DWG NO	REFERENCE	DWG NO	REFERENCE
9E0PEAG,H,J-N,*1, *2 SHT.01	I/L-480V L/C 1N,1P,1R,1S,1T,1U,1W	9E0PFBA-D*1, *2 SHT.01	I/L-NON CLASS 1E MCCS
0E0PGAA SHT.01	I/L-13.8KV BUS 1K.1L	9E0PEAA-F*1, *2 SHT.01	I/L-480V L/C 1F.1G.1H.1J.1K.1L
0E0PEAA-G SHT.01	I/L-480V L/C 12F.12G.12H.12J-12M	9E0PKAA.B.C*1, *2 SHT.01	I/L-4.16KV BUS E1A.B.C
0E0PFAA-T SHT.01	I/L-480V COMMON MCCS	9E0PDAA*1, *2 SHT.01	I/L-4.16KV BUS 1D
9E0PMAA-M*1, *2 SHT.01	I/L-CLASS 1E MCCS	9E0PCAA.B.C.D*1, *2 SHT.01	I/L-13.8KV 1F.1G.1H.1J
9E0PFAA-Z*1, *2 SHT.01	I/L-NON CLASS 1E MCCS	9E0AAAD*1, *2 SHT.01	PHASING DIAGRAM
9E0PLAA,B,C*1, *2 SHT.01	I/L-480V L/C-E1A,B,C	9E0AAAA*1, *2 SHT.01	I/L-MAIN GEN & XFMRS

345KV NORTH BUS

UNIT 1 — UNIT 2

TO 138KV LINE

345KV SOUTH BUS

345KV SOUTH BUS

STP SWITCHYARD DIAGRAMS

Y501 Y500 Y502 3000A ISOLATORS (TYPICAL) Y511 Y510 Y512 Y522 Y520 Y521

S014

Y591 Y590 Y592 Y601 Y600 Y602 Y612 Y610 Y611

G029

G019

PHASE 'A' ONLY

1200A NON SEQ BUS

S024

MAIN XFMR MT001B
700/784 MVA, FOA, 55°/65°C
362.25-25KV, ϕ, 60HZ
Z-8.0% AT 700 MVA BASE

MAIN XFMR MT001A
650/728 MVA, FOA, 55°/65°C
359, 375/25KV, ϕ, 60 HZ
Z-7.8% @ 650 MVA BASE, 25KV

UNIT AUX XFMR UT002A
HV WDG-84/112 MVA OA/FOA
LV WDGS-42/56 MVA 65°C
25-13.8/13.8KVΔ3, 60HZ
ZH-X & ZH-Y-19.9% AT 84 MVA BASE
ZX-Y-36.1%

STANDBY XFMR ST001A (NO. 1)
HV WDG-46.5/62/77.5(87.19) MVA OA/FA/FOA
LV WDG-23.25/31/38.75(43.6) MVA 55°/65°C
362.25-13.8/13.8KVΔ3, 60HZ
ZH-X-5.3%, ZH-Y-5.4% & ZX-Y-12.0%
AT 23.25 MVA BASE

EMERGENCY XFMR ET001A
HV WDG 12/16/20(22.5) MVA OA/FOA/FOA
LV DWG 9/12 15(16.875) MVA 55°/65°C
138KV-13.8/13.8KVΔ3, 60HZ
ZH-X & ZH-Y-6.3%
ZX-Y-11.9%
ON 12 MVA BASE

UNIT AUX XFMR UT002A
HV WDG-84/112 MVA OA/FOA
LV WDGS-42/56 MVA 65°C
25-13.8/13.8KVΔ3, 60HZ
ZH-X & ZH-Y-20.1%
ZX-Y-36.2%
AT 84 MVA BASE

STANDBY XFMR ST002A
HV WDG-46.5/62/77.5(87.19) MVA OA/FA/FOA
LV WDGS-23.25/31/38.75(43.6) MVA 55°(65°) C
362.25-13.8/13.8KVΔ3, 60HZ.
ZH-X & ZH-Y-5.3%,ZX-Y-11.7%
AT 23.25 MVA BASE

L/C XFMRS
12F1 { 1000/1333KVA, AA/FA, 13.8KV-480V, ϕ, 60HZ, Z-7% AT 1000 KVA BASE
12F3 { 1500/2000KVA, AA/FA, 13.8KV-480V, ϕ, 60HZ, Z-8.86% AT 1500 KVA BASE

L/C XFMRS 12H1,12H2
500 KVA,OA
4.16KV-480V,ϕ,60HZ
Z-5% AT 500 KVA BASE

LOAD CENTER XFMRS
1200/1600KVA,AA/FA
13.8KV-480V,ϕ,60HZ
Z-8.0% AT 1200KVA BASE
(TYP UNLESS OTHERWISE SPECIFIED) NOTE 7

MAIN XFMRS
700/784 MVA, FOA, 55°/65°C
362.25-25KV, ϕ, 60HZ
Z-8.0% AT 700 MVA BASE

UNIT NO. 1 MAIN GENERATOR
1504.8 MVA, 0.9 PF
25KV, 3ϕ, 60HZ
75 PSIG HYDROGEN
X"DV-25.6%

UNIT NO. 2 MAIN GENERATOR
1504.8 MVA, 0.9 PF
25KV,3ϕ, 60HZ
75 PSIG HYDROGEN
X"DV-25.6%

1ϕ GROUNDING TRANSFORMER 200KVA,25KV-240V

1ϕ ,GROUNDING XFMR 200KVA/25KV-240V

TEMPORARY POWER

OUTDOOR CABINETS

NON SEQ BUS

13.8KV EMER OUTDOOR BUS 1K

13.8KV EMER OUTDOOR BUS 2K

13.8 KV OUTDOOR BUS 12Z

13.8KV EMER BUS 1L

13.8KV EMER BUS 2L

13.8KV BUSES

13.8KV AUX BUS 1J

13.8KV AUX BUS 2J

13.8KV AUX BUSES

BOP XFMRS

1D1,1D2
5000/6250(7000)KVA
OA/FA,55°C(65°C)
13.8-4.16KVΔ3, 60HZ
Z-5% AT 5000 KVA BASE

1H1,1H2
1000KVA,AA
4.16KV-480V,ϕ, 60HZ
Z-5.75% AT 1000 KVA BASE

2D1,2D2
5000/6250 (7000) KVA
OA/FA,FA55°C (65°C)
13.8-4.16KVΔ3, 60HZ
Z-5% AT 5000 KVA BASE

2H1,2H2
1000KVA,AA
4.16KV-480V, ϕ, 60HZ
Z-5.75% AT 1000 KVA BASE

AUX ESF XFMRS (EXCEPT E1B)
5/6.25 MVA (5.6/7.0 MVA) OA/FA,55°/65°C
DWAN/DNAF, 65°C W/LTC 13.8-4.16/2.402 KV, 3ϕ, 60HZ. Z-5.00% @ 5 MVA BASE

E1B AUX ESF XFMRS (E1B ONLY)
5/6.25 MVA DWAN/DNAF, 55°C 5.6/7 MVA
DWAN/DNAF, 65°C W/LTC 13.8-4.16/2.402 KV, 3ϕ, 60HZ. Z-5.00% @ 5 MVA BASE

CLASS 1E L/C XFRS
1000/1333 KVA, AA/FA
4.16KV-480V, ϕ, 60HZ
Z-4% AT 1000 KVA BASE (TYPICAL)

TRAIN 'A' TRAIN 'B' TRAIN 'C' TYPICAL TRAIN 'C' TRAIN 'B' TRAIN 'A'

4.16KV BUS E1A 4.16KV BUS E1B 4.16KV BUS E1C 4.16KV BUS E2C 4.16KV BUS E2B 4.16KV BUS E2A

4.16KV BUS 1D 4.16KV BUS 2D

480V L/C E1A 480V L/C E1B 480V L/C E1C 480 L/C E2C 480V L/C E2B 480V LC E2A

DG 11 5500KW, 4.16KV 3ϕ, 60HZ, 0.8PF (TYPICAL)

DG 12 DG 13 DG 23 DG 22 DG 21

480V L/C 1F 480 L/C 1J 480V L/C 1G 480V L/C 1K 480 L/C 1L 480V L/C 1U 480V L/C 2U 480V L/C 2L 480V L/C 2K 480V L/C 2G 480 L/C 2J 480V L/C 2F

480V L/C 1T 480V L/C 1N 480V L/C 1S 480V L/C 1P 480V L/C 1W 480V L/C 1R

480V L/C 12M 480V L/C 12F 480 L/C 12G 480V L/C 12H 480 L/C 12J 480V L/C 12K 480V L/C 12L

480V L/C 2R 480V L/C 2W 480V L/C 2P 480V L/C 2S 480V L/C 2N 480V L/C 2T

480V MCC (TYPICAL)

480V, 3ϕ, 60HZ BOP DG* 1, 700KW

480V, 3ϕ, 60HZ LTG DSL 700KW

4.16KV, 60HZ, 1200KW ISC DG

4.16KV 3ϕ,60HZ ISC DG NO 1200KW

NOTES:
1. FOR LEGEND AND GENERAL NOTES REFER TO DWG. 00009E0NZ01*1, *2 SHT.01
2. DELETED.
3. THESE DISCONNECT SWITCHES ARE ELECTRICALLY INTERLOCKED AND PREVENT THE CLOSING OF BOTH THE SWITCHES AT THE SAME TIME.
4. DELETED.
5. THE PHASING FOR 12H1/12H2 LOAD CENTERS IS DIFFERENT AS SHOWN IN THE RATING DESCRIPTION.
6. ALL CLASS 1E EQUIPMENTS ARE SHOWN WITHIN DASHED LINES.
7. TEMP RATINGS FOR L/C XFMRS ARE AS SHOWN BELOW.
   (1) CLASS 1E L/C XFMRS -80°C
   (2) L/C XFMRS 1N1, 1P1, 1R1, 1S1, 1T1, 1U1, 1U2, 1W1, 1W2, 12K1, 12K2, 12M1, 12M2, 2N, 2P, 2R, 2S, 2T, 2U1, 2U2, 2W1, 2W2, -80°C
   (3) ALL OTHER L/C XFMRS-150°C, EXCEPT 12L1-55°C
8. FOR SYSTEM PHASORS SEE PHASING DIAGRAM DWG. 1E0AAAD SHT.01. 2E0AAAD SHT.01
9. SEE NOTE 5 ON PHASING DIAGRAM. 1E0AAAD SHT.01, 2E0AAAD SHT.01

NUCLEAR SAFETY RELATED Q

NO.	ISSUE DATE	REVISION	ORIG	CKR	RE	DV	SE
21		INCORP. DCN 0901876 AND REVISED PER CR.09-117-9.	JGL				
20	9-5-07	INCORP. DCN 0700849.	JSH	ON FILE			
19	6-23-05	INCORP. DCN 0500726.	VJM	ON FILE			
18	10-16-02	REVISED PER CR 02-13827-1	JGL	ON FILE			
0-17	8-20-83	ISSUED FOR CONSTRUCTION.	SIGNATURES ON FILE				

PRIORITY	CADD FILE NO.	FSUG. NO.	STI. NO.
1	E0187.211	D070928	

SOUTH TEXAS PROJECT
NUCLEAR OPERATING COMPANY

SINGLE LINE DIAGRAM
MAIN ONE LINE DIAGRAM
UNIT NO. 1 & 2

SCALE	DWG. NO.	SHT.	REV.
NONE	00000E0AAAA	01	21

LR BOUNDARY DRAWING NO.	REV.
LR-STP-ELEC-00000E0AAAA	0A

D319X

ESEED.DGN