B9,C17,G18,G19)	ELECTRONICALLY SIGNED
40	INCORPORATED: EC# 91684 (C9,C17,H11)	ELECTRONICALLY SIGNED
39	INCORPORATED: EC# 94964 (N3-N7)	ELECTRONICALLY SIGNED
38	INCORPORATED: EC# 91006 (N4-N8)	ELECTRONICALLY SIGNED
37	INCORPORATED: EC# 58517 (C1E2-E6,F2-F6,G3-G6,N1)	ELECTRONICALLY SIGNED
36	INCORPORATED: EC# 79288 R3 (B15,G17-G19)	ELECTRONICALLY SIGNED
35	INCORPORATED: EC# 79288 (A6,A7,A13-A15,B15,G17-G19)	ELECTRONICALLY SIGNED
34	INCORPORATED: EC# 55908 (M6,M7,M8,N7,N8)	ELECTRONICALLY SIGNED
33	INCORPORATED: EC# 66252 (A6, A14)	ELECTRONICALLY SIGNED
32	INCORPORATED: EC# 64923 (F15, G15)	ELECTRONICALLY SIGNED
31	INCORPORATED: EC# 63707 (N10)	ELECTRONICALLY SIGNED
REV	DESCRIPTION	APPROV
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE NED CAD/S SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/S SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.		
NUCLEAR SAFETY RELATED (O-LIST)		
YES	NO	PARTIAL
DUKE ENERGY		
NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.		
PLANT	HARRIS NUCLEAR PROJECT - UNIT 1	SCALE: NONE
TITLE	FLOW DIAGRAM POTABLE & DEMINERALIZED WATER SYSTEMS UNIT 1	DWG NO. CAR-2165-G-49S01



Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	5-G-0050	
Document Revision Number :	028	
Document EC Number :		
Change Reason :	EC0000298102	
Document Title :	FLOW DIAG CONT SPRAY SYS	
Boudreaux, Sheryl S. preparer 4/12/2018		
McGoun, Wes approval 4/12/2018		
Notes :		

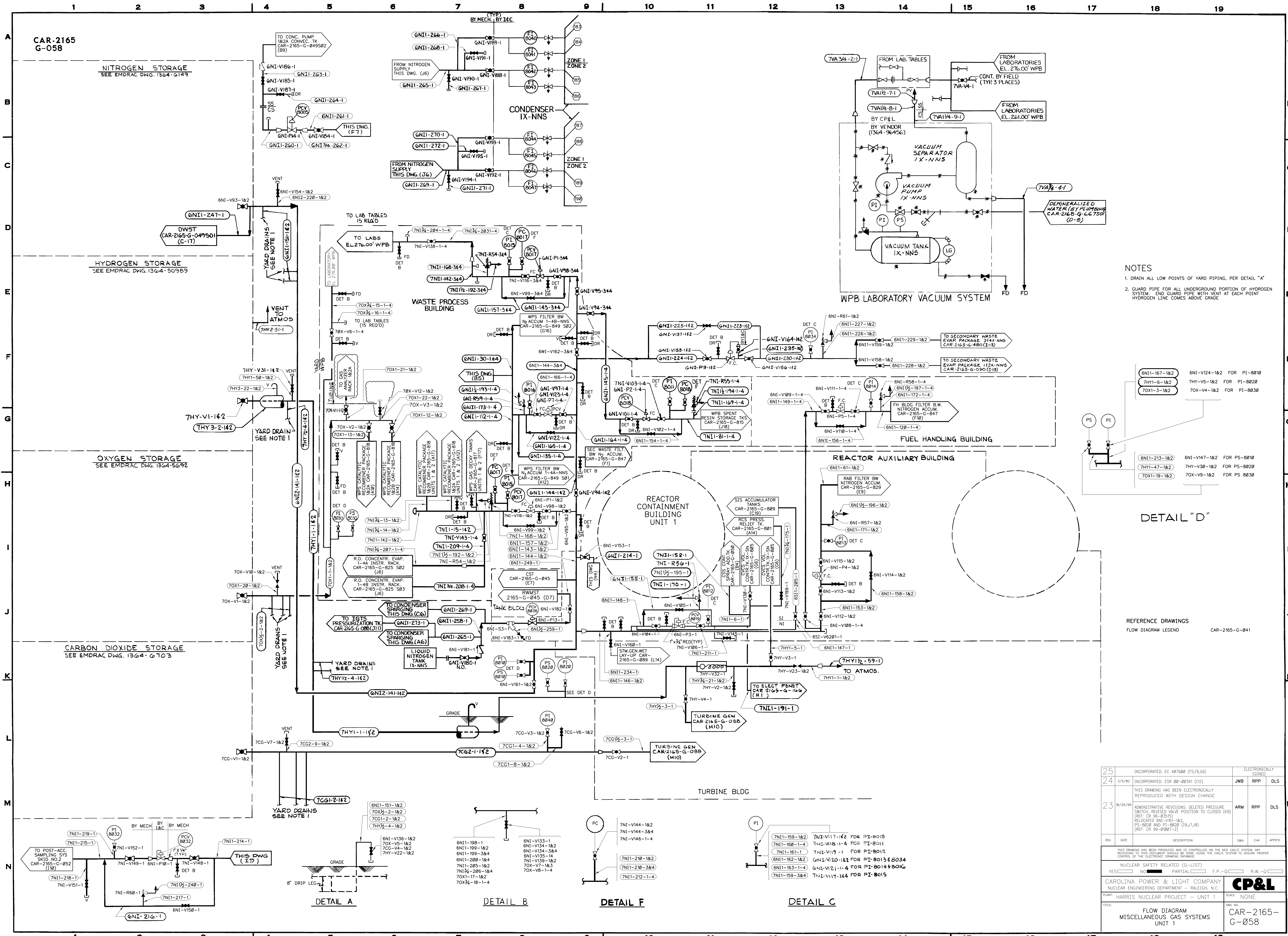








Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	5-G-0058		
Document Revision Number :	025		
Document EC Number :			
Change Reason :	EC0000407600		
Document Title :	FLOW DIAGRAM MISCELLANEOUS GAS SYSTEMS		
Pearson, Drew	PREPARER		1/22/2018
Fletcher, Clyde R.	APPROVER		1/22/2018
Notes :			



NOTES

1. DRAIN ALL LOW POINTS OF YARD PIPING, PER DETAIL "A".

2. GUARD PIPE FOR ALL UNDERGROUND PORTION OF HYDROGEN SYSTEM. END GUARD PIPE WITH VENT AT EACH POINT. HYDROGEN LINE COMES ABOVE GRADE.

DETAIL "D"

REFERENCE DRAWINGS

FLOW DIAGRAM LEGEND CAR-2165-G-041

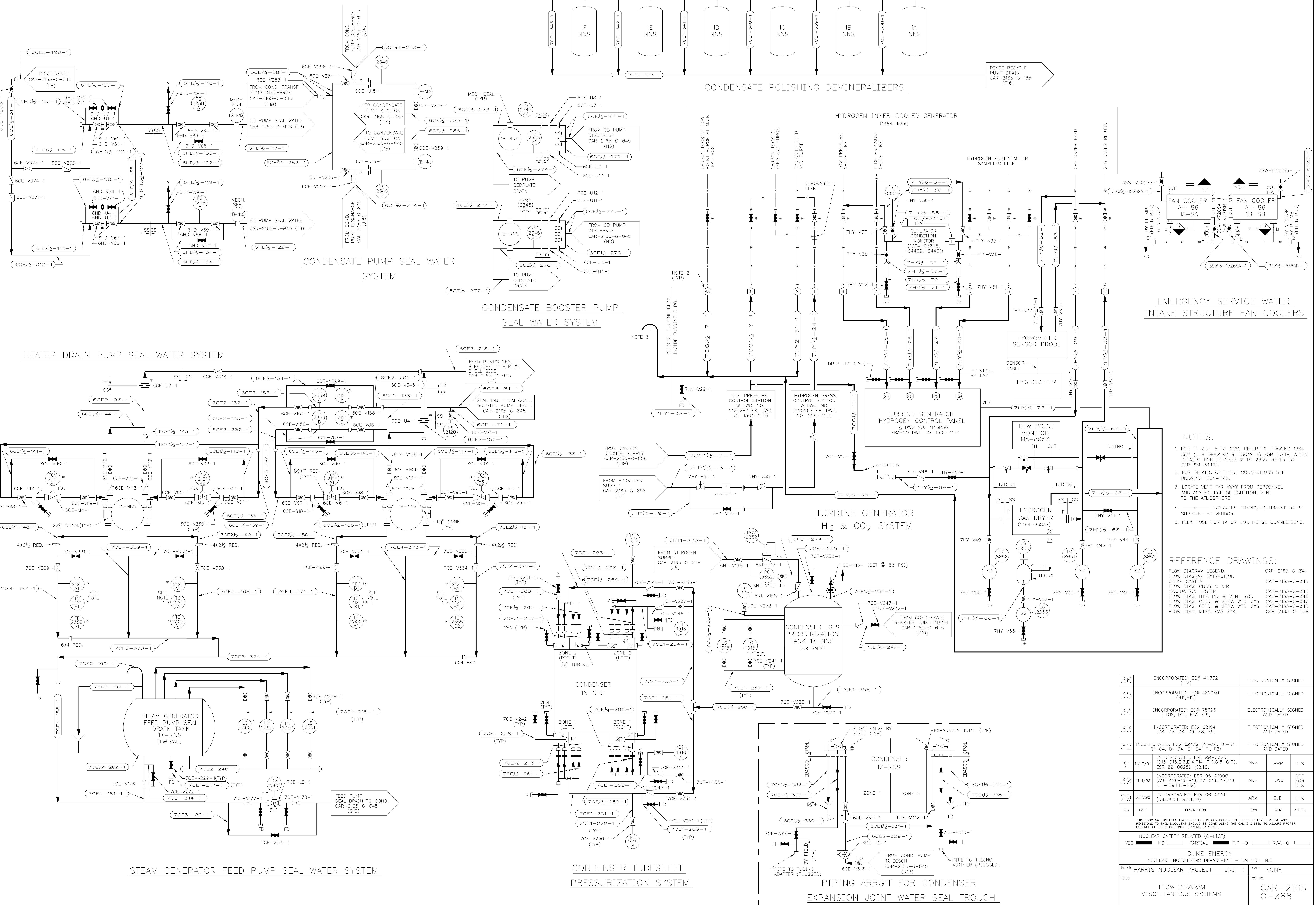
25	INCORPORATED: EC 487688 (F5,F6,G6)		ELECTRONICALLY SIGNED		
24	3/5/92	INCORPORATED: ESR 00-00391 (12)	JWB	RPP	DLS
THIS DRAWING HAS BEEN ELECTRONICALLY REPRODUCED WITH DESIGN CHANGE					
23	10/26/99	ADMINISTRATIVE REVISIONS: DELETED PRESSURE SWITCH, REVISED VALVE POSITION TO CLOSED (K9) (REF. CR 96-85515) RELOCATED 6N1-V161-1&2, PS-8020 AND PI-8020 (19J7,8) (REF. CR 99-00007-2)	ARM	RPP	DLS
REV	DATE	DESCRIPTION	DWN	CHK	APPR'D
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE NED CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.					
NUCLEAR SAFETY RELATED (Q-LIST)					
YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> PARTIAL <input type="checkbox"/> F.P.-O <input type="checkbox"/> R.W.-O <input type="checkbox"/>					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.			<b>CP&amp;L</b>		
PLANT	HARRIS NUCLEAR PROJECT - UNIT 1		SCALE	NONE	
TITLE	FLOW DIAGRAM MISCELLANEOUS GAS SYSTEMS UNIT 1		DWG NO.	CAR-2165-G-058	



Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	5-G-0088	
Document Revision Number :	036	
Document EC Number :		
Change Reason :	EC0000411732	
Document Title :	FLOW DIAGRAM MISC SYSTEMS	
Boudreaux, Sheryl S. preparer 4/9/2018		
VanGorder, Ryan approval 4/9/2018		
Notes :		



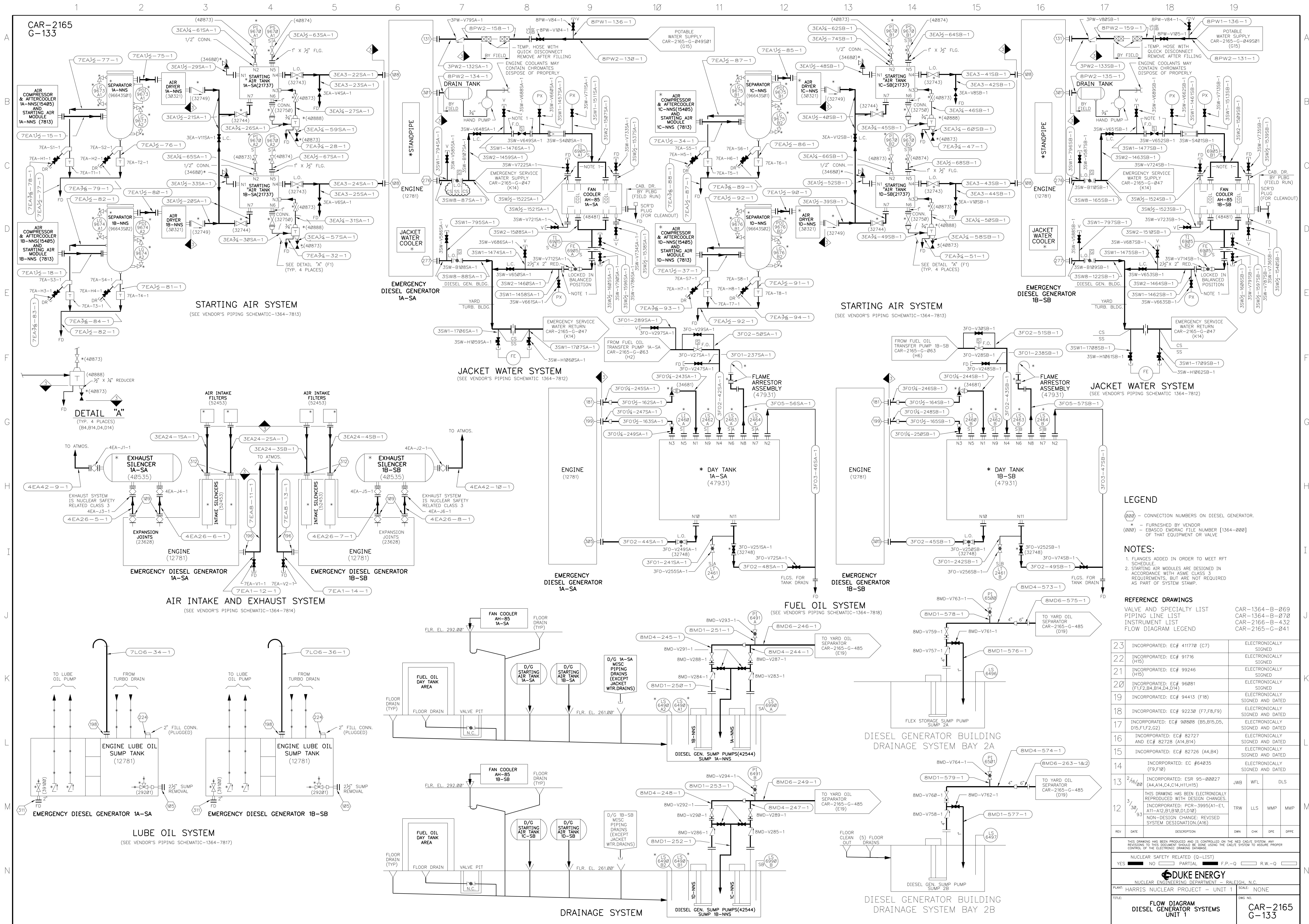
CAR-2165  
G-088





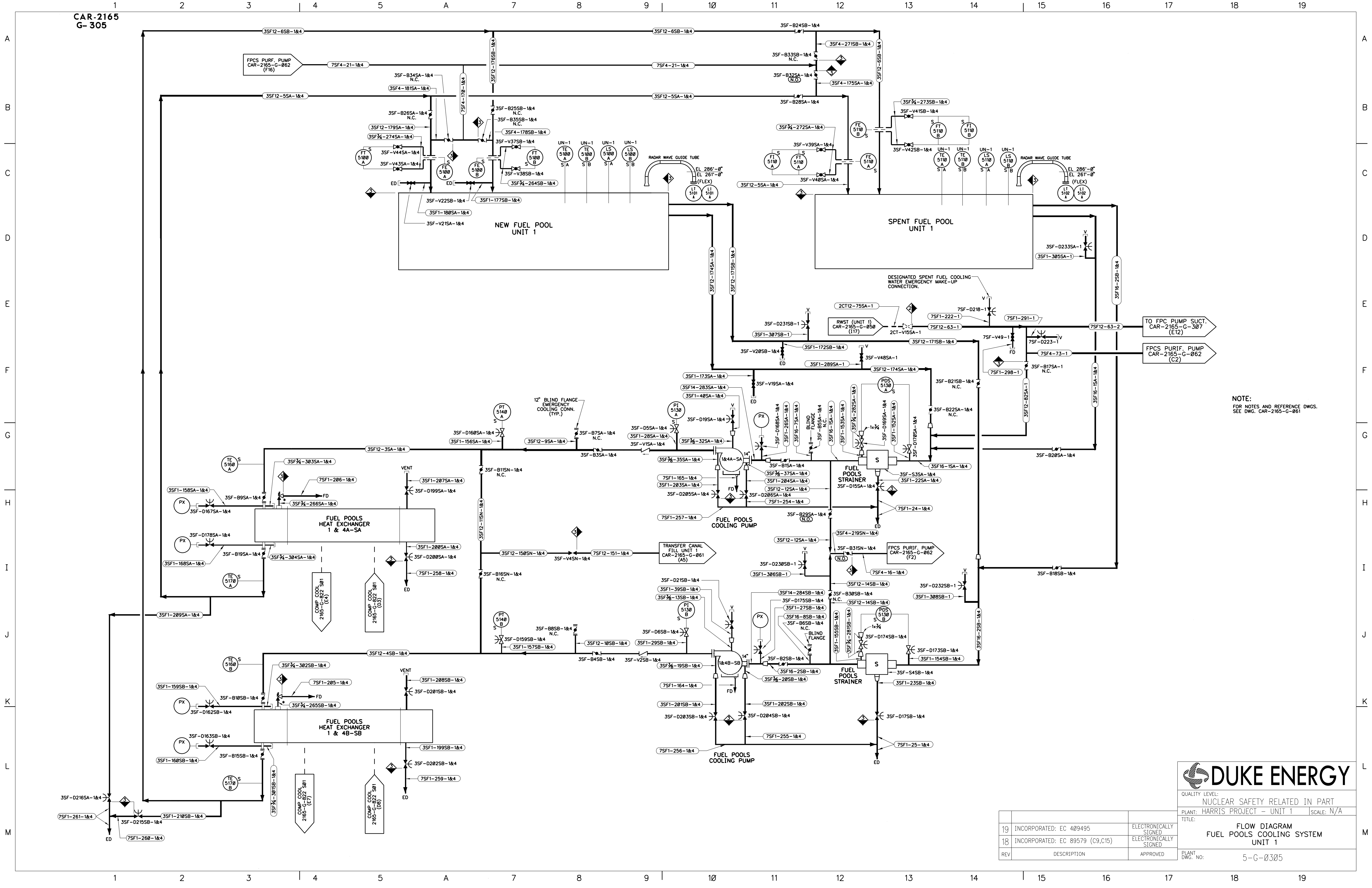


Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	5-G-0133	
Document Revision Number :	023	
Document EC Number :		
Change Reason :	EC0000411770	
Document Title :	FLOW DIAGRAM DIESEL GENERATOR SYSTEMS UNIT 1	
Williams, Timothy R	PREPARER	5/8/2018
Mcgowan, Lawrence S.	APPROVAL	5/9/2018
Notes :		





Facility Code :	HNP	
Applicable Facilities :	HNP	
Document Number :	5-G-0305	
Document Revision Number :	019	
Document EC Number :		
Change Reason :	EC0000409495	
Document Title :	FLOW DIAGRAM FUEL POOLS COOLING SYSTEM UNIT 1	
Pearson, Drew	PREPARER	8/16/2017
Malcolm, Charles H.	APPROVER	8/16/2017
Notes :		



NOTE:  
FOR NOTES AND REFERENCE DWGS.  
SEE DWG. CAR-2165-G-061



QUALITY LEVEL:  
NUCLEAR SAFETY RELATED IN PART

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

TITLE:  
FLOW DIAGRAM  
FUEL POOLS COOLING SYSTEM  
UNIT 1

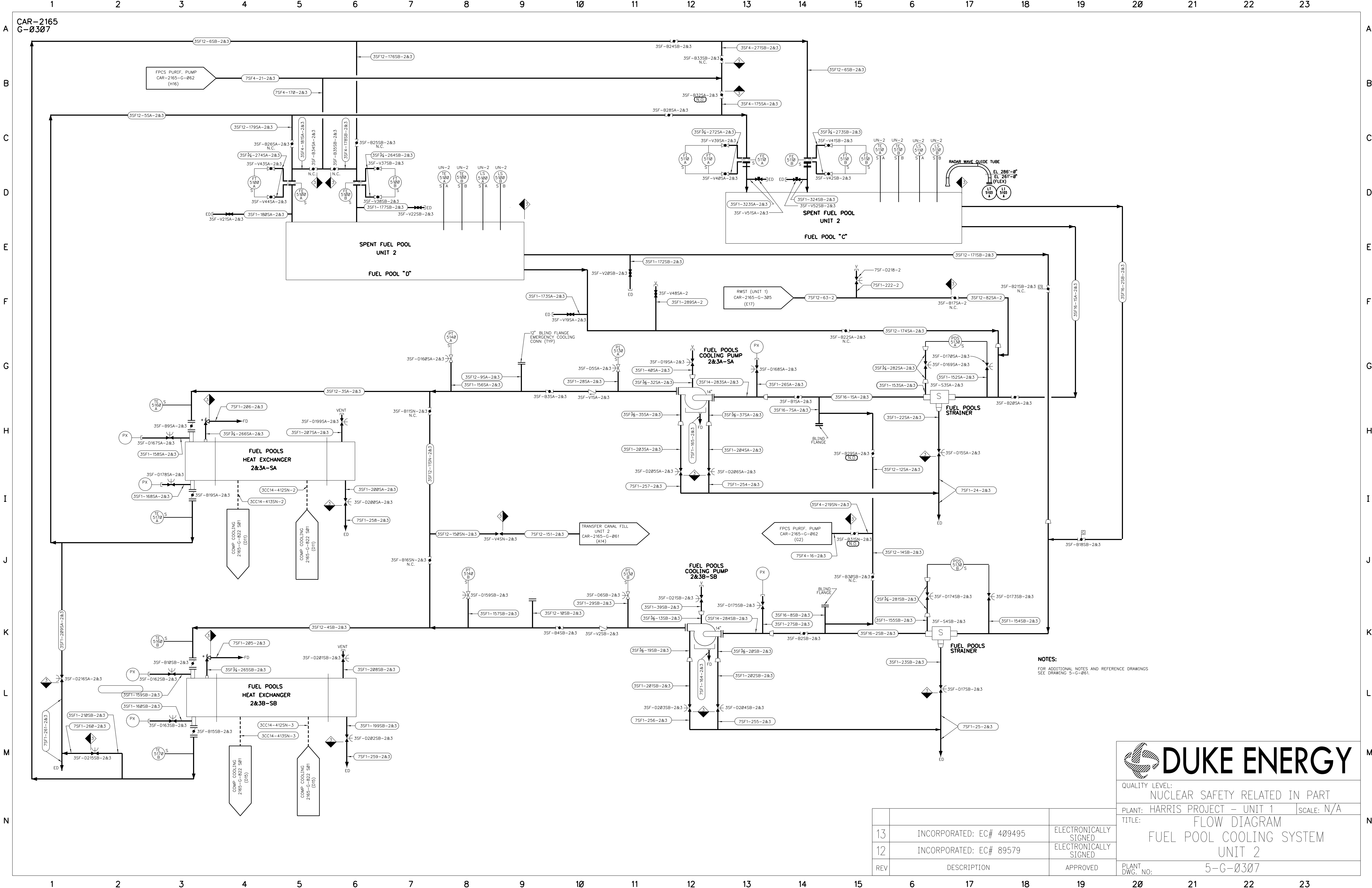
PLANT DWG. No: 5-G-0305

REV	DESCRIPTION	APPROVED
19	INCORPORATED: EC 409495	ELECTRONICALLY SIGNED
18	INCORPORATED: EC 89579 (C9,C15)	ELECTRONICALLY SIGNED






Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	5-G-0307		
Document Revision Number :	013		
Document EC Number :			
Change Reason :	EC0000409495		
Document Title :	FLOW DIAGRAM FUEL POOL COOLING SYSTEM UNIT 2		
Pearson, Drew	PREPARER		8/16/2017
Malcolm, Charles H.	APPROVER		8/16/2017
Notes :			



NOTES:  
FOR ADDITIONAL NOTES AND REFERENCE DRAWINGS  
SEE DRAWING 5-G-061.



# DUKE ENERGY

QUALITY LEVEL:  
NUCLEAR SAFETY RELATED IN PART

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

TITLE:  
FLOW DIAGRAM  
FUEL POOL COOLING SYSTEM  
UNIT 2

PLANT DWG. NO:  
5-G-0307

13	INCORPORATED: EC# 409495	ELECTRONICALLY SIGNED
12	INCORPORATED: EC# 89579	ELECTRONICALLY SIGNED
REV	DESCRIPTION	APPROVED



Facility Code :	HNP		
Applicable Facilities :	HNP		
Document Number :	5-G-0804		
Document Revision Number :	025		
Document EC Number :			
Change Reason :	EC0000407698		
Document Title :	FLOW DIAG CHEM & VOL CNTL SYS SH 2		
Pearson, Drew	PREPARER		4/12/2017
Almond, Erv	APPROVER		4/12/2017
Notes :			



CAR-2165  
G-804

PIPING DRAINS & VENTS  
VALVE & LINE NO. TABULATION

HEADER LINE NO. A	LINE NO. B	VALVE NO. C(1st)	VALVE NO. D(2nd)	LOCATION
2CS3-93SN-1	2CS1-214SN-1	2CS-V231SN-1	2CS-V232SN-1	(D1)
2CS3-93SN-1	2CS1-215SN-1	2CS-V233SN-1	2CS-V234SN-1	(D2)
2CS3-93SN-1	2CS1-216SN-1	2CS-V235SN-1	2CS-V236SN-1	(D3)
2CS3-153SN-1	2CS1-218SN-1	2CS-V241SN-1	2CS-V242SN-1	(D6)
2CS3-153SN-1	2CS1-219SN-1	2CS-V243SN-1	2CS-V244SN-1	(D10)
2CS3-157SN-1	2CS1-220SN-1	2CS-V774SN-1	2CS-V775SN-1	(D11)
2CS3-197SN-1	2CS1-192SN-1	2CS-D775SN-1	2CS-D785SN-1	(E13)
2CS3-196SN-1	2CS1-94SN-1	2CS-D815SN-1	2CS-D825SN-1	(E12)
3CS3-160SN-1	3CS1-145SN-1	3CS-D795SN-1	3CS-D805SN-1	(G11)
3CS3-180SN-1	3CS1-562SN-1	3CS-D287SN-1	3CS-V288SN-1	(I13)
3CS3-180SN-1	3CS1-563SN-1	3CS-D289SN-1	3CS-D290SN-1	(J13)

NOTES:

1. VALVE FAILS WITH FLOW TO VOLUME CONTROL TANK.
2. ALL (W) ITEMS ON THIS DWG. ARE SHOWN WITHOUT PREFIX COLCS.
3. ALL INSTRUMENTS ARE SUPPLIED BY (W) EXCEPT THOSE INDICATED BY \*\*.
4. VALVE FAILS OPEN ON POWER FAILURE ONLY.
5. THE BORON MONITOR SYSTEM IS ABANDONED IN PLACE.
6. THIS DRAWING IS A REPRODUCTION OF THE CORRESPONDING WESTINGHOUSE DRAWING.

WEST. DWG. NO. 114E066-SH. 2 OF 4 SUB. 4  
(EBASCO FILE NO. 1364-13, REV. 5)  
DRAWING HAS BEEN ALTERED, AS NECESSARY, FOR THE  
SHEARON HARRIS NUCLEAR POWER PLANT.

REFERENCE DRAWINGS

PIPING LINE LIST CAR-1364-B-070  
VALVE & SPECIALTY LIST CAR-1364-B-069  
INSTRUMENT LIST CAR-2166-B-432  
FLOW DIAGRAM LEGEND CAR-2165-G-041  
VALVE STEM LEAK-OFF CAR-2165-G-168

25	INCORPORATED EC# 407698 (116-119)	ELECTRONICALLY SIGNED
24	INCORPORATED EC# 48426 (E18, E19)	ELECTRONICALLY SIGNED
23	2/24/88 EDITORIAL CORRECTION: CORRECTED SAFETY CLASS DESIGNATION (D6) (REF. CR-97-00998-2)	LLS RPP DLS DLS
22	1-27-85 INCORPORATED: PCR-7236(B3-B5, B16-B19,C3,H7,J6,J7,K6,K7)	LLS RPP MMP MMP
21	11-5-82 THIS DWG HAS BEEN ELECTRONICALLY REDRAWN WITH DESIGN CHANGE. INCORPORATED: PCR-6547(L2,L3, M1-M3,N1-N3) NON-DESIGN CHANGE: REVISED VALVE LEAK-OFF DESIG. AS CIRCLED	TRW RPP GOW MMP
REV	DATE	DESCRIPTION
THIS DRAWING HAS BEEN PRODUCED AND IS CONTROLLED ON THE NED CAD/E SYSTEM. ANY REVISIONS TO THIS DOCUMENT SHOULD BE DONE USING THE CAD/E SYSTEM TO ASSURE PROPER CONTROL OF THE ELECTRONIC DRAWING DATABASE.		
NUCLEAR SAFETY RELATED (Q-LIST)		
YES	NO	PARTIAL F.P.-Q R.W.-Q
DUKE ENERGY		
NUCLEAR ENGINEERING DEPARTMENT - RALEIGH, N.C.		
PLANT: HARRIS' NUCLEAR PROJECT - UNIT 1		
SCALE: NONE		
TITLE: FLOW DIAGRAM CHEMICAL & VOLUME CONTROL SYSTEM SHEET 2		DWG NO. CAR-2165 G-804