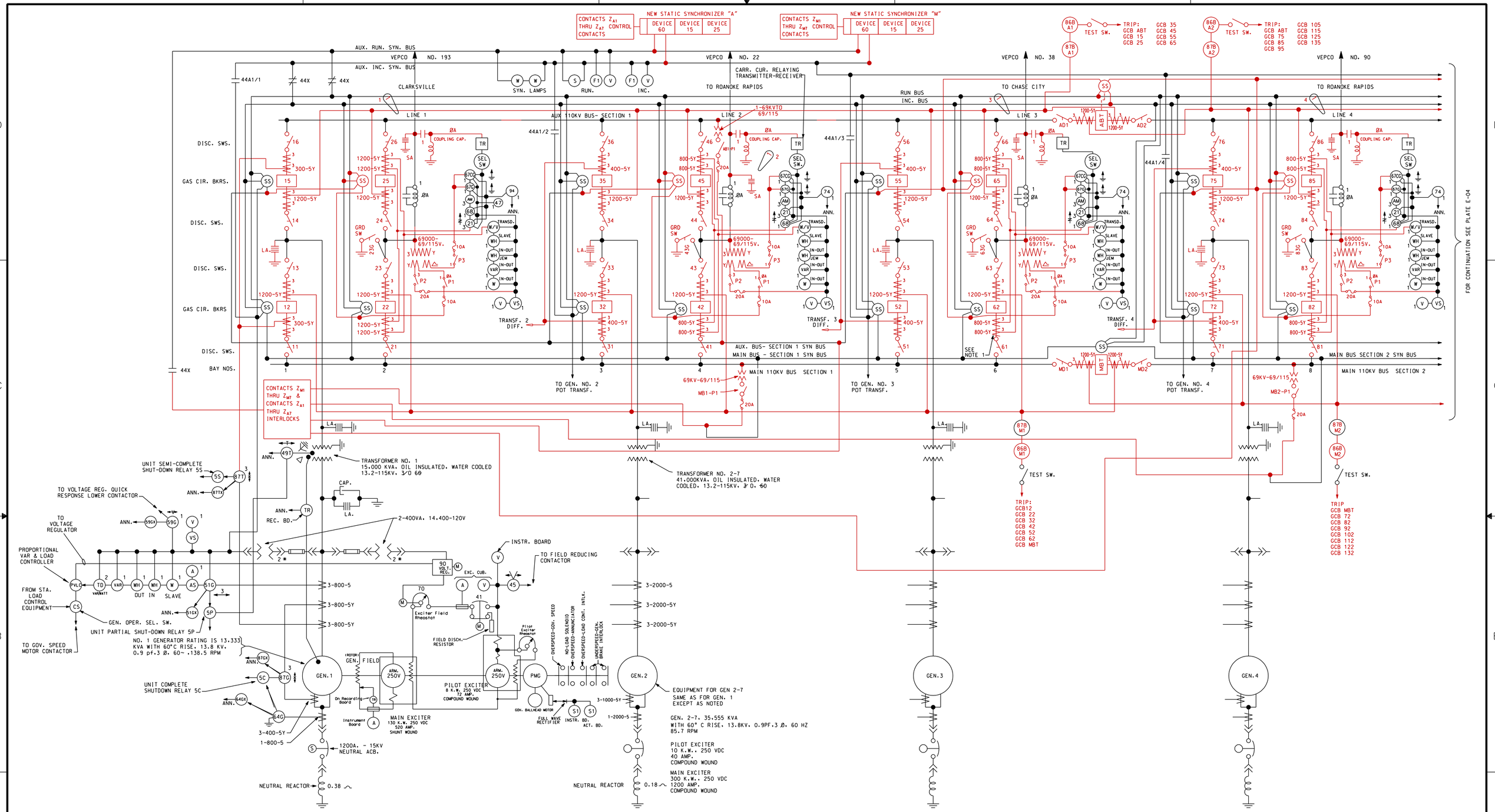

GENERAL NOTES:
1. ALL G.F. GCB BUSHINGS CT'S ARE 2000 TO 5 MULTI-RATIO.

UNIT COMPLETE SHUTDOWN RELAY 5C

ACTUATED BY:
- GENERATOR DIFFERENTIAL RELAYS - 87G
- GENERATOR NEUTRAL GROUND RELAY - 64G

FUNCTIONS:
- ENERGIZES GOVERNOR SHUTDOWN SOLENOID (65 SD)
- TRIPS TRANSFORMER MAIN BUS OCB-152M
- TRIPS TRANSFORMER AUX BUS OCB-152A
- TRIPS MAIN EXCITER FILED ACB - (411)
- TRIPS GENERATOR NEUTRAL ACB - N52
- ENERGIZES GENERATOR CO_2 RELEASE - (CRA)
- LOAD CONTROL - EQUIPMENT LOCKOUT

UNIT SEMI-COMPLETE SHUTDOWN RELAY 5S

ACTUATED BY:
- GENERATOR CO-2 THERMAL RELAYS (26CO)
- OIL-O-STATIC LOW PRESSURE RELAY (OAA)
- GOVERNOR LOW OIL PRESSURE SWITCH - 63Q
- UNIT BEARING TEMPERATURE RELAYS - 38'S
- MANUAL EMERGENCY SHUTDOWN SWITCH - CST
- TRANSFORMER SPRAY RELEASE RELAYS - 20 WY
- TRANSFORMER DIFFERENTIAL RELAYS - 87T
- GOVERNOR SHUTDOWN SOLENOID AUXILIARY SWITCH

FUNCTIONS:
- ENERGIZES GOVERNOR SHUTDOWN SOLENOID (65 SD)
- TRIPS TRANSFORMER MAIN BUS OCB-152M
- TRIPS TRANSFORMER AUX. BUS OCB-152A
- TRIPS MAIN EXCITER FIELD ACB - (411)
- TRIPS GENERATOR NEUTRAL ACB-N52
- LOAD CONTROL - EQUIPMENT LOCKOUT

UNIT PARTIAL SHUTDOWN RELAY 5P

ACTUATED BY:
- GENERATOR OVERCURRENT RELAYS 51G 51GX (5P)
- TRANSFORMER THERMAL RELAYS 49T

FUNCTIONS:
- ENERGIZES GOVERNOR SPEED-NO-LOAD SOLENOID (65 SNL)
- TRIPS TRANSFORMER MAIN BUS OCB-152M
- TRIPS TRANSFORMER AUX. BUS OCB-152A
- LOAD CONTROL - EQUIPMENT LOCKOUT
- DEENERGIZES GENERATOR OVERCURRENT AUXILIARY RELAY 5P CONTACT

UNIT WILL SHUT DOWN IF SELECTOR SWITCH IS LEFT IN PROPORTIONAL LOAD CONTROL

SYMBOL	ZONE	DESCRIPTION	DATE	BY
4	1	AMENDMENT NO. 3	1/17/02	R.L.W.

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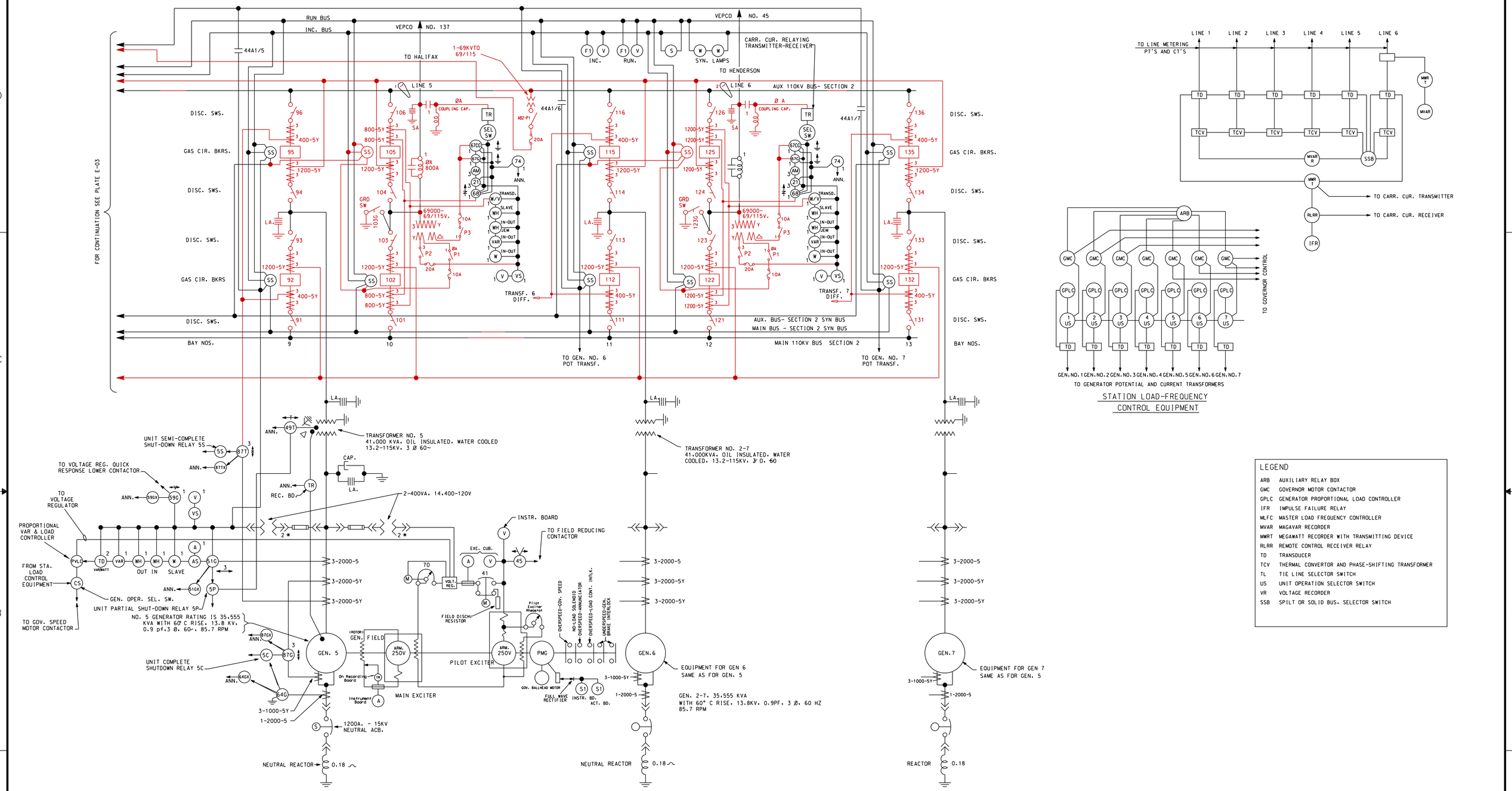
JOHN H. KERR PROJECT - SWITCHYARD
121 kV GAS CIRCUIT BREAKER INSTALLATION
MAIN ONE LINE - NEW EQUIPMENT
SHEET NO. 1
JOHN H. KERR RESERVOIR,VIRGINIA/N. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		JK 105-02-20	E03

SCALE: | SHEET 08

W JOB 2002
W 1278

JKP102TBLK.DGN JKP102E03.DGN



STATION LOAD-FREQUENCY CONTROL EQUIPMENT

LEGEND

ARB	AUXILIARY RELAY BOX
GMC	GOVERNOR MOTOR CONTACTOR
GPLC	GENERATOR PROPORTIONAL LOAD CONTROLLER
IFR	IMPULSE FAILURE RELAY
MLFC	MASTER LOAD FREQUENCY CONTROLLER
MVAR	MAGAVAR RECORDER
MWRT	MEGAWATT RECORDER WITH TRANSMITTING DEVICE
RLRR	REMOTE CONTROL RECEIVER RELAY
TD	TRANSDUCER
TCV	THERMAL CONVERTOR AND PHASE-SHIFTING TRANSFORMER
TL	TIE LINE SELECTOR SWITCH
US	UNIT OPERATION SELECTOR SWITCH
VR	VOLTAGE RECORDER
SSB	SPILT OR SOLID BUS. SELECTOR SWITCH

SYMBOL	ZONE	DESCRIPTION	DATE	BY
2	1	AMENDMENT NO. 3	1/17/02	R.L.W.

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JOHN H. KERR PROJECT - SWITCHYARD
121 kV GAS CIRCUIT BREAKER INSTALLATION

MAIN ONE LINE - NEW EQUIPMENT
SHEET NO. 2

JOHN H. KERR RESERVOIR,VIRGINIA/N. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		JK 105-02-20	E04

SCALE: | SHEET 09

16 Jan 2002
14:03:26

JKP102TBLK.DGN JKP102E04.DGN

CONDUIT (NOTE 1)			CABLE (NOTE 1)					DESCRIPTION				
NUMBER	SIZE	LGTH	NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLTS	CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
			J400	1-9/c	10 AWG		40		GCB 25 Control	Automation Panel 3	Relay bd. pnl. 8	
			J401	1-5/c	12 AWG		40		GCB 25 Recloser Control	Benchboard Panel 8	Relay bd. pnl. 8	
			J402	1-9/c	10 AWG		38		GCB 45 Control	Automation Panel 3	Relay bd. pnl. 9	
			J403	1-5/c	12 AWG		40		GCB 45 Recloser Control	Benchboard Panel 9	Relay bd. pnl. 9	
			J404	1-9/c	10 AWG		36		GCB 65 Control	Automation Panel 3	Relay bd. pnl. 10	
			J405	1-5/c	12 AWG		40		GCB 65 Recloser Control	Benchboard Panel 10	Relay bd. pnl. 10	
			J406	1-9/c	10 AWG		34		GCB 85 Control	Automation Panel 3	Relay bd. pnl. 11	
			J407	1-5/c	12 AWG		40		GCB 85 Recloser Control	Benchboard Panel 11	Relay bd. pnl. 11	
			J408	1-9/c	10 AWG		32		GCB 105 Control	Automation Panel 3	Relay bd. pnl. 12	
			J409	1-5/c	12 AWG		40		GCB 105 Recloser Control	Benchboard Panel 12	Relay bd. pnl. 12	
			J410	1-9/c	10 AWG		30		GCB 125 Control	Automation Panel 3	Relay bd. pnl. 13	
			J411	1-5/c	12 AWG		40		GCB 125 Recloser Control	Benchboard Panel 13	Relay bd. pnl. 13	
			J412	1-7/c	10 AWG		28		Line breakers protective trip	Automation Panel 3	Relay bd. pnl. 14	
			J413	1-5/c	12 AWG		70		Gen. 1 swyd. breakers automatic close circuit	Automation Panel 3	Benchboard pnl. 7	
			J414	1-5/c	12 AWG		72		Gen. 2 swyd. breakers automatic close circuit	Automation Panel 3	Benchboard pnl. 6	
			J415	1-5/c	12 AWG		74		Gen. 3 swyd. breakers automatic close circuit	Automation Panel 3	Benchboard pnl. 5	
			J416	1-5/c	12 AWG		76		Gen. 4 swyd. breakers automatic close circuit	Automation Panel 3	Benchboard pnl. 4	
			J417	1-5/c	12 AWG		78		Gen. 5 swyd. breakers automatic close circuit	Automation Panel 3	Benchboard pnl. 3	
			J418	1-5/c	12 AWG		80		Gen. 6 swyd. breakers automatic close circuit	Automation Panel 3	Benchboard pnl. 2	
			J419	1-5/c	12 AWG		82		Gen. 7 swyd. breakers automatic close circuit	Automation Panel 3	Benchboard pnl. 1	
			J420	1-9/c	12 AWG		20		Gen. main breakers auto. close circuits	Automation Panel 3	Automation Panel 2	
			J421	1-9/c	12 AWG		20		Gen. auxiliary breakers auto. close circuits	Automation Panel 3	Automation Panel 2	
			J422	1-5/c	12 AWG		70		Main and auxiliary bus potential circuits	Automation Panel 3	Benchboard Panel 10	
			J423	1-3/c	12 AWG		20			Automation Panel 3	Automation Panel 4	
			J424	1-12/c	12 AWG		20		Synch. A parameter/breaker select circuits	Automation Panel 3	Automation Panel 2	
			J425	1-12/c	12 AWG		20		Synch. M parameter/breaker select circuits	Automation Panel 3	Automation Panel 2	
			J426	1-9/c	12 AWG		30		Automatic synchronizer control	Automation Panel 3	Automation Panel 1	
			J427	1-5/c	12 AWG		70		Unit 1 breakers auto. close circuit	Benchboard panel 7	Automation Panel 1	
			J428	1-5/c	10 AWG		50		Bus differential control of GCB 15	Benchboard panel 7	Instrument Bd. Panel 14	
1			J429	1-5/c	12 AWG		72		GCB 15 automatic close control interlock	Benchboard panel 7	Recorder Bd. Panel 2	
			J430	1-5/c	12 AWG		72		Unit 2 breakers auto. close circuit	Benchboard panel 6	Automation Panel 1	
			J431	1-5/c	10 AWG		52		Bus differential control of GCB 35	Benchboard panel 6	Instrument Bd. Panel 14	
2			J432	1-5/c	12 AWG		74		GCB 35 automatic close control interlock	Benchboard panel 6	Recorder Bd. Panel 3	
			J433	1-5/c	12 AWG		74		Unit 3 breakers auto. close circuit	Benchboard panel 5	Automation Panel 1	
			J434	1-5/c	10 AWG		54		Bus differential control of GCB 55	Benchboard panel 5	Instrument Bd. Panel 14	
3			J435	1-5/c	12 AWG		76		GCB 55 automatic close control interlock	Benchboard panel 5	Recorder Bd. Panel 4	

SYMBOL	ZONE	DESCRIPTION	DATE	BY
3	1	AMENDMENT NO. 3	1/17/02	R.L.W.

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JOHN H. KERR PROJECT - SWITCHYARD
121 kV GAS CIRCUIT BREAKER INSTALLATION

CONDUIT AND CABLE SCHEDULE
SHEET TWENTY

JOHN H. KERR RESERVOIR,VIRGINIA/N. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		JK 105-02-20	E123
SCALE:			SHEET 128

16 Jan 2002
11:03:18

CONDUIT (NOTE 1)			CABLE (NOTE 1)					DESCRIPTION				
NUMBER	SIZE	LGTH	NUMBER	NO. COND.	GAUGE	INSUL	RUN LGTH	OP-VOLTS	CABLE FUNCTION	FROM	TO	ROUTING AND REMARKS
			J436	1-5/c	12 AWG		76		Unit 4 breakers auto. close circuit	Benchboard panel 4	Automation Panel 1	
			J437	1-5/c	10 AWG		56		Bus differential control of GCB 75	Benchboard panel 4	Instrument Bd. Panel 14	
1 1			J438	1-5/c	12 AWG		78		GCB 75 automatic close control interlock	Benchboard panel 4	Recorder Bd. Panel 5	
			J439	1-5/c	12 AWG		78		Unit 5 breakers auto. close circuit	Benchboard panel 3	Automation Panel 1	
			J440	1-5/c	10 AWG		58		Bus differential control of GCB 95	Benchboard panel 3	Instrument Bd. Panel 14	
2 1			J441	1-5/c	12 AWG		80		GCB 95 automatic close control interlock	Benchboard panel 3	Recorder Bd. Panel 6	
			J442	1-5/c	12 AWG		80		Unit 6 breakers auto. close circuit	Benchboard panel 2	Automation Panel 1	
			J443	1-5/c	10 AWG		60		Bus differential control of GCB 115	Benchboard panel 2	Instrument Bd. Panel 14	
3 1			J444	1-5/c	12 AWG		82		GCB 115 automatic close control interlock	Benchboard panel 2	Recorder Bd. Panel 7	
			J445	1-5/c	12 AWG		82		Unit 7 breakers auto. close circuit	Benchboard panel 1	Automation Panel 1	
			J446	1-5/c	10 AWG		62		Bus differential control of GCB 135	Benchboard panel 1	Instrument Bd. Panel 14	
4 1			J447	1-5/c	12 AWG		84		GCB 135 automatic close control interlock	Benchboard panel 1	Recorder Bd. Panel 8	
			J450	1-7/c	10 AWG		30		Line auxiliary breakers protective trip	Automation panel 3	Instrument Bd. Panel 14	
			J451	1-3/c	12 AWG		40		GCB 25 control	Instrument Bd. panel 14	Relay Bd. Panel 8	
			J507A	1-5/c	10 AWG		46		Aux. bus differential control of GCB 25	Instrument Bd. panel 14	Benchboard Panel 8	
			J509A	1-5/c	10 AWG		44		Aux. bus differential control of GCB 45	Instrument Bd. panel 14	Benchboard Panel 9	
			J511A	1-5/c	10 AWG		42		Aux. bus differential control of GCB 65	Instrument Bd. panel 14	Benchboard Panel 10	
			J512A	1-5/c	10 AWG		42		Aux. bus differential control of GCB ABT	Instrument Bd. panel 14	Benchboard Panel 10	
			J514A	1-5/c	10 AWG		40		Aux. bus differential control of GCB 85	Instrument Bd. panel 14	Benchboard Panel 11	
			J516A	1-5/c	10 AWG		37		Aux. bus differential control of GCB 105	Instrument Bd. panel 14	Benchboard Panel 12	
			J519A	1-5/c	10 AWG		35		Aux. bus differential control of GCB 125	Instrument Bd. panel 14	Benchboard Panel 13	

SYMBOL	ZONE	DESCRIPTION	DATE	BY
4 1		AMENDMENT NO. 3	1/17/02	R.L.W.

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JOHN H. KERR PROJECT - SWITCHYARD
121 kV GAS CIRCUIT BREAKER INSTALLATION

CONDUIT AND CABLE SCHEDULE
SHEET TWENTY-ONE

JOHN H. KERR RESERVOIR,VIRGINIA/N. CAROLINA

SIZE	INVITATION NO.	FILE NO.	PLATE
F		JK 105-02-20	E124

SCALE: | SHEET 129

18 JAN 2002
11:03:18

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