Brookhaven National Laboratory
Plant Engineering - E&CS Division
Engineering Change Notice Form

PROJECT: CCWF II **JOB No.** 11705

ECN Title: Approved Fuses and CB/ Relay settings for delivered equipment. **ECN No.** 55

Affected Documents: Specification 16350A

Requested Change (Attach sketch if applicable): Fuses, CB/ Relay settings revised per Coordination Study performed by PSA, Inc. for equipment delivered contrary to Specification 16350A. Replace fuses, as specified, verify CB/ Relay settings per attached Report Table and 1-Line Drawings.

Refer to attached Documents: CCWF-II Protective Device Report, dated 10/22/2010 (6-pages), Att. M - MV SWGR 600-2 Relay Settings, Rev. 0 (1-Pg), Att. O - LV SUB-600-2 CB Settings, Rev. 0 (1-Pg), CCWF-II 1-Lines, dated 10/07/2010, Rev. 2 (8 Pages)

Requested by: John P. Perkins, PE Date: 29-Oct-10

Resolution: Install specified fuses per Protective Device Report Table (attached). Replacement fuses and CB/ Relay settings are evaluated in study performed by PSA, Inc. entitled Central Chilled Water Facility Phase II, Electrical Arc Flash Hazard Analysis, Rev. 2

Approvals: A/E or Proj. Eng.: Date: 10/29/2010

Project Coordinator: Date: 11/12/10

Manager: Date:

Contractor shall take the following action:

- ☐ Await change order from P&PM
- ☑ Proceed with change as described
- ☐ Provide cost proposal for change as described

Distribution:

E. W. Howell	Giffels	PPM
E&U	MPO	
O&M	DOE	
NSLS II	ECN File	

Protective Device	Load Device	Manufacturer	Type	Description	Frame	Trip
SUB-600B	**Drawing E-601**					
LBSF-600B-1	SUB-600B Main Bus	S&C	SM-5, 14.4kV E-Rated	3E- 2-400E Standard Speed	400.00	400.00
LBSF-600B-3	TX-3 (600-TRNF-510)	S&C	SM-5, 14.4kV E-Rated	3E- 2-400E Standard Speed	400.00	400.00
LBST 600B 4/ 5	Tie Switch	CUTLER-HAMMER	WLI	600-1200A	1,200.00	N/A
LBSF 600B 6	Spare Switch	CUTLER-HAMMER	WLI	600-1200A	1,200.00	N/A
LBSF 600B 7	TX-4 (600-TRNF-513)	S&C	SM-5, 14.4kV E-Rated	3E- 2-400E Standard Speed	400.00	400.00
LBSF 600B 8	Spare Switch	CUTLER-HAMMER	WLI	600-1200A	1,200.00	N/A
SWGR-600-2	**Drawing E-601**					
SWGR-600-2 1M3-52	SUB-600-2 Main-1 (102B)	POWELL	PV	1200-3000A	1,200.00	N/A
SWGR-600-2 1M3-51		GE MULTILIN	750	50/51, 5A CT	N/A	NOTE 1
SWGR-600-2 1M3-51N		GE MULTILIN	750	50N/51N, 5A CT	N/A	NOTE 1
SWGR-600-2 1M4-52	SUB-600-2 Main-2 (103B)	POWELL	PV	1200-3000A	1,200.00	N/A
SWGR-600-2 1M4-51		GE MULTILIN	750	50/51, 5A CT	N/A	NOTE 1
SWGR-600-2 1M4-51N		GE MULTILIN	750	50N/51N, 5A CT	N/A	NOTE 1
SWGR-600-2 52-9	SUB-600-2 South (101B) via 600-TRNF-512	POWELL	PV	1200-3000A	1,200.00	N/A
SWGR-600-2 101B-50/ 51-TOC1		GE MULTILIN	750	50/51, 5A CT	N/A	NOTE 1
SWGR-600-2 101B-50N		GE MULTILIN	750	50N/51N, 5A CT	N/A	NOTE 1
SWGR-600-2 102B-52	SUB-600-2 North (102B) via 600-TRNF-511	POWELL	PV	1200-3000A	1,200.00	N/A
SWGR-600-2 102B-50/ 51-TOC1		GE MULTILIN	750	50/51, 5A CT	N/A	NOTE 1
SWGR-600-2 102B-50N		GE MULTILIN	750	50N/51N, 5A CT	N/A	NOTE 1
FDS-600-2 2G1	CHL-9 (Future) (V03G01)	GE	9F60 EJ-2, 2.54 & 5.08kV R-Rated	2R-36R	200.00	200.00
FDS-600-2 2G1-51		GE MULTILIN	469	49/50, 5A CT	N/A	NOTE 2
FDS-600-2 2F1	Spare (V03F01)	GE	9F60 EJ-2, 2.54 & 5.08kV R-Rated	2R-36R	200.00	200.00
FDS-600-2 2F1-51		GE MULTILIN	469	49/50, 5A CT	N/A	
FDS-600-2 2E1	CHL-8 (Future) (V03E01)	GE	9F60 EJ-2, 2.54 & 5.08kV R-Rated	2R-36R	200.00	200.00
FDS-600-2 2E1-51		GE MULTILIN	469	49/50, 5A CT	N/A	NOTE 2
FDS-600-2 3D1	CHL-7 (Future) (V03D01)	GE	9F60 EJ-2, 2.54 & 5.08kV R-Rated	2R-36R	200.00	200.00
FDS-600-2 3D1-51		GE MULTILIN	469	49/50, 5A CT	N/A	NOTE 2

Protective Device	Load Device	Manufacturer	Type	Description	Frame	Trip
FDS-600-2 3C1	Chiller CHL-6 (V03C01)	GE	9F60 EJ-2, 2.54 & 5.08kV R-Rated	2R-36R	200.00	200.00
FDS-600-2 3C1-51		GE MULTILIN	469	49/50, 5A CT	N/A	NOTE 2
FDS-600-2 3B1	Chiller CHL-5 (V03B01)	GE	9F60 EJ-2, 2.54 & 5.08kV R-Rated	2R-36R	200.00	200.00
FDS-600-2 3B1-51		GE MULTILIN	469	49/50, 5A CT	N/A	NOTE 2
	Note 1: Refer to CCWF-II PSA SC/ Coordination/ AFH Study, Attachment M; MV SWGR-600-2 Relay Settings					
	Note 2: Settings for GE Multilin 469 Motor Management is per PSA Motor Starting Study (In Progress)					
SUB-600-2	**Drawing E-602**					
SUB-600-2S MCB (102B)	MAIN South	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	4,000.00	NOTE 3
SUB-600-2S CB 103B	BW-600-6	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2S CB 103C	Spare	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2S CB 103D	DP-2	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2S CB 104B	BW-600-7	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2S CB 104C	MCC-600-4	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2 TCB (105B)	Main Tie	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	4,000.00	NOTE 3
SUB-600-2N CB 106C	MCC-600-3	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2N CB 106B	BW-600-5	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2N CB 107B	BW-600-4	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2N CB 107C	Spare	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2N CB 107D	MCC-600A-2-MFDS	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	1,600.00	NOTE 3
SUB-600-2N MCB (108B)	MAIN North	GE	Entelliguard G CB	LSI, 800-5000AF, ANSI/UL1066	4,000.00	NOTE 3
	Note 3: Refer to CCWF-II PSA SC/ Coordination/ AFH Study, Attachment O; LV SUB-600-2 CB Settings					

Protective Device	Load Device	Manufacturer	Type	Description	Frame	Trip
MCC-600A-2	**Drawing E-603**					
MCC-600A-2 MFDS	MCC-600A-2	GOULD SHAWMUT	A4BY, 600V Class L	200-6000A	800.00	800.00
MCC-600A-2 FDS-2A	PCHP-5 (Future)	BUSSMANN	LPJ, 600V Class J	1-600A	175.00	175.00
MCC-600A-2 OL-2A		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600A-2 FDS-3A	PCHP-6 (Future)	BUSSMANN	LPJ, 600V Class J	1-600A	175.00	175.00
MCC-600A-2 OL-3A		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600A-2 FDS-4A	PCHP-7 (Future)	BUSSMANN	LPJ, 600V Class J	1-600A	175.00	175.00
MCC-600A-2 OL-4A		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600A-2 FDS-5A	PCHP-8	BUSSMANN	LPJ, 600V Class J	1-600A	175.00	175.00
MCC-600A-2 OL-5A		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600A-2 FDS-6A	PCHP-9	BUSSMANN	LPJ, 600V Class J	1-600A	175.00	175.00
MCC-600A-2 OL-6A		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600A-2 FDS-7E	EUH-3	GOULD SHAWMUT	A4J, 600V Class J	15-600A	20.00	20.00
MCC-600A-2 FDS-7G	EF-2	BUSSMANN	LPJ, 600V Class J	1-600A	6.00	6.00
MCC-600A-2 OL-7G		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600A-2 FDS-8E	EUH-4	GOULD SHAWMUT	A4J, 600V Class J	15-600A	20.00	20.00
MCC-600A-2 FDS-8G	60A Weld Recept	GOULD SHAWMUT	A4J, 600V Class J	15-600A	60.00	60.00
MCC-600-3	**Drawing E-604**					
MCC-600-3 FDS-1E	EF-9	BUSSMANN	LPJ, 600V Class J	1-600A	10.00	10.00
MCC-600-3 OL-1E		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600-3 FDS-1J	ACU-2	BUSSMANN	LPJ, 600V Class J	1-600A	3.00	3.00
MCC-600-3 FDS-2C	MOV-716	BUSSMANN	LPJ, 600V Class J	1-600A	3.00	3.00
MCC-600-3 FDS-2A	MOV-715	BUSSMANN	LPJ, 600V Class J	1-600A	3.00	3.00
MCC-600-3 FDS-2E	MOV-717 (Future)	BUSSMANN	LPJ, 600V Class J	1-600A	3.00	3.00
MCC-600-3 FDS-2G	MOV-718 (Future)	BUSSMANN	LPJ, 600V Class J	1-600A	3.00	3.00
MCC-600-3 FDS-2J	MOV-719 (Future)	BUSSMANN	LPJ, 600V Class J	1-600A	3.00	3.00
MCC-600-3 FDS-2L	MOV-714	BUSSMANN	LPJ, 600V Class J	1-600A	3.00	3.00
MCC-600-3 FDS-3C	CNR-2	BUSSMANN	LPJ, 600V Class J	1-600A	10.00	10.00
MCC-600-3 FDS-3G	SP-3, SP-4	GOULD SHAWMUT	A4J, 600V Class J	15-600A	15.00	15.00
MCC-600-3 FDS-4E	EF-6	BUSSMANN	LPJ, 600V Class J	1-600A	1.00	1.00
MCC-600-3 OL-4E		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600-3 FDS-4G	EF-7	GOULD SHAWMUT	A4J, 600V Class J	15-600A	20.00	20.00
MCC-600-3 OL-4G		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600-3 FDS-4J	DP-3/ MLC-2	GOULD SHAWMUT	AJT, 600V Class J	15-600A	200.00	200.00

Protective Device	Load Device	Manufacturer	Type	Description	Frame	Trip
MCC-600-4	**Drawing E-605**					
MCC-600-4 FDS-1E	60A Weld Recept_3/F	GOULD SHAWMUT	A4J, 600V Class J	15-600A	60.00	60.00
MCC-600-4 FDS-1G	60A Weld Recept_2/H	GOULD SHAWMUT	A4J, 600V Class J	15-600A	60.00	60.00
MCC-600-4 FDS-2C	AHU-3A/ B (Sup/ Ret)	GOULD SHAWMUT	A4J, 600V Class J	15-600A	200.00	150.00
MCC-600-4 FDS-2G	AHU-4	GOULD SHAWMUT	A4J, 600V Class J	15-600A	60.00	60.00
MCC-600-4 FDS-3A	IAC-3	GOULD SHAWMUT	A4J, 600V Class J	15-600A	300.00	300.00
MCC-600-4 FDS-3F	EF-8	GOULD SHAWMUT	A4J, 600V Class J	15-600A	20.00	20.00
MCC-600-4 OL-3F		AB	SMC, Class 20	0.25-1220A	N/A	N/A
MCC-600-4 FDS-3H	60A Weld Recept	GOULD SHAWMUT	A4J, 600V Class J	15-600A	60.00	60.00
MCC-600-4 CB-4A	IAC-4	CUTLER-HAMMER	HKD	100-400A	400.00	300.00
MCC-600-4 FDS-5A	EF-10	BUSSMANN	LPJ, 600V Class J	1-600A	10.00	10.00
MCC-600-4 OL-5A		AB	SMC, Class 20	0.25-1220A	N/A	N/A
DP-2 Panel	**Drawing E-607**					
DP-2 CB-1	RP-4, RP-6	GE	SELA, Spectra RMS	15-150A	70.00	70.00
DP-2 CB-2	LP-2	GE	SELA, Spectra RMS	15-150A	100.00	100.00
DP-2 CB-5	RP-U (ALT)	GE	SELA, Spectra RMS	15-150A	50.00	50.00
DP-2 CB-6	RP-5	GE	SELA, Spectra RMS	15-150A	25.00	25.00
DP-2 CB-7	AD-3	GE	SELA, Spectra RMS	15-150A	15.00	15.00
FDS AD-3 FUSE	AD-3	GOULD SHAWMUT	TRS, 600V Class RK5	3.2-10A	5.00	5.00
DP-3 Panel	**Drawing E-607**					
DP-3 MCB	DP-3	GE	SFLA, Spectra RMS	70-250A	250.00	200.00
DP-3 FCB	All Loads	GE	SELA, Spectra RMS	15-150A	25.00	25.00
BW-600-4	**Drawing E-606**					
FUSE VFD CHP-5	CHP-5	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	400.00	400.00
FUSE CHP-5		BUSSMANN	LPJ, 600V Class J	1-600A	600.00	600.00
FUSE VFD CHP-6	CHP-6	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	400.00	400.00
FUSE CHP-6		BUSSMANN	LPJ, 600V Class J	1-600A	600.00	600.00
BW-600-5	**Drawing E-606**					
FUSE VFD CHP-7	CHP-7 (Future)	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	400.00	400.00
FUSE CHP-7		BUSSMANN	LPJ, 600V Class J	1-600A	600.00	600.00

Protective Device	Load Device	Manufacturer	Type	Description	Frame	Trip
FUSE VFD CHP-8	CHP-8 (Future)	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	400.00	400.00
FUSE CHP-8		BUSSMANN	LPJ, 600V Class J	1-600A	600.00	600.00
FUSE VFD CHP-9	CHP-9 (Future)	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	400.00	400.00
FUSE CHP-9		BUSSMANN	LPJ, 600V Class J	1-600A	600.00	600.00
BW-600-6	**Drawing E-606**					
FUSE VFD CTC-5	CTC-5	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	200.00	175.00
FUSE CTC-5		BUSSMANN	LPJ, 600V Class J	1-600A	250.00	250.00
FUSE VFD CTC-6	CTC-6	GOULD SHAWMUT	AJT, 600V Class J	15-600A	200.00	175.00
FUSE CTC-6		BUSSMANN	LPJ, 600V Class J	1-600A	250.00	250.00
FUSE VFD CTC-7	CTC-7 (Future)	GOULD SHAWMUT	AJT, 600V Class J	15-600A	200.00	175.00
FUSE CTC-7		BUSSMANN	LPJ, 600V Class J	1-600A	250.00	250.00
FUSE VFD CTC-8	CTC-8 (Future)	GOULD SHAWMUT	AJT, 600V Class J	15-600A	200.00	175.00
FUSE CTC-8		BUSSMANN	LPJ, 600V Class J	1-600A	250.00	250.00
FUSE VFD CTC-9	CTC-9 (Future)	GOULD SHAWMUT	AJT, 600V Class J	15-600A	200.00	175.00
FUSE CTC-9		BUSSMANN	LPJ, 600V Class J	1-600A	250.00	250.00
BW-600-7	**Drawing E-606**					
FUSE VFD CWP-5	CWP-5	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	200.00	200.00
FUSE CWP-5		BUSSMANN	LPJ, 600V Class J	1-600A	400.00	400.00
FUSE VFD CWP-6	CWP-6	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	200.00	200.00
FUSE CWP-6		BUSSMANN	LPJ, 600V Class J	1-600A	400.00	400.00
FUSE VFD CWP-7	CWP-7 (Future)	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	200.00	200.00
FUSE CWP-7		BUSSMANN	LPJ, 600V Class J	1-600A	400.00	400.00
FUSE VFD CWP-8	CWP-8 (Future)	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	200.00	200.00
FUSE CWP-8		BUSSMANN	LPJ, 600V Class J	1-600A	400.00	400.00
FUSE VFD CWP-9	CWP-9 (Future)	GOULD SHAWMUT	TRS, 600V Class RK5	15-600A	200.00	200.00
FUSE CWP-9		BUSSMANN	LPJ, 600V Class J	1-600A	400.00	400.00
MLC Panel	**Drawing E-607**					
MLC-2 MCB	MLC-2	SQUARE D	QO, 3-Pole	15-100A	60.00	60.00
LP Panels	**Drawing E-607**					
LP-2 MCB	LP-2	GE	SELA, Spectra RMS	15-150A	100.00	100.00

Protective Device	Load Device	Manufacturer	Type	Description	Frame	Trip
RP Panels	**Drawing E-607**					
RP-4 MCB	RP-4	GE	THQB	15-100A	100.00	70.00
RP-5 MCB	RP-5	GE	THQB	15-100A	50.00	50.00
RP-6 MCB	RP-6	GE	THQB	15-100A	100.00	80.00
RP-U MCB	RP-U	GE	THQB	15-100A	100.00	100.00
FUSE FDS RP-6	RP-6	GOULD SHAWMUT	TR, 250V Class RK5	15-600A	100.00	80.00

RELAY SETTINGS

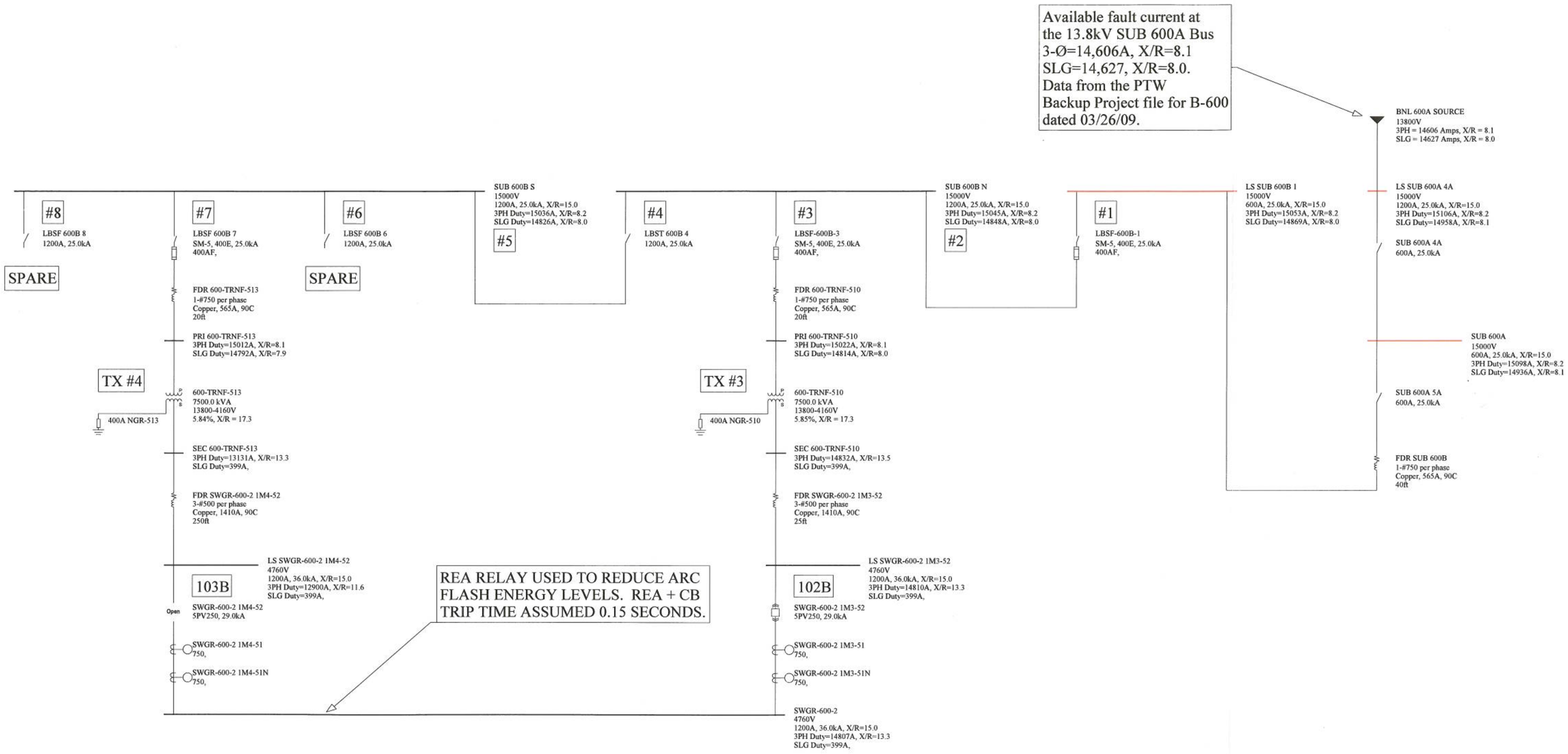
FACILITY:	BNL	MANUFACTURER:	GE	VOLTS:	4160 V	REV:	0
LOCATION:	CCWF II	EQUIPMENT:	SWITCHGEAR	AMPS:	1200 A	DATE:	09/21/10
TAG:	600-2	TYPE:	5-PV-250	SC-MVA	250 MVA	ENGR:	SMITH
EQUIPMENT:	MV SWITHGEAR						

BREAKER	TYPE / LOAD	CB FRAME	CTR	ANSI DEVICE		RELAY		TOC SETTINGS				INST SETTINGS		
				NO.	FUNCTION	MANUFACTURER	TYPE	PU	AMPS	CURVE	DIAL	PU	AMPS	DELAY
1M4-52	MAIN 600-TRNF-513 7500/8400KVA	1200	1200/5	51	PHASE TOC1	GE ML	750	1	1200	EI	1	2	2400	0.4
				51	PHASE TOC2			-	-	-	-	-	-	-
				51N	NEUTRAL			0.2	240	DT	2	-	-	-
1M3-52	MAIN 600-TRNF-510 7500/8400KVA	1200	1200/5	50/51	PHASE TOC1	GE ML	750	1	1200	EI	1	2	2400	0.4
				50/51	PHASE TOC2			-	-	-	-	-	-	-
				51N	NEUTRAL			0.2	240	DT	2	-	-	-
101B-52	FEEDER 600-TRNF-512 2500/3325KVA	1200	1200/5	50/51	PHASE TOC1	GE ML	750	0.5	600	EI	4	1.4	1680	0.2
				50/51	PHASE TOC2			0.5	600	EI	4	7	8400	-
				51N	NEUTRAL			0.1	120	DT	0.1	-	-	-
102B-52	FEEDER 600-TRNF-511 2500/3325KVA	1200	1200/5	50/51	PHASE TOC1	GE ML	750	0.5	600	EI	4	1.4	1680	0.2
				50/51	PHASE TOC2			0.5	600	EI	4	7	8400	-
				51N	NEUTRAL			0.1	120	DT	0.1	-	-	-

CIRCUIT BREAKER SETTINGS

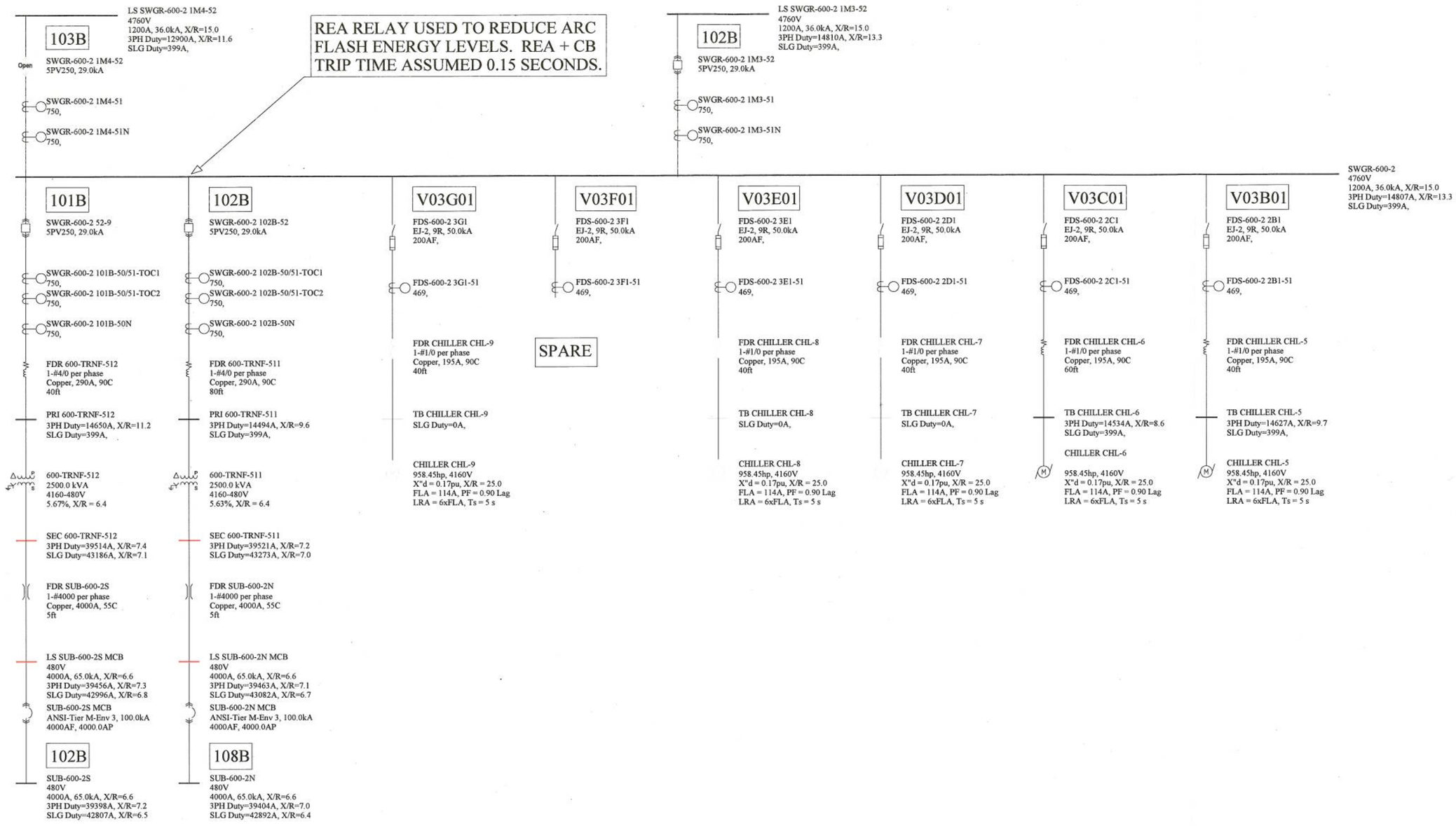
NAME:	BNL	SUBSTATION XFMR:	2500 / 3325	KVA	ENGINEER:	DATE:	09/21/10
LOCATION:	CCWF II	SYSTEM VOLTAGE:	480	V		REV:	0
TAG NUMBER:	SUB-600-2	MAIN BUS AMP RATING:	4000	A	ENGINEER:		SMITH
EQUIPMENT:	LV SWITCHGEAR	VOLTAGE RATING:	480	V	DATE:		9/21/2010
MANUFACTURER:	GENERAL ELECTRIC	INTEGRATED EQ RATING:	65,000	AIC	REVISION:		0
TYPE:	WAVEPRO						
TRIP UNIT:	ENTELLIGUARD						

BREAKER						LONG TIME			SHORT TIME				INST		GROUND			
LOCATION	LOAD	TYPE	FRAME	SENSOR	PLUG	LTPU	AMPS	LTD	STPU	AMPS	DELAY	I^2T	PU	AMPS	PU	AMPS	DELAY	I^2T
102B	MAIN	WPS-40	4000	4000	4000	1.0	4000	C-3	3.5X	14000	ST07-MIN	OUT	15X	60000	0.26	1040	GFD06	OUT
103B	BW-600-6	WPH-16	1600	1600	1000	1.0	1000	C-2	4.5X	4500	ST01-MIN	OUT	5X	5000	0.2	200	GFD01	OUT
103D	DP-2	WPH-16	1600	800	400	1.0	400	C-3	4.5X	1800	ST02-MIN	OUT	OFF	-	0.2	80	GFD01	OUT
104B	BW-600-7	WPH-16	1600	1600	1000	1.0	1000	C-2	5X	5000	ST01-MIN	OUT	6X	6000	0.2	200	GFD01	OUT
104C	MCC-600-4	WPH-16	1600	1600	800	1.0	800	C-2	5X	4000	ST01-MIN	OUT	13X	10400	0.2	160	GFD01	OUT
105B	TIE	WPX-40	4000	4000	4000	0.8	3200	C-3	3.5X	11200	ST05-MIN	OUT	15X	60000	0.2	800	GFD04	OUT
106B	BW-600-5	WPH-16	1600	1600	1000	1.0	1000	C-6	9X	9000	ST01-MIN	OUT	10X	10000	0.2	200	GFD01	OUT
106C	MCC-600-3	WPH-16	1600	1600	800	1.0	800	C-2	4.5X	3600	ST01-MIN	OUT	5X	4000	0.2	160	GFD01	OUT
107B	BW-600-4	WPH-16	1600	1600	1000	1.0	1000	C-6	9X	9000	ST01-MIN	OUT	10X	10000	0.2	200	GFD01	OUT
107D	MCC-600A-2	WPH-16	1600	1600	800	1.0	800	C-2	4X	3200	ST01-MIN	OUT	4.5X	3600	0.2	160	GFD01	OUT
108B	MAIN	WPX-40	4000	4000	4000	1.0	4000	C-3	3.5X	14000	ST07-MIN	OUT	15X	60000	0.26	1040	GFD06	OUT



Central Chilled Water Facility Phase II
Short Circuit Results - Base Project
E-601 SHEET 1 OF 2

Date: 10/07/10 Revision 2

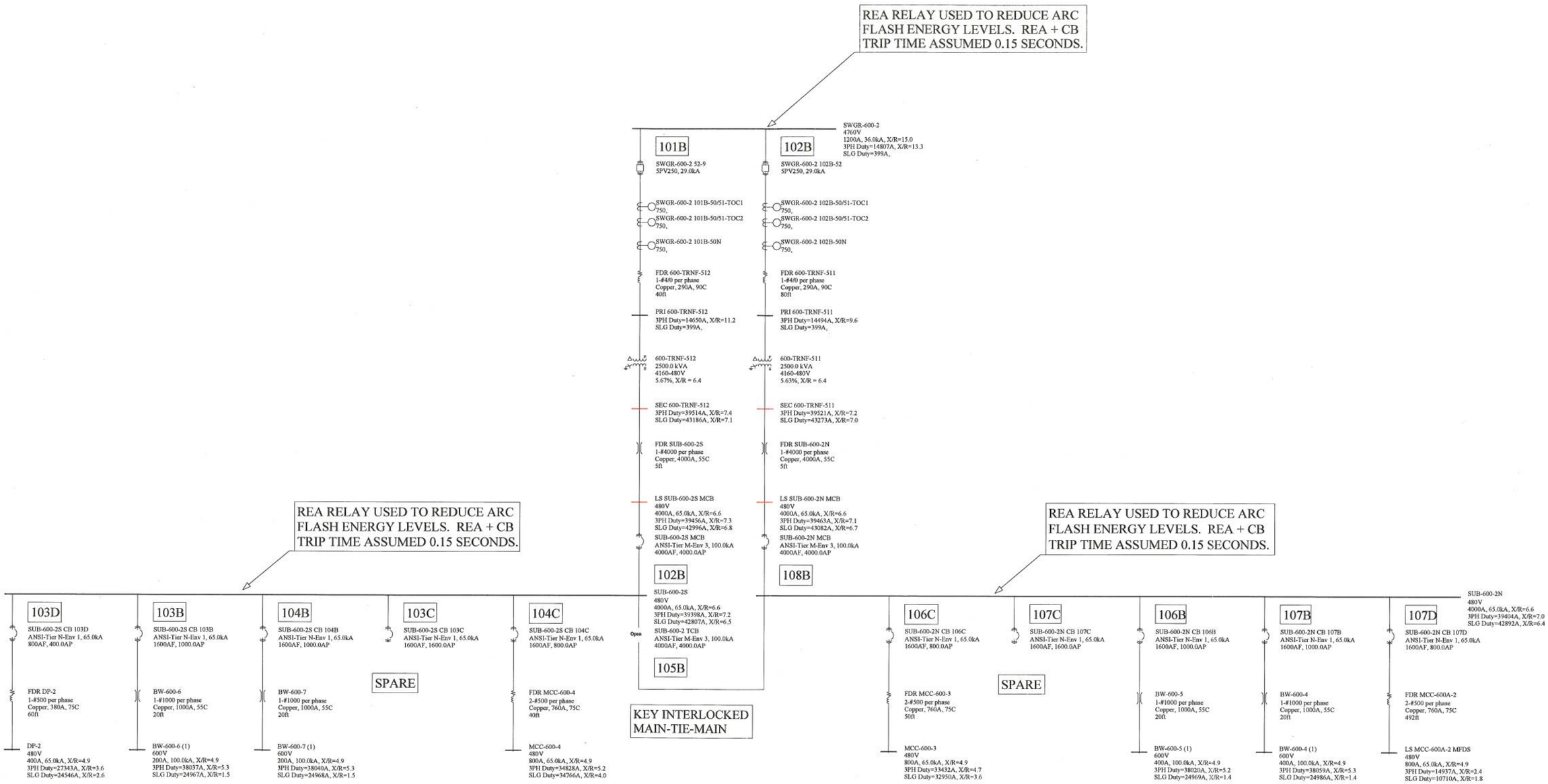


REA RELAY USED TO REDUCE ARC FLASH ENERGY LEVELS. REA + CB TRIP TIME ASSUMED 0.15 SECONDS.

Central Chilled Water Facility Phase II
Short Circuit Results - Base Project
E-601 SHEET 2 OF 2

Date: 10/07/10

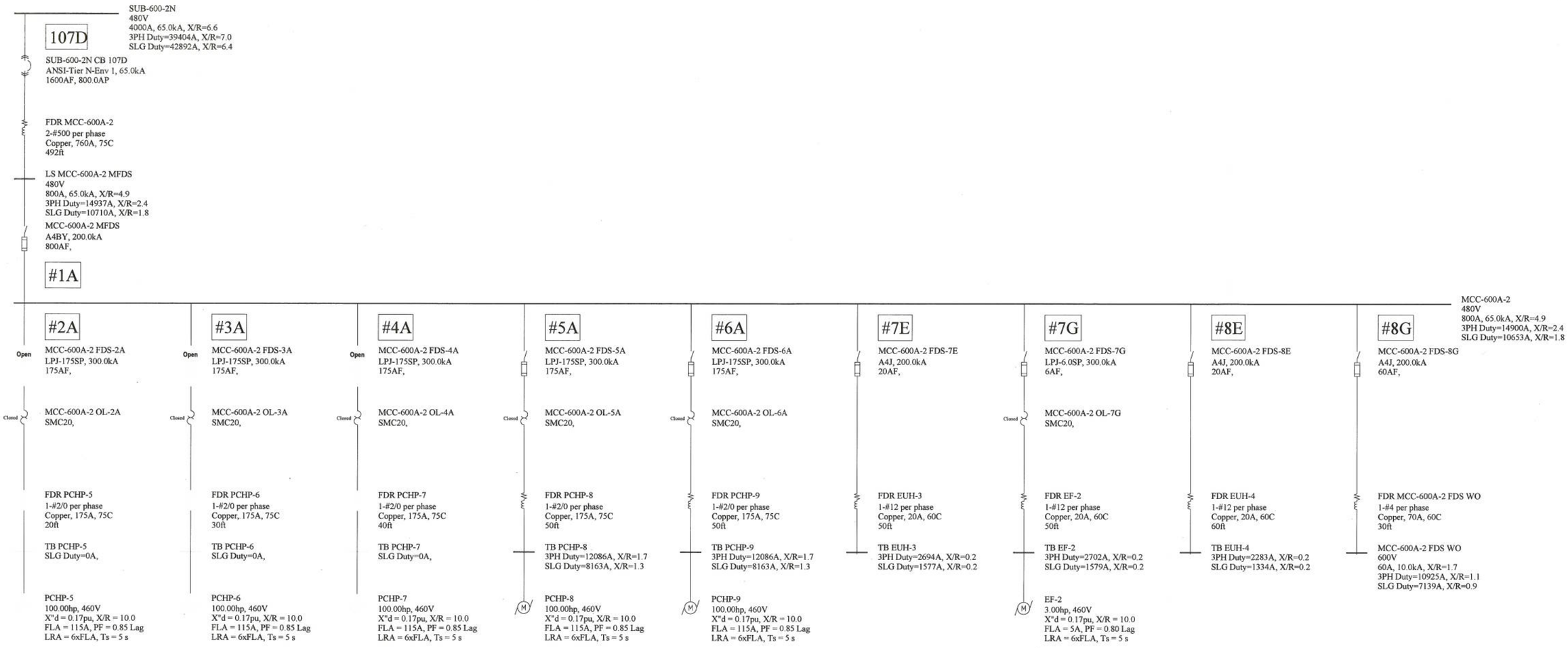
Revision 2



Central Chilled Water Facility Phase II
Short Circuit Results - Base Project
E-602

Date: 10/07/10

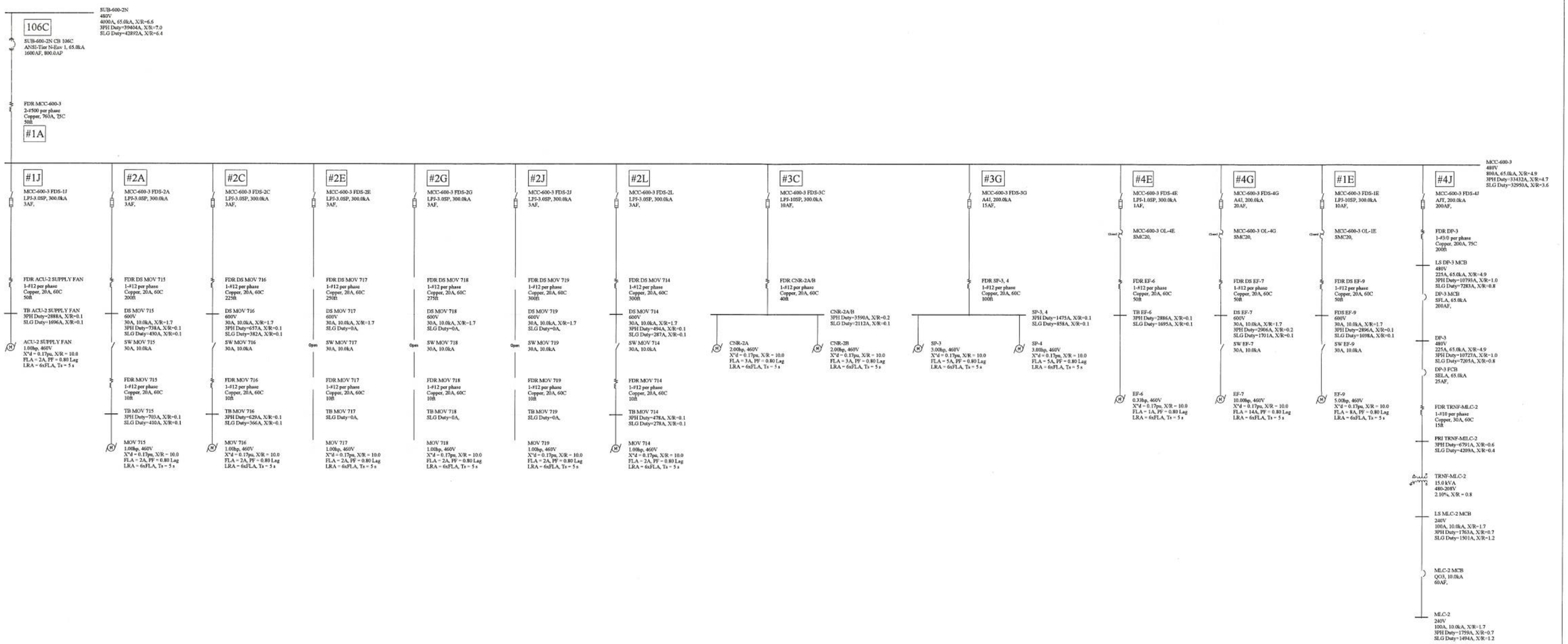
Revision 2



Central Chilled Water Facility Phase II
Short Circuit Results - Base Project
E-603

Date: 10/07/10

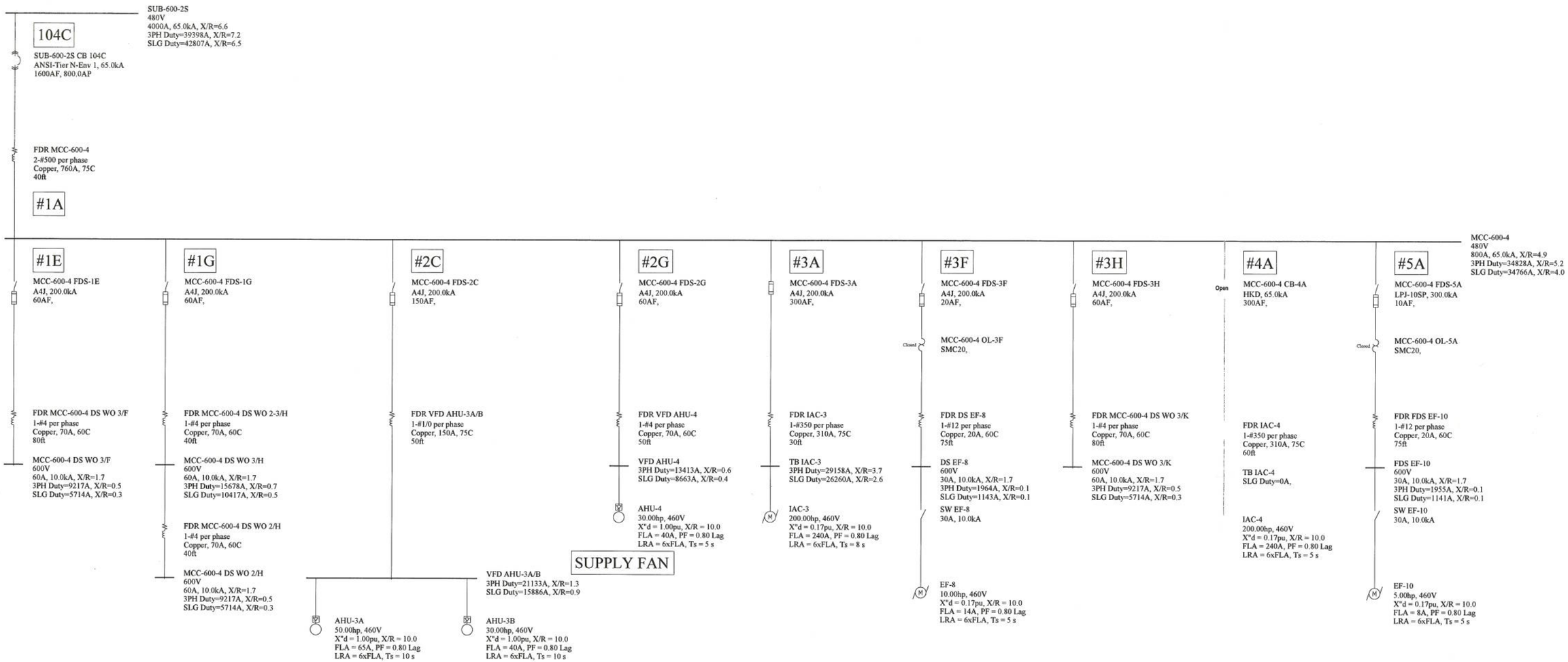
Revision 2



Central Chilled Water Facility Phase II
Short Circuit Results - Base Project
E-604

Date: 10/07/10

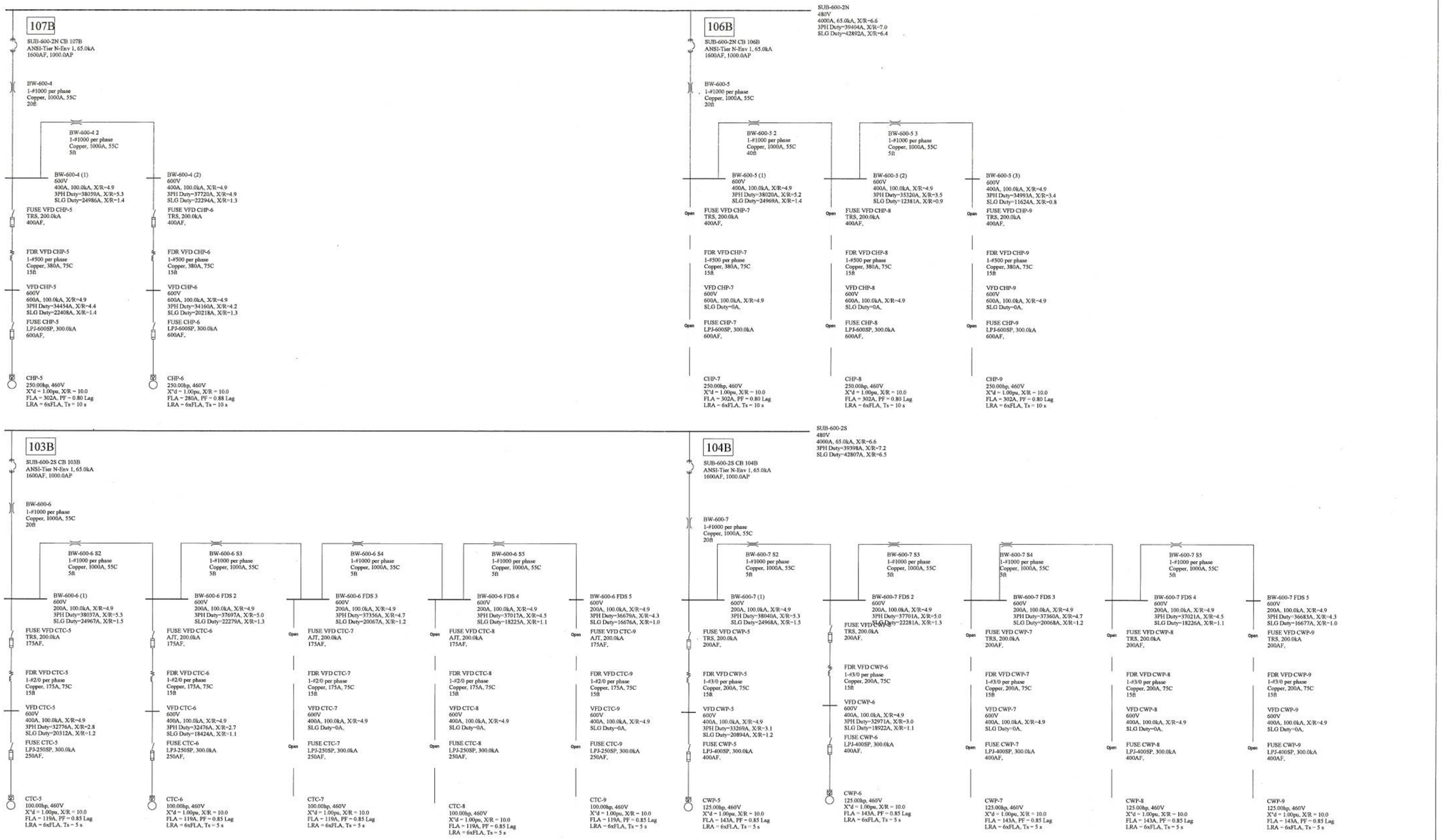
Revision 2



Central Chilled Water Facility Phase II
Short Circuit Results - Base Project
E-605

Date: 10/07/10

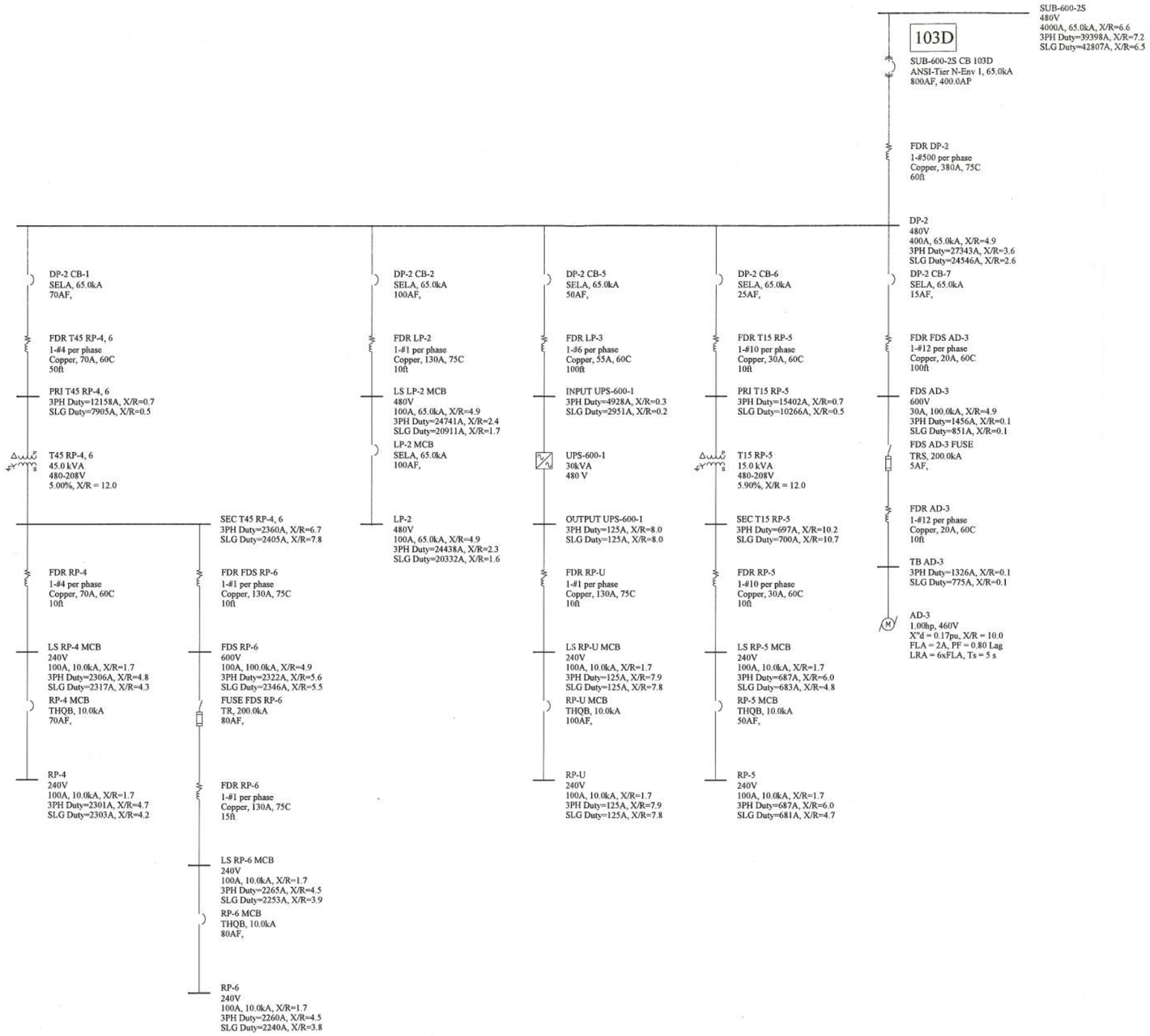
Revision 2



Central Chilled Water Facility Phase II
Short Circuit Results - Base Project
E-606

Date: 10/07/10

Revision 2



Central Chilled Water Facility Phase II
Short Circuit Results - Base Project
E-607

Date: 10/07/10

Revision 2