OHIO BUILDING AUTHORITY

ARC FLASH HAZARD ANALYSIS

AT THE

THE VERN RIFFE GOVERNMENT OFFICE BUILDING
77 SOUTH HIGH ST
COLUMBUS, OHIO 43215

PREPARED BY

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OSBORN PROJECT 13660 **FEBRUARY 26, 2009**

OBA Riffe Building -
Arc Flash Hazard Analysis Findings Report

The Osborn Engineering Company was engaged to conduct an ARC flash hazard analysis of the OBA Riffe Building in Columbus, Ohio. The Riffe building was completed and occupied in 1988. The building has 32 stories and contains 1.1 million square feet of space. This study consisted of two primary parts. Part one was to review the available single line drawings. The second part consisted of a number of field visits to the Riffe Building to confirm the information on the existing single line drawings and to gather the additional information needed to complete the study. No effort was made to determine the buildings electrical suitability for its use or for compliance to any local state or national code or standard.

The Riffe building's maintenance team, led by Jones Lang LaSalle, has done an excellent job maintaining the electrical rooms and equipment. The electrical rooms were exceptionally clean and well-kept. The electrical equipment has been maintained and tested regularly. The maintenance team currently has a contract with High Voltage Maintenance to maintain, and calibrate, all the medium-voltage and switchgear equipment. Russ Electric has been contracted to maintain all the emergency power equipment including the generator, emergency power switchgear, and transfer switches. The Riffe building's maintenance team has developed "lock-out" placards for all the electrical equipment in the building. In summary, Jones Lang LaSalle has done an exceptional job implementing an effective overall maintenance program.

The Riffe building has a Main Primary Switchgear located level B2. The Switchgear has two (2) incoming 14.4 kV primary utility feeders. One utility feeder is connected to Main CB1 and the other utility feeder is connected to Main CB2. Main CB1 is used to normally supply power to Primary Cable 'P1' Circuit Breaker and Primary Cable 'P2' Circuit Breaker. Main CB2 is used to normally supply power to Primary Cable 'P3' Circuit Breaker and Primary Cable 'P4' Circuit Breaker. The Main Primary Switchgear also has a Primary 'Tie' Circuit Breaker, it may be closed if either of the Utility Primary Feeders were to fail. The available short circuit current for Main Primary Switchgear represents an extreme hazard. Any electrical work to be done to the switchgear should not be performed unless the incoming feed is disconnected, discharged, and put into an electrical safe configuration.

The Medium-Voltage Primary Cables 'P1', 'P2', 'P3', & 'P4' feed several sub-stations located in electrical rooms throughout the building. The electrical rooms are located on level B2, level 4, level 6, and level T26. Primary Cable 'P1' normally feeds SUB 6A (left side) and SUB T26A (left side). Primary Cable 'P2' normally feeds SUB 6A (right side) and SUB T26A (right side). Primary Cable 'P3' normally feeds SUB B2C and SUB 4A. Primary Cable 'P4' normally feeds SUB B2B and SUB 6B.

A sub-station consists of two, or more, Primary Switches, Primary Fusing, a Transformer, and a Low-Voltage Switchgear assembly used to distribute power throughout the building. The following sub-stations are used to transform the voltage from 14.4kV to 480V for distribution: SUB B2B, SUB 4A, SUB 6A (left side), SUB 6A (right side), SUB 6B, SUB T26A (left side),

and SUB T26A (right side). SUB B2C is used to transform the voltage from 14.4kV to 4160V. The switchgear portion of SUB B2C is a line-up of Medium Voltage Fused Switches used to feed Medium Voltage Starters for the building's chillers. The arc flash hazard for the primary sub-stations, listed above, represents an extreme hazard. Any electrical work to be done to these sub-stations should not be performed unless the incoming feed is disconnected, discharged, and put into an electrically safe configuration.

The Riffe building's emergency power is supplied by three (3) 1500kW diesel generators located in the generator room. The generators feed into a synchronizing / paralleling switchgear and is used to feed transfer switch ATS-1 and switchgear EDP-6M. EDP-6M feeds emergency power to the transfer switches ATS-2, ATS-3, ATS-4, ATS-5, and ATS-6. The arc flash hazard for the generators and emergency power electrical devices represent an extreme hazard. Any electrical work to be done to these emergency power devices should not be performed unless the incoming feed(s) are disconnected and put into an electrically safe configuration.

The main electrical rooms enclose all the low-voltage switchgear and a majority of the low-voltage switchboards, low-voltage transformers, and low-voltage panelboards. The remaining low-voltage electrical equipment is located in small electrical closets, mechanical equipment rooms, elevator machine rooms, storage areas, etc. Low-voltage buss-duct is used to distribute emergency and normal power throughout the Riffe building tower. The buss-duct goes thru two (2) electrical closets located on each floor of the tower. The electrical closets house the low-voltage buss-duct switches, low-voltage panelboards, and low-voltage transformers. The Arc flash hazard levels for the buss duct switches / buss ducts range from level #0 to level #3 personal protective equipment rating. Appropriate PPE is required when adding or removing a buss duct switches. The Arc flash hazard levels for the low-voltage electrical equipment range from a level #0 to level #2 personal protective equipment rating. The Arc flash hazard for each electrical device is shown in the attached spreadsheet.

Osborn has no recommendations to reduce the arc flash levels at the Riffe building. The medium-voltage equipment should always be de-energized, discharged, and put into an electrically safe configuration and only serviced by a qualified person. The low-voltage switchgear circuit breakers have appropriate trip settings for the usage of the Riffe building. The fuses used throughout the Riffe building are current limiting type and do not need to be upgraded. Therefore, the arc flash levels are currently at the minimum levels for the Riffe building and do not require additional work.

The Arc flash hazard data is shown in the attached spreadsheet. The spreadsheet shows the Arc Fault Bus Name, Arc Fault Bus Voltage, Upstream Trip Device Name, Equipment Type, Bolted Fault (kA), Estimated Arc Flash Boundary (inches), Working Distance (inches), Incident Energy (cal/cm2), and Required Clothing Class. The Arc Fault Bus Name is the name of the electrical equipment. The Upstream Trip Device Name feeds the electrical equipment. The

Bolted Fault (kA) is the available short-circuit current available at the electrical equipment. The Arc Fault Bus Voltage is either 480V or 208V. The Estimated Arc Flash Boundary (inches) is the distance from the exposed copper that the arc flash may reach. The Working Distance (inches) is 18 inches. The Incident Energy (cal/cm2) is the potential energy of an arc flash. The Required Clothing Class depicts the required clothing for a particular hazard rating.

Refer to the NFPA 70E for a complete explanation of Arc Flash terms, definitions, and personal protective clothing requirements. The NFPA 70E Table 130.7(C)(10) Protective Clothing and Personal Protective Equipment (PPE) Matrix has been included in this Arc Flash study for reference. The Table defines the personal protective equipment requirements for each level of arc flash hazard, category 0 thru 4.

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
1	AHU1 RF VFD	0.48	EDP6B FS RF-1	VFD	11.48	5.3	18	0.3	#0
2	AHU1 SF VFD	0.48	EDP6A FS AHU1	VFD	18.70	7.4	18	0.4	#0
3	AHU2 RF VFD	0.48	EDP6B FS RF-2	VFD	12.27	5.6	18	0.3	#0
4	AHU2 SF VFD	0.48	EDP6B FS AHU-2	VFD	19.02	7.4	18	0.4	#0
5	AHU3 RF VFD	0.48	EDP6B FS RF-3	VFD	14.23	6.2	18	0.3	#0
6	AHU3 SF VFD	0.48	EDP6B FS AHU-3	VFD	21.14	7.5	18	0.4	#0
7	AHU4 RF VFD	0.48	EDP6A FS RF4	VFD	6.84	3.8	18	0.1	#0
8	AHU4 SF VFD	0.48	EDP6A FS AHU4	VFD	21.36	7.5	18	0.4	#0
9	AHU5 RF VFD	0.48	EDP6A FS RF5	VFD	6.84	3.8	18	0.1	#0
10	AHU5 SF VFD	0.48	EDP6B FS AHU5	VFD	21.36	7.5	18	0.4	#0
11	AHU6 RF A STR	0.48	MCC5A FS RF6A/B	Other	6.47	3.6	18	0.1	#0
12	AHU6 RF B STR	0.48	MCC5A FS RF6A/B	Other	6.47	3.6	18	0.1	#0
13	AHU6 RF VFD	0.48	MCC5A FS RF6A/B	VFD	6.81	3.8	18	0.1	#0
14	AHU6 SF A STR	0.48	MCC6A FS AHU-6	Other	16.81	7.6	18	0.4	#0
15	AHU6 SF B STR	0.48	MCC6A FS AHU-6	Other	16.81	7.6	18	0.4	#0
16	AHU6 SF VFD	0.48	MCC6A FS AHU-6	VFD	17.41	7.8	18	0.4	#0
17	AHU7 RF STR	0.48	DP-B2B CB AHU7RF	Other	1.51	1.9	18	0.1	#0
18	AHU7 RF VFD	0.48	DP-B2B CB AHU7RF	VFD	1.67	2.1	18	0.1	#0
19	AHU7 SF STR	0.48	DP-B2B CB AHU7SF	Other	5.77	4.7	18	0.2	#0
20	AHU7 SF VFD	0.48	DP-B2B CB AHU7SF	VFD	6.36	5	18	0.2	#0
21	AHU8 RF VFD	0.48	MCC5A FS AHU8	VFD	15.99	6.7	18	0.3	#0
22	AHU8 SF VFD	0.48	MCC5A FS AHU8	VFD	15.99	6.7	18	0.3	#0
23	AHU9 RF VFD	0.48	MCC5A FS AHU9	VFD	17.59	7.1	18	0.4	#0
24	AHU9 SF VFD	0.48	MCC5A FS AHU9	VFD	17.59	7.1	18	0.4	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
25	AHU10 RF STR	0.48	MCC4A FS AHU10RF	Other	12.51	5.7	18	0.3	#0
26	AHU10 RF VFD	0.48	MCC4A FS AHU10RF	VFD	13.57	6	18	0.3	#0
27	AHU10 SF STR	0.48	EMCC4A FS AHU-10	Other	9.41	4.7	18	0.2	#0
28	AHU10 SF VFD	0.48	EMCC4A FS AHU-10	VFD	9.63	4.7	18	0.2	#0
29	AHU11 RF STR	0.48	FSWMCC5A RF11	Other	4.26	2.7	18	0.1	#0
30	AHU11 RF VFD	0.48	FSWMCC5A RF11	VFD	4.57	2.9	18	0.1	#0
31	AHU11 SF STR	0.48	FSWMCC5AAHU115N	Other	11.25	5.3	18	0.2	#0
32	AHU11 SF VFD	0.48	FSWMCC5AAHU115N	VFD	11.79	5.4	18	0.3	#0
33	AHU12 RF VFD	0.48	MCCT26A FS RF12	VFD	4.26	2.7	18	0.1	#0
34	AHU12 SF VFD	0.48	MCCT26A-FS-AHU12	VFD	15.73	6.6	18	0.3	#0
35	AHU13 RF STR	0.48	EMCCB2A FS RF13	Other	7.22	3.9	18	0.2	#0
36	AHU13 RF VFD	0.48	EMCCB2A FS RF13	VFD	8.16	4.2	18	0.2	#0
37	AHU13 SF STR	0.48	EMCCB2A FS AHU13	Other	21.72	7.6	18	0.4	#0
38	AHU13 SF VFD	0.48	EMCCB2A FS AHU13	VFD	22.81	7.7	18	0.4	#0
39	AHU14 DISC	0.48	MCCT26A FS AHU14	Other	2.15	1.7	18	0	#0
40	AHU15 RF DISC	0.48	EMCCB2A FS AHU15	Other	2.28	1.8	18	0.1	#0
41	AHU15 SF DISC	0.48	EMCCB2A FS AHU15	Other	2.28	1.8	18	0.1	#0
42	AHU16 DISC	0.48	EMCCB2A FS AHU16	Other	5.47	3.2	18	0.1	#0
43	AHU17 DISC	0.48	MCC6A FS AHU-17	Other	3.69	2.5	18	0.1	#0
44	AHU18 RF DISC	0.48	FSWMCCT26A RAF18	Other	2.51	1.9	18	0.1	#0
45	AHU18 SF DISC	0.48	MCCT26A FS AHU18	Other	5.89	3.4	18	0.1	#0
46	ATS-1	0.48	SUB4A CB ATS-1	ATS	37.32	39.2	18	4.7	#2
47	ATS-2	0.48	SUB6AP1 CB ATS-2	ATS	38.94	43	18	5.4	#2
48	ATS-3	0.48	SUB6AP2 CB ATS-3	ATS	37.02	40.9	18	5	#2

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
49	ATS-4	0.48	T26AP2-CB EDP15	ATS	40.10	44.6	18	5.7	#2
50	ATS-5	0.48	T26AP1-CB ATS-5	ATS	108.25	107.3	18	20.8	#3
51	ATS-6	0.48	P1 RELAY 2	ATS	1.24	111.4	18	17.6	#3
52	BLR-1 DISC	0.48	EMCCT26A-FS-BLR1	Other	2.51	1.9	18	0.1	#0
53	BLR-2 DISC	0.48	EMCCT26A-FS-BLR2	Other	2.51	1.9	18	0.1	#0
54	BLR-3 DISC	0.48	EMCCT26A-FS-BLR3	Other	2.51	1.9	18	0.1	#0
55	BLR-4 DISC	0.48	EMCCT26A-FS-BLR4	Other	2.51	1.9	18	0.1	#0
56	BUS-C FS AC1	0.48	SUB6AP1 CB ATS-6	Other	22.02	67.6	18	8.4	#3
57	BUS-C FS AC2	0.48	SUB6AP1 CB ATS-6	Other	22.02	67.6	18	8.4	#3
58	BUS-C FS ELT10A	0.48	SUB6AP1 CB ATS-6	Other	25.11	72.1	18	9.3	#3
59	BUS-C FS ELT13A	0.48	SUB6AP1 CB ATS-6	Other	23.77	69.8	18	8.8	#3
60	BUS-C FS ELT16A	0.48	SUB6AP1 CB ATS-6	Other	22.54	68.1	18	8.5	#3
61	BUS-C FS ELT19A	0.48	SUB6AP1 CB ATS-6	Other	21.41	67	18	8.3	#3
62	BUS-C FS ELT1A	0.48	SUB6AP1 CB ATS-6	Other	29.81	83.7	18	11.6	#3
63	BUS-C FS ELT4A	0.48	SUB6AP1 CB ATS-6	Other	28.13	78.9	18	10.6	#3
64	BUS-C FS ELT7A	0.48	SUB6AP1 CB ATS-6	Other	26.56	75.1	18	9.8	#3
65	BUS-C FS ELT22A	0.48	SUB6AP1 CB ATS-6	Other	20.37	66.3	18	8.2	#3
66	BUS-C FS ELT25A	0.48	SUB6AP1 CB ATS-6	Other	19.41	65.9	18	8.1	#3
67	BUS-C FS EM4-BUS	0.48	SUB6AP1 CB ATS-6	Other	30.20	84.8	18	11.8	#3
68	BUS-C FS UPS	0.48	SUB6AP1 CB ATS-6	Other	22.02	67.6	18	8.4	#3
69	BUS-D FS LT1A	0.48	SUB6AP2 CB BUS-D	Other	32.16	36.2	18	4.2	#2
70	BUS-D FS LT3A	0.48	SUB6AP2 CB BUS-D	Other	31.32	36.1	18	4.2	#2
71	BUS-D FS LT5A	0.48	SUB6AP2 CB BUS-D	Other	30.50	36.7	18	4.3	#2
72	BUS-D FS LT7A	0.48	SUB6AP2 CB BUS-D	Other	29.71	83.4	18	11.5	#3

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
73	BUS-D FS LT9A	0.48	SUB6AP2 CB BUS-D	Other	28.93	81.1	18	11	#3
74	BUS-D FS LT11A	0.48	SUB6AP2 CB BUS-D	Other	28.18	79.1	18	10.6	#3
75	BUS-D FS RT2A	0.48	SUB6AP2 CB BUS-D	Other	31.74	36.1	18	4.2	#2
76	BUS-D FS RT4A	0.48	SUB6AP2 CB BUS-D	Other	30.91	36.3	18	4.2	#2
77	BUS-D FS RT6A	0.48	SUB6AP2 CB BUS-D	Other	30.10	37.8	18	4.5	#2
78	BUS-D FS RT8A	0.48	SUB6AP2 CB BUS-D	Other	29.32	82.2	18	11.3	#3
79	BUS-D FS RT10A	0.48	SUB6AP2 CB BUS-D	Other	28.55	80.1	18	10.8	#3
80	BUS-E FS LT2A	0.48	SUB6AP1 CB BUS-E	Other	34.10	98.5	18	14.7	#3
81	BUS-E FS LT4A	0.48	SUB6AP1 CB BUS-E	Other	33.12	94.8	18	13.9	#3
82	BUS-E FS LT6A	0.48	SUB6AP1 CB BUS-E	Other	32.17	91.4	18	13.2	#3
83	BUS-E FS LT8A	0.48	SUB6AP1 CB BUS-E	Other	31.25	88.2	18	12.5	#3
84	BUS-E FS LT10A	0.48	SUB6AP1 CB BUS-E	Other	30.36	85.4	18	11.9	#3
85	BUS-E FS RT11B	0.48	SUB6AP1 CB BUS-E	Other	29.93	84	18	11.6	#3
86	BUS-E FS RT1B	0.48	SUB6AP1 CB BUS-E	Other	35.02	102.1	18	15.5	#3
87	BUS-E FS RT3B	0.48	SUB6AP1 CB BUS-E	Other	33.61	96.6	18	14.3	#3
88	BUS-E FS RT5B	0.48	SUB6AP1 CB BUS-E	Other	32.64	93	18	13.5	#3
89	BUS-E FS RT7B	0.48	SUB6AP1 CB BUS-E	Other	31.71	89.8	18	12.8	#3
90	BUS-E FS RT9B	0.48	SUB6AP1 CB BUS-E	Other	30.80	86.8	18	12.2	#3
91	BUS-EM4 FS EL1A	0.48	BUSC FS EM4-BUS	Other	23.91	8.7	18	0.5	#0
92	BUS-EM4 FS EL4A	0.48	BUSC FS EM4-BUS	Other	26.07	9.2	18	0.6	#0
93	BUS-EM4 FS ELB2A	0.48	BUSC FS EM4-BUS	Other	23.25	8.5	18	0.5	#0
94	BUS-EM4 FS ER2B	0.48	BUSC FS EM4-BUS	Other	24.60	8.8	18	0.5	#0
95	BUS-EM4 FS ER3A	0.48	BUSC FS EM4-BUS	Other	25.32	9	18	0.5	#0
96	BUS-EM4 FS ER5B	0.48	BUSC FS EM4-BUS	Other	26.84	9.4	18	0.6	#0

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97	BUS-F FS LT12A	0.48	T26AP1-CB BUS-F	Other	59.38	69.7	18	11	#3
98	BUS-F FS LT15A	0.48	T26AP1-CB BUS-F	Other	65.79	74.7	18	12.2	#3
99	BUS-F FS LT16A	0.48	T26AP1-CB BUS-F	Other	68.19	76.5	18	12.7	#3
100	BUS-F FS LT18A	0.48	T26AP1-CB BUS-F	Other	73.45	80.5	18	13.6	#3
101	BUS-F FS LT20A	0.48	T26AP1-CB BUS-F	Other	79.38	84.8	18	14.7	#3
102	BUS-F FS LT22A	0.48	T26AP1-CB BUS-F	Other	84.87	88.8	18	15.8	#3
103	BUS-F FS LT24A	0.48	T26AP1-CB BUS-F	Other	92.13	93.8	18	17.1	#3
104	BUS-F FS RT13B	0.48	T26AP1-CB BUS-F	Other	61.39	71.3	18	11.4	#3
105	BUS-F FS RT14B	0.48	T26AP1-CB BUS-F	Other	63.53	72.9	18	11.8	#3
106	BUS-F FS RT17B	0.48	T26AP1-CB BUS-F	Other	70.74	78.4	18	13.1	#3
107	BUS-F FS RT19B	0.48	T26AP1-CB BUS-F	Other	76.33	82.6	18	14.2	#3
108	BUS-F FS RT21B	0.48	T26AP1-CB BUS-F	Other	80.43	85.6	18	14.9	#3
109	BUS-F FS RT21F	0.48	T26AP1-CB BUS-F	Other	80.43	85.6	18	14.9	#3
110	BUS-F FS RT23B	0.48	T26AP1-CB BUS-F	Other	88.41	91.3	18	16.4	#3
111	BUS-G FS LT13A	0.48	T26AP2-CB BUS-G	Other	63.63	73	18	11.8	#3
112	BUS-G FS LT14A	0.48	T26AP2-CB BUS-G	Other	65.90	74.8	18	12.2	#3
113	BUS-G FS LT17A	0.48	T26AP2-CB BUS-G	Other	73.56	80.5	18	13.7	#3
114	BUS-G FS LT19A	0.48	T26AP2-CB BUS-G	Other	79.47	84.9	18	14.8	#3
115	BUS-G FS LT21A	0.48	T26AP2-CB BUS-G	Other	83.81	88	18	15.6	#3
116	BUS-G FS LT23A	0.48	T26AP2-CB BUS-G	Other	92.17	93.9	18	17.1	#3
117	BUS-G FS RT12A	0.48	T26AP2-CB BUS-G	Other	61.50	71.3	18	11.4	#3
118	BUS-G FS RT15A	0.48	T26AP2-CB BUS-G	Other	68.30	76.6	18	12.7	#3
119	BUS-G FS RT16A	0.48	T26AP2-CB BUS-G	Other	70.85	78.5	18	13.2	#3
120	BUS-G FS RT18A	0.48	T26AP2-CB BUS-G	Other	76.43	82.7	18	14.2	#3

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121	BUS-G FS RT20A	0.48	T26AP2-CB BUS-G	Other	82.69	87.2	18	15.4	#3
122	BUS-G FS RT21G	0.48	T26AP2-CB BUS-G	Other	83.81	88	18	15.6	#3
123	BUS-G FS RT22A	0.48	T26AP2-CB BUS-G	Other	88.47	91.3	18	16.4	#3
124	BUS-G FS RT24A	0.48	T26AP2-CB BUS-G	Other	96.04	96.5	18	17.8	#3
125	BUS-K FS DP1A	0.48	SUBB2B CB BUS-K	Other	36.02	43.9	18	5.6	#2
126	BUS-K FS DP4A	0.48	SUBB2B CB BUS-K	Other	33.84	97.5	18	14.5	#3
127	BUS-K FS L1A	0.48	SUBB2B CB BUS-K	Other	36.02	43.9	18	5.6	#2
128	BUS-K FS L2A	0.48	SUBB2B CB BUS-K	Other	35.74	44	18	5.6	#2
129	BUS-K FS L3A	0.48	SUBB2B CB BUS-K	Other	34.91	45.4	18	5.9	#2
130	BUS-K FS L4A	0.48	SUBB2B CB BUS-K	Other	33.84	97.5	18	14.5	#3
131	BUS-K FS L5A	0.48	SUBB2B CB BUS-K	Other	33.58	96.5	18	14.3	#3
132	C-1 CONTACTOR	0.48	EDP6B FS EMCCB2A	Other	30.92	10.1	18	0.6	#0
133	C-2 CONTACTOR	0.48	EDP4A FS EDP-4A	Other	13.90	6.3	18	0.3	#0
134	C-3 CONTACTOR	0.48	DP4C FS MCC4A	Other	34.80	11.8	18	0.8	#0
135	C-4 CONTACTOR	0.48	DP-B2C FS LB2B	Other	24.67	8.8	18	0.5	#0
136	C-5 CONTACTOR	0.48	DPB2C FS LB1B	Other	24.29	8.7	18	0.5	#0
137	C-6 CONTACTOR	0.48	DPT26A FS LT26B	Other	69.64	26	18	2.6	#1
138	CHILLER 1 AQUA	0.48	DP-B2A FS DP-B2B	Other	11.26	5.3	18	0.2	#0
139	CHILLER 2 AQUA	0.48	DP-B2A FS DP-B2B	Other	11.26	5.3	18	0.2	#0
140	CHILLER 3 AQUA	0.48	DP-B2A FS DP-B2B	Other	11.26	5.3	18	0.2	#0
141	CHILLER-1 STR	4.16	SUB-B2C FS CH-1	Other	6.98	22.2	18	2.3	#1
142	CHILLER-2 STR	4.16	SUB-B2C FS CH-2	Other	6.96	22.2	18	2.3	#1
143	CHILLER-3 STR	4.16	SUB-B2C FS CH-3	Other	7.25	19.1	18	1.7	#1
144	CT-1 FS	0.48	EMCC4A FS CT1	Other	9.79	4.9	18	0.2	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
145	CT-2 FS	0.48	EMCC4A FS CT2	Other	9.79	4.9	18	0.2	#0
146	CT-3 DISC	0.48	MCC4A FS CT-3	Other	19.12	7.4	18	0.4	#0
147	CT-4 DISC	0.48	MCC4A FS CT-4	Other	19.12	7.4	18	0.4	#0
148	CU-1 DISC	0.48	MCCT26-FS-CU1	Other	6.22	3.5	18	0.1	#0
149	DIM13 FS	0.208	FSW BUSF RT13B	Other	4.92	7.4	18	0.4	#0
150	DISC 1 RM 485	0.208	DPB21 FS R2B-3D	Other	3.31	4.7	18	0.2	#0
151	DISC 2 RM 485	0.208	DPB21 FS R2B-3D	Other	3.31	4.7	18	0.2	#0
152	DOOR CNTRL FS	0.48	DP-B2A FS ELEV17	Other	13.02	5.9	18	0.3	#0
153	DP T26A	0.48	T26AP2-CB-DPT26A	Switchboard	95.45	96.5	18	17.8	#3
154	DP-4C	0.48	SUB4A CB DP-4C	Switchboard	39.75	42.9	18	5.4	#2
155	DP-4D	0.48	SUB4A CB DP-4D	Switchboard	40.76	44.5	18	5.7	#2
156	DP-5A	0.208	BKR SUB6B DP5A	Switchboard	116.55	85.3	18	14.9	#3
157	DP-41	0.208	DP-41 FS	Switchboard	75.30	27.5	18	2.8	#1
158	DP-61	0.208	DP-61 FS	Switchboard	18.76	7.4	18	0.4	#0
159	DP-B21	0.208	DP-B2D FS DP-B21	Switchboard	6.43	20.5	18	1.8	#1
160	DP-B22	0.208	FSW MAIN DPB22	Switchboard	17.69	527.7	18	174.4	Extreme Danger
161	DP-B2A	0.48	SUBB2B CB DP-B2A	Switchboard	51.67	64.8	18	9.9	#3
162	DP-B2B	0.48	DP-B2A FS DP-B2B	Panelboard	41.60	14.9	18	1.1	#0
163	DP-B2BA	0.48	DP-B2A FS B2BA	Switchboard	46.46	17.7	18	1.5	#1
164	DP-B2C	0.48	SUBB2B CB DP-B2C	Switchboard	52.58	64.4	18	9.8	#3
165	DP-B2D	0.48	SUBB2B CB DP-B2D	Switchboard	42.37	50.1	18	6.8	#2
166	DP6	0.48	P1 RELAY 2	Other	1.29	117.1	18	19	#3
167	DP41 FS	0.208	SUB4A CB DP-41	Other	25.23	100.9	18	19	#3
168	DP61 FS	0.208	DP6 FS DP-61	Other	6.62	8.4	18	0.5	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
169	DWBP-1	0.48	FSWEMCCB2A DWP	Other	20.14	7.5	18	0.4	#0
170	DWBP-2	0.48	FSWEMCCB2A DWP	Other	20.14	7.5	18	0.4	#0
171	DWBP-3	0.48	FSWEMCCB2A DWP	Other	20.14	7.5	18	0.4	#0
172	DWP	0.48	FSWEMCCB2A DWP	Other	20.96	7.5	18	0.4	#0
173	EDP T15A	0.48	T26AP2-CB EDP15	Switchboard	38.13	41.4	18	5.1	#2
174	EDP-4A	0.48	SUB4A CB ATS-1	Switchboard	35.28	36.3	18	4.2	#2
175	EDP-6A	0.48	SUB6AP1 CB ATS-2	Switchboard	37.59	41.3	18	5.1	#2
176	EDP-6B	0.48	SUB6AP2 CB ATS-3	Switchboard	35.74	39.6	18	4.8	#2
177	EDP-6M	0.48		Switchboard					Extreme Danger
178	EDP-T26A	0.48	T26AP1-CB ATS-5	Switchboard	104.94	105.2	18	20.2	#3
179	EDP-T26B	0.48	EDPT26A-FS-T26B	Switchboard	105.55	38.8	18	4.7	#2
180	EF1 DISC	0.48	MCCT26A FS EF1	Other	2.15	1.7	18	0	#0
181	EF-2 FS	0.48	EMCC4A FS EF-2	Other	4.16	2.7	18	0.1	#0
182	EF3 STR-DISC	0.48	DP6 FS L6B	Other	2.13	16.4	18	1	#0
183	EF4 STR-DISC	0.48	DP6 FS L6B	Other	2.13	16.4	18	1	#0
184	EF5 DISC	0.48	EMCCB2A FS EF5	Other	5.12	3.1	18	0.1	#0
185	EF6 STR-DISC	0.48	DP6 FS L6B	Other	2.13	16.4	18	1	#0
186	EF7 DISC	0.48	MCC6A FS EF-7	Other	3.69	2.5	18	0.1	#0
187	EF9 DISC	0.48	MCC6A FS E-F9	Other	2.97	2.1	18	0.1	#0
188	EF10 DISC	0.48	MCC6A FS EF10	Other	27.09	8.7	18	0.5	#0
189	ELEV 1 CNTRL	0.48	EDPT15 FS ELEV1	Other	28.73	9.1	18	0.6	#0
190	ELEV 2 CNTRL	0.48	EDPT15 FS ELEV2	Other	28.73	9.1	18	0.6	#0
191	ELEV 3 CNTRL	0.48	EDPT15 FS ELEV3	Other	28.73	9.1	18	0.6	#0
192	ELEV 4 CNTRL	0.48	EDPT15 FS ELEV4	Other	28.73	9.1	18	0.6	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
193	ELEV 5 CNTRL	0.48	EDPT15 FS ELEV5	Other	28.73	9.1	18	0.6	#0
194	ELEV 6 CNTRL	0.48	EDPT15 FS ELEV6	Other	28.73	9.1	18	0.6	#0
195	ELEV 7 CNTRL	0.48	EDPT26B-FS-EL7	Other	64.15	24.7	18	2.4	#1
196	ELEV 8 CNTRL	0.48	EDPT26B-FS-EL8	Other	64.15	24.7	18	2.4	#1
197	ELEV 9 CNTRL	0.48	EDPT26B-FS-EL9	Other	64.15	24.7	18	2.4	#1
198	ELEV 10 CNTRL	0.48	EDPT26B-FS-EL10	Other	64.15	24.7	18	2.4	#1
199	ELEV 11 CNTRL	0.48	EDPT26B-FS-EL11	Other	64.15	24.7	18	2.4	#1
200	ELEV 12 CNTRL	0.48	EDPT26B-FS-EL12	Other	64.15	24.7	18	2.4	#1
201	ELEV 13 CNTRL	0.48	ELEV 13 FS	Other	64.19	24.7	18	2.4	#1
202	ELEV 13 FS	0.48	EDPT26B-FS-EL13	Other	64.19	24.7	18	2.4	#1
203	ELEV 14 CNTRL	0.48	ELEV 14 FS	Other	64.19	24.7	18	2.4	#1
204	ELEV 14 FS	0.48	EDPT26B-FS-EL14	Other	64.19	24.7	18	2.4	#1
205	ELEV 16 FS	0.48	DPB2A FS ELEV16	Other	9.30	4.7	18	0.2	#0
206	ELEV 19 CNTRL	0.48	FSW EDP4A E19	Other	10.39	5.1	18	0.2	#0
207	ELEV 19 DISC	0.48	FSW EDP4A E19	Other	17.38	7.2	18	0.4	#0
208	ELEV E15 CNTRL	0.48	FSW ELEV E15	Other	4.90	3	18	0.1	#0
209	ELEV E15 FS	0.48	EDP6B FS ELEV 15	Other	5.32	3.2	18	0.1	#0
210	ELEV E18 CNTRL	0.48	FSW ELEV E18	Other	4.15	2.7	18	0.1	#0
211	ELEV E18 FS	0.48	EDP6A FS ELEV 18	Other	4.65	2.9	18	0.1	#0
212	ELEV E20 FS	0.48	DP4C FS ELEV20	Other	3.33	2.3	18	0.1	#0
213	ELEV17 FS	0.48	DP-B2A FS ELEV17	Other	23.94	8	18	0.5	#0
214	ELEV17 MTR 1 STR	0.48	ELEV17 FS	Other	21.70	7.6	18	0.4	#0
215	ELEV17 MTR 2 STR	0.48	ELEV17 FS	Other	21.70	7.6	18	0.4	#0
216	EMCC-4A	0.48	EDP4A FS EDP-4A	MCC	13.66	6.2	18	0.3	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
217	EMCC-6A	0.48	EDP6A FS EMCC6A	MCC	25.03	8.2	18	0.5	#0
218	EMCC-B2A	0.48	EDP6B FS EMCCB2A	MCC	30.20	9.8	18	0.6	#0
219	EMCC-T26A	0.48	EDPT26A -EMCCT26	MCC	90.77	34.4	18	3.9	#1
220	ER1A FS	0.208	FSW BUSEM4 EL1A	Other	2.11	8.4	18	0.5	#0
221	ER2B FS	0.208	FSW BUSEM ER2XFR	Other	1.83	5.2	18	0.2	#0
222	ER3A FS	0.208	FSW BUSEM4 ER3A	Other	0.76	2.9	18	0.1	#0
223	ER4A FS	0.208	FSW BUSEM EL4XFR	Other	1.24	23.1	18	1.7	#1
224	ER4C DISC	0.48	EDP4A FS EL5A	Other	28.82	10	18	0.6	#0
225	ER5A FS	0.208	EDP4A FS EL5A	Other	3.25	6.4	18	0.3	#0
226	ERB2A FS	0.208	FSW BUSEM ELBXFR	Other	1.15	9.2	18	0.6	#0
227	ERG1A FS	0.208	EDP4A FS ELG1A	Other	1.98	30.6	18	2.6	#1
228	ERT4A FS	0.208	FSW BUSC LT4XFR	Other	2.13	4.8	18	0.2	#0
229	ERT7A FS	0.208	FSW BUSCELT7XFR	Other	2.12	4.8	18	0.2	#0
230	ERT10A FS	0.208	FSW BUSC LT10XFR	Other	2.11	4.8	18	0.2	#0
231	ERT13A FS	0.208	FSW BUSCELT13XFR	Other	2.11	4.8	18	0.2	#0
232	ERT16A FS	0.208	FSW BUSC LT16XFR	Other	2.10	4.8	18	0.2	#0
233	ERT19A FS	0.208	FSW BUSCELT19XFR	Other	2.10	4.7	18	0.2	#0
234	ERT1A FS	0.208	FSW BUSCELT1XFR	Other	2.13	4.8	18	0.2	#0
235	ERT22A FS	0.208	FSW BUSC LT22XFR	Other	2.09	4.7	18	0.2	#0
236	ERT25A FS	0.208	FSW BUSCELT25XFR	Other	2.08	4.7	18	0.2	#0
237	EYEBROW DISC	0.48	DP6 FS L6B	Other	3.36	4.6	18	0.2	#0
238	FOP 14 DISC	0.48	EDP4A FS ELG1A	Other	3.52	3.8	18	0.2	#0
239	FOP 15 DISC	0.48	EDP4A FS ELG1A	Other	3.52	3.8	18	0.2	#0
240	FP1A DISC	0.48	EMCCB2A FS FP1A	Other	4.80	3	18	0.1	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
241	FP2A DISC	0.48	EMCCB2A FS FP2A	Other	4.80	3	18	0.1	#0
242	GARAGE AC FS	0.48	EDP4A FS ELG1A	Other	4.52	3.2	18	0.1	#0
243	GENSYNC	0.48		Switchgear					Extreme Danger
244	KIOSK DISC	0.208	KIOSK FS	Other	3.28	10.7	18	0.7	#0
245	KIOSK FS	0.208	DP-B2B CB KIOSK	Other	3.06	6.4	18	0.3	#0
246	LOUDSPEAK DISC	0.48	DP6 FS L6B	Other	3.36	4.6	18	0.2	#0
247	MAINCB1BUS	14.4	MCB1 RELAY	Other	2243.36	1624.2	18	9770	Extreme Danger
248	MAINCB2BUS	14.4	MCB2 RELAY	Other	2243.36	1624.3	18	9771.7	Extreme Danger
249	MAKEUP WTR P STR	0.48	SEC CL FS1	Other	6.16	3.9	18	0.2	#0
250	MAN LIFT DISC	0.48	DP6 FS L6B	Other	3.37	4.6	18	0.2	#0
251	MCC T26A	0.48	DPT26A FSMCCT26A	MCC	79.59	28.7	18	3	#1
252	MCC-5A	0.48	SUB6AP2 CB MCC5A	MCC	24.78	24	18	2.3	#1
253	MCC-6A	0.48	SUB6AP2 CB MCC6A	MCC	35.26	35.3	18	4.1	#2
254	MCC4A	0.48	DP4C FS MCC4A	MCC	33.43	11.2	18	0.7	#0
255	MULTIDIM FS	0.208	DP4D FS MULTDIM	Other	9.79	15.5	18	1.2	#0
256	N MV WALL DISC	0.48	DP6 FS L6B	Other	2.38	11.7	18	0.6	#0
257	N VOM LIFT FS	0.48	DP-B2D FS L1D	Other	4.56	4	18	0.2	#0
258	N WING DRIVE FS1	0.48	DP-B2D FS L1D	Other	4.56	4	18	0.2	#0
259	N WING DRIVE FS2	0.48	N WING DRIVE FS	Other	2.69	2	18	0.1	#0
260	P1 DISC	0.48	EMCCT26A-FS-P1	Other	6.27	3.6	18	0.1	#0
261	P2 DISC	0.48	MCCT26A FS P2	Other	10.38	5	18	0.2	#0
262	P3 DISC	0.48	EMCCT26A-FS-P3	Other	6.27	3.6	18	0.1	#0
263	P4 VFD	0.48	MCCT26A-FS-P4	VFD	9.24	4.6	18	0.2	#0
264	P5 DISC	0.48	EMCCT26A-FS-P5	Other	2.51	1.9	18	0.1	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
265	P6 DISC	0.48	EMCCT26A-FS-P6	Other	2.51	1.9	18	0.1	#0
266	P7 DISC	0.48	MCCT26A FS P7	Other	28.96	9.1	18	0.6	#0
267	P7 VFD	0.48	MCCT26A FS P7	VFD	32.11	10.3	18	0.7	#0
268	P8 DISC	0.48	EMCCT26A-FS-P8	Other	3.43	2.4	18	0.1	#0
269	P8 VFD	0.48	EMCCT26A-FS-P8	VFD	3.99	2.6	18	0.1	#0
270	P9 DISC	0.48	MCCT26A FS P9	Other	6.70	3.7	18	0.1	#0
271	P9 VFD	0.48	MCCT26A FS P9	VFD	9.24	4.6	18	0.2	#0
272	P10 DISC	0.48	EMCCT26A-FS-P10	Other	2.51	1.9	18	0.1	#0
273	P11 DISC	0.48	EMCCT26A-FS-P11	Other	2.51	2.1	18	0.1	#0
274	P13 DISC	0.48	MCCT26A FS P13	Other	5.89	3.4	18	0.1	#0
275	P22 DISC	0.48	MCCT26A FS P22	Other	9.24	4.6	18	0.2	#0
276	P23 DISC	0.48	MCCT26A FS P23	Other	3.73	2.5	18	0.1	#0
277	P24 DISC	0.48	MCCT26A FS P24	Other	2.51	1.9	18	0.1	#0
278	PCU-1 DISC(FLR8)	0.208	FSW XFR RT02A	Other	1.66	10.4	18	0.5	#0
279	PCU-1 N LOBBY	0.208	DPB21 FS R2B-3D	Other	3.31	4.7	18	0.2	#0
280	PMP-17A VFD	0.48	DP-B2A FS B2BA	VFD	37.60	12.7	18	0.9	#0
281	PMP-17B VFD	0.48	DP-B2A FS B2BA	VFD	37.60	12.7	18	0.9	#0
282	PMP-17C VFD	0.48	DP-B2A FS B2BA	VFD	37.60	12.7	18	0.9	#0
283	PMP-18A VFD	0.48	DP-B2A FS DP-B2B	VFD	11.48	5.4	18	0.3	#0
284	PMP-18B VFD	0.48	DP-B2A FS DP-B2B	VFD	11.48	5.4	18	0.3	#0
285	PMP-18C VFD	0.48	DP-B2A FS DP-B2B	VFD	11.48	5.4	18	0.3	#0
286	PMP-19A VFD	0.48	DP-B2A FSP19	VFD	25.88	8.3	18	0.5	#0
287	PMP-19B VFD	0.48	DP-B2A FSP19	VFD	25.88	8.3	18	0.5	#0
288	PMP-20A VFD	0.48	DP-B2B CB P20AB	VFD	8.20	5.9	18	0.3	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
289	PMP-20B VFD	0.48	DP-B2B CB P20AB	VFD	8.20	5.9	18	0.3	#0
290	PMP-21A VFD	0.48	DP-B2B CB P21AB	VFD	4.13	3.9	18	0.2	#0
291	PMP-21B VFD	0.48	DP-B2B CB P21AB	VFD	4.13	3.9	18	0.2	#0
292	R1A FS	0.208	BUSK FS L1A	Other	5.27	8.3	18	0.5	#0
293	R2A FS	0.208	FSW BUSK L2A	Other	3.04	7.4	18	0.4	#0
294	R3A FS	0.208	FSW BUSK L3A	Other	5.26	8.3	18	0.5	#0
295	R4A FS	0.208	FSW BUSK L4A	Other	5.26	8.1	18	0.5	#0
296	R4B-R4C XFMR FS	0.208	DP4D FS R4B/C	Other	5.38	7.6	18	0.4	#0
297	R5A FS	0.208	BUS-K FS L5A	Other	5.24	8.2	18	0.5	#0
298	R5B FS	0.208	DP4C FS L5B	Other	5.22	7.5	18	0.4	#0
299	R6A FS	0.208	MCC6A FS L6A	Other	4.82	10.3	18	0.7	#0
300	R6B FS	0.208	DP6 FS L6B	Other	3.12	18.1	18	1.5	#1
301	RB1A FS	0.208	DPB2C FS LB1A	Other	4.85	8.2	18	0.5	#0
302	RB2A FS	0.208	DP-B2C FS LB2A	Other	4.86	8.2	18	0.5	#0
303	RG1A FS	0.208	DP4C FS LG1A	Other	2.74	9.6	18	0.6	#0
304	RT1A FS	0.208	FSW BUSD LT01A	Other	5.23	8.2	18	0.5	#0
305	RT2A FS	0.208	FSW BUSD RT02XFR	Other	5.26	7.5	18	0.4	#0
306	RT2B FS	0.208	FSW BUSE LT02XFR	Other	5.25	7.5	18	0.4	#0
307	RT3A FS	0.208	FSW BUSD LT03A	Other	5.22	8.2	18	0.5	#0
308	RT3B FS	0.208	FSW BUSE RT3B	Other	5.28	7.5	18	0.4	#0
309	RT4A FS	0.208	FSW BUSD RT04XFR	Other	5.24	7.5	18	0.4	#0
310	RT4B FS	0.208	FSW BUSE LT04XFR	Other	5.24	7.5	18	0.4	#0
311	RT5A FS	0.208	FSW BUSD LT05A	Other	5.20	8.2	18	0.5	#0
312	RT5B FS	0.208	FSW BUSE RT5B	Other	5.26	7.5	18	0.4	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
313	RT6A FS	0.208	FSW BUSD RT06XFR	Other	5.23	7.5	18	0.4	#0
314	RT6B FS	0.208	FSW BUSE LT06XFR	Other	5.22	7.5	18	0.4	#0
315	RT7A FS	0.208	FSW BUSD LT07A	Other	5.18	8.2	18	0.5	#0
316	RT7B FS	0.208	FSW BUSE RT7B	Other	5.25	7.5	18	0.4	#0
317	RT8A FS	0.208	FSW BUSD RT08XFR	Other	5.21	7.5	18	0.4	#0
318	RT8B FS	0.208	FSW BUSE LT08XFR	Other	5.20	7.5	18	0.4	#0
319	RT9A FS	0.208	FSW BUSD LT09A	Other	5.17	8.2	18	0.5	#0
320	RT9B FS	0.208	FSW BUSE RT9B	Other	5.23	7.5	18	0.4	#0
321	RT10A FS	0.208	FSW BUSD RT10XFR	Other	5.19	7.5	18	0.4	#0
322	RT10B FS	0.208	FSW BUSE LT10XFR	Other	5.19	7.5	18	0.4	#0
323	RT11A FS	0.208	FSW BUSD LT11A	Other	5.15	8.2	18	0.5	#0
324	RT11B FS	0.208	FSW BUSE RT11B	Other	5.21	7.5	18	0.4	#0
325	RT12A FS	0.208	FSW BUSG RT12XFR	Other	5.49	7.6	18	0.4	#0
326	RT12B FS	0.208	FSW BUSF LT12XFR	Other	5.45	7.6	18	0.4	#0
327	RT13A FS	0.208	FSW BUSG LT13A	Other	5.47	8.3	18	0.5	#0
328	RT13B FS	0.208	FSW BUSF RT13B	Other	4.92	7.4	18	0.4	#0
329	RT14A FS	0.208	FSW BUSG RT14XFR	Other	5.47	8.3	18	0.5	#0
330	RT14B FS	0.208	FSW BUSF RT14XFR	Other	5.50	7.6	18	0.4	#0
331	RT15A FS	0.208	FSW BUSG LT15A	Other	5.52	7.6	18	0.4	#0
332	RT15B FS	0.208	FSW BUSF LT15XFR	Other	5.47	8.3	18	0.5	#0
333	RT16A FS	0.208	FSW BUSG RT16XFR	Other	5.53	7.6	18	0.4	#0
334	RT16B FS	0.208	FSW BUSF LT16XFR	Other	5.49	8.4	18	0.5	#0
335	RT17A FS	0.208	FSW BUSG LT17A	Other	5.51	8.4	18	0.5	#0
336	RT17B FS	0.208	FSW BUSF RT17B	Other	5.53	7.6	18	0.4	#0

OBA - RIFFE BUILDING ARC FLASH REPORT

Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
337	RT18A FS	0.208	FSW BUSG RT18XFR	Other	5.55	7.6	18	0.4	#0
338	RT18B FS	0.208	FSW BUSF LT18XFR	Other	5.50	8.4	18	0.5	#0
339	RT19A FS	0.208	FSW BUSG LT19A	Other	5.52	8.4	18	0.5	#0
340	RT19B FS	0.208	FSW BUSF RT19B	Other	5.55	7.6	18	0.4	#0
341	RT1B FS	0.208	BUS-E FS RT1B	Other	5.30	7.5	18	0.4	#0
342	RT20A FS	0.208	FSW BUSG RT20XFR	Other	5.57	7.6	18	0.4	#0
343	RT20B FS	0.208	FSW BUSF LT20XFR	Other	5.52	8.4	18	0.5	#0
344	RT21A FS	0.208	FSW BUSG LT21A	Other	5.53	8.7	18	0.5	#0
345	RT21B FS	0.208	FSW BUSF RT21B	Other	5.56	7.6	18	0.4	#0
346	RT21E FS	0.208	FSW BUSF RT21F	Other	3.39	6	18	0.3	#0
347	RT21G FS	0.208	FSWBUSGRT21GXFR	Other	3.52	6.1	18	0.3	#0
348	RT22A FS	0.208	FSW BUSG RT22XFR	Other	5.58	8.4	18	0.5	#0
349	RT22B FS	0.208	FSW BUSF LT22XFR	Other	5.53	8.4	18	0.5	#0
350	RT23B FS	0.208	FSW BUSF RT23B	Other	5.58	7.6	18	0.4	#0
351	RT23C FS	0.208	FSW BUSG LT23A	Other	5.55	8.4	18	0.5	#0
352	RT24A FS	0.208	FSW BUSG RT24XFR	Other	5.60	8.4	18	0.5	#0
353	RT24B FS	0.208	FSW BUSF LT24XFR	Other	5.55	8.4	18	0.5	#0
354	RT25A FS	0.208	DPT26A FS LT25A	Other	5.30	9.1	18	0.5	#0
355	RT25B FS	0.208	DPT26A FS RT25B	Other	5.60	7.7	18	0.4	#0
356	RT26A FS	0.208	DPT26A FS LT26A	Other	5.57	8.7	18	0.5	#0
357	S MV WALL DISC	0.48	DP6 FS L6B	Other	2.38	11.7	18	0.6	#0
358	S VOM LIFT FS	0.48	DP-B2D FS L1D	Other	4.56	4	18	0.2	#0
359	S WING DRIVE FS1	0.48	DP-B2D FS L1D	Other	4.56	4	18	0.2	#0
360	S WING DRIVE FS2	0.48	S WING DRIVE FS	Other	2.69	2	18	0.1	#0

OBA - RIFFE BUILDING ARC FLASH REPORT

Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
361	SCENE COMP DISC	0.208	DPB21 FS L1C	Other	2.02	21.2	18	1.5	#1
362	SCNLIFT1 CTRL	0.48	FSW1SCNLIFT	Panel	23.59	7.9	18	0.4	#0
363	SCNLIFT1 FS	0.48	DP-B2B FS S LIFT	Other	26.30	8.6	18	0.5	#0
364	SCNLIFT2 CTRL	0.48	FSW2SCNLIFT	Panel	23.59	7.9	18	0.4	#0
365	SCNLIFT2 FS	0.48	DP-B2B FS S LIFT	Other	26.30	8.6	18	0.5	#0
366	SEC CL LP PNL	0.48	DP-B2A FS DP-B2B	Other	33.48	10.9	18	0.7	#0
367	SEC CL P1 VFD	0.48	SEC CL P1 FS	VFD	6.16	3.9	18	0.2	#0
368	SEC CL P2 VFD	0.48	SEC CL P2 FS	VFD	6.16	3.9	18	0.2	#0
369	SF1 DISC	0.48	MCCT26A FS SF1	Other	3.00	2.2	18	0.1	#0
370	SF2 DISC	0.48	MCCT26A FS SF2	Other	3.00	2.2	18	0.1	#0
371	SF3 DISC	0.48	MCCT26A FS SF3	Other	2.73	2	18	0.1	#0
372	SF4 DISC	0.48	MCCT26A FS SF4	Other	3.00	2.2	18	0.1	#0
373	SF5 DISC	0.48	MCCT26A FS SF5	Other	2.73	2	18	0.1	#0
374	SF6 DISC	0.48	MCCT26A FS SF6	Other	2.73	2	18	0.1	#0
375	SF7 DISC	0.48	MCCT26A FS SF7	Other	2.15	1.7	18	0	#0
376	SF8 DISC	0.48	MCC4A FS SF-8	Other	3.68	2.5	18	0.1	#0
377	SMP-1 DISC	0.48	EDP4A FS ELG1A	Other	3.52	3.8	18	0.2	#0
378	SMP-2 DISC	0.48	EDP4A FS ELG1A	Other	3.52	3.8	18	0.2	#0
379	SMP3A-B DISC	0.48	EMCCB2A FS SMP3A	Other	6.36	3.6	18	0.1	#0
380	SMP4A-B DISC	0.48	EMCCB2A FS SMP4A	Other	6.36	3.9	18	0.2	#0
381	SPF1 DISC	0.48	EMCCT26A-FS-SPF1	Other	3.99	2.6	18	0.1	#0
382	SPF2 DISC	0.48	EMCCT26A-FS-SPF2	Other	3.99	2.6	18	0.1	#0
383	SPF3 DISC	0.48	EMCC4A FS SPF3	Other	3.29	2.3	18	0.1	#0
384	SRF1 DISC	0.48	EMCC6A FS SRF1	Other	10.63	5.1	18	0.2	#0

OBA - RIFFE BUILDING ARC FLASH REPORT

Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
385	STAGE DISC	0.208	DPB22 FS STAGE	Other	9.32	50.6	18	5.5	#2
386	STAGE LIFT 1 FS	0.48	DP-B2D FS L1D	Other	13.70	6.3	18	0.3	#0
387	STAGE LIFT 2 FS	0.48	DP-B2D FS L1D	Other	12.72	5.9	18	0.3	#0
388	SUB 4A PRI SW	14.4	P3 RELAY 2	Other	1498.14	1250	18	5786.8	Extreme Danger
389	SUB 6A-P2 PRI SW	14.4	P2 RELAY 2	Other	1204.96	1120.9	18	4653.4	Extreme Danger
390	SUB 6B	0.208	MCB2 RELAY2	Switchgear	1.14	556.4	18	188.5	Extreme Danger
391	SUB 6B PRI SW	14.4	P4 RELAY 2	Other	1498.29	1249.9	18	5786.2	Extreme Danger
392	SUB B2B PRI SW	14.4	P4 RELAY 2	Other	1498.29	1249.9	18	5786.2	Extreme Danger
393	SUB B2C PRI SW	14.4	P3 RELAY 2	Other	1498.14	1250	18	5786.9	Extreme Danger
394	SUB T26A-P2	0.48	P2 RELAY 2	Switchgear	2.16	272	18	65.7	Extreme Danger
395	SUB T26A-P1	0.48	P1 RELAY 2	Switchgear	2.30	282	18	69.3	Extreme Danger
396	SUB4A	0.48	P3 RELAY 2	Switchgear	1.33	127.9	18	21.6	#3
397	SUB6A P1 PRI SW	14.4	P1 RELAY 2	Other	1204.96	1120.9	18	4653.4	Extreme Danger
398	SUB6A-P1	0.48	P1 RELAY 2	Switchgear	1.35	123.4	18	20.5	#3
399	SUB6A-P2	0.48	P2 RELAY 2	Switchgear	1.27	117.6	18	19.1	#3
400	SUBB2B	0.48	MCB2 RELAY2	Switchgear	1.74	223.3	18	49.1	Extreme Danger
401	SUBB2C	4.16	P3 RELAY 2	Other	1.76	51.4	18	9.8	#3
402	SUBT26A P1 PRISW	14.4	P1 RELAY 2	Other	331.61	588	18	1280.7	Extreme Danger
403	SUBT26A P2 PRISW	14.4	P2 RELAY 2	Other	331.61	588	18	1280.7	Extreme Danger
404	TAC2	0.48	EMCCB2A FS TAC2	Other	3.85	2.6	18	0.1	#0
405	TAC3	0.48	EMCC6A FS TAC	Other	12.10	5.6	18	0.3	#0
406	FLR SYS MCC	0.48	DP4D-FSFLRSYSMCC	MCC	22.20	7.6	18	0.4	#0
407	SPOT LN WNCH	0.208	DP6 FS SLWMCC	MCC	5.36	7.5	18	0.4	#0
408	AC1 (T16)	0.48	FSW BUSC AC1	Panel	15.24	7.1	18	0.4	#0

OBA - RIFFE BUILDING ARC FLASH REPORT

Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
409	AC2 (T16)	0.48	FSW BUSC AC2	Panel	15.24	7.1	18	0.4	#0
410	ART DIMMING PNL	0.208	DPB22 FS RIC-D	Panel	4.40	3	18	0.1	#0
411	CAF DIM PNL	0.208	DPB22 FS CAF DIM	Panel	4.51	2.8	18	0.1	#0
412	CH-4	0.48	MCCT26A-FS-CH4	Panel	28.22	8.9	18	0.5	#0
413	COMPUTER RM PNL	0.48	FSW BUSC UPS	Panel	14.03	6.7	18	0.4	#0
414	DIM13	0.208	FSW DIM13	Panel	12.52	5.7	18	0.3	#0
415	DIMMER PNL 1BOT	0.208	DP5A FS DIM 1B	Panel	17.50	7.1	18	0.4	#0
416	DIMMER PNL 1TOP	0.208	DP5A FS DIM 1T	Panel	17.50	7.1	18	0.4	#0
417	DIMMER PNL 2BOT	0.208	DP5A FS DIM 2B	Panel	17.50	7.1	18	0.4	#0
418	DIMMER PNL 2TOP	0.208	DP5A FS DIM 2T	Panel	17.50	7.1	18	0.4	#0
419	DIMMER PNL 3BOT	0.208	DP5A FS DIM 3B	Panel	17.50	7.1	18	0.4	#0
420	DIMMER PNL 3TOP	0.208	DP5A FS DIM 3T	Panel	17.50	7.1	18	0.4	#0
421	DIMMER PNL 4BOT	0.208	DP5A FS DIM 4B	Panel	17.50	7.1	18	0.4	#0
422	DIMMER PNL 4TOP	0.208	DP5A FS DIM 4T	Panel	17.50	7.1	18	0.4	#0
423	DOOR CNTRL PNL	0.48	DOOR CNTL FS	Panel	8.81	4.5	18	0.2	#0
424	DP-4B	0.48	DP4C FS DP-4B	Panel	32.18	11.3	18	0.8	#0
425	DP1A	0.48	BUSK FS DP1A	Panel	33.72	12	18	0.8	#0
426	DP4A	0.48	SUBB2B CB BUS-K	Panel	31.70	89.7	18	12.8	#3
427	DPT25A	0.48	DPT26A FS DPT25A	Panel	34.97	11.5	18	0.8	#0
428	EL1A	0.48	FSW BUSEM4 EL1A	Panel	22.36	8.4	18	0.5	#0
429	EL4A	0.48	FSW BUSEM EL4XFR	Panel	24.35	8.8	18	0.5	#0
430	EL5A	0.48	EDP4A FS EL5A	Panel	28.82	10	18	0.6	#0
431	ELB2A	0.48	FSW BUSEM ELBXFR	Panel	5.57	3.6	18	0.1	#0
432	ELG1A	0.48	EDP4A FS ELG1A	Panel	9.63	5.3	18	0.2	#0

OBA - RIFFE BUILDING ARC FLASH REPORT

Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
433	ELGTA	0.48	EDP4A FS ELG1A	Panel	4.54	3.2	18	0.1	#0
434	ELT4A	0.48	FSW BUSC LT4XFR	Panel	25.44	9	18	0.5	#0
435	ELT7A	0.48	FSW BUSCELT7XFR	Panel	24.02	8.7	18	0.5	#0
436	ELT10A	0.48	FSW BUSC LT10XFR	Panel	22.73	8.5	18	0.5	#0
437	ELT13A	0.48	FSW BUSCELT13XFR	Panel	21.55	8.3	18	0.5	#0
438	ELT16A	0.48	FSW BUSC LT16XFR	Panel	20.47	8.2	18	0.5	#0
439	ELT19A	0.48	FSW BUSCELT19XFR	Panel	19.49	8.2	18	0.5	#0
440	ELT1A	0.48	FSW BUSCELT1XFR	Panel	26.99	9.4	18	0.6	#0
441	ELT22A	0.48	FSW BUSC LT22XFR	Panel	18.58	8.1	18	0.5	#0
442	ELT25A	0.48	FSW BUSCELT25XFR	Panel	17.75	7.9	18	0.4	#0
443	ER1A	0.208	FSW ER1A	Panel	7.76	4.5	18	0.2	#0
444	ER2B	0.208	FSW BUSEM ER2XFR	Panel	1.76	5.4	18	0.3	#0
445	ER3A	0.208	FSW ER3A	Panel	2.83	2.1	18	0.1	#0
446	ER4A	0.208	FSW ER4A	Panel	4.42	2.8	18	0.1	#0
447	ER4B	0.208	FSW ER5A	Panel	5.32	3.5	18	0.1	#0
448	ER4C	0.208	ER4C DISC	Panel	3.25	5.8	18	0.3	#0
449	ER5A	0.208	FSW ER5A	Panel	11.44	5.9	18	0.3	#0
450	ER5B	0.208	FSW BUSEM4 ER5B	Panel	2.13	4.4	18	0.2	#0
451	ERB2A	0.208	FSW ERB2A	Panel	4.49	2.8	18	0.1	#0
452	ERG1A	0.208	FSW ERG1A	Panel	7.37	4.4	18	0.2	#0
453	ERT10A	0.208	FSW ERT10A	Panel	7.76	4.5	18	0.2	#0
454	ERT13A	0.208	FSW ERT13A	Panel	7.74	4.5	18	0.2	#0
455	ERT16A	0.208	FSW ERT16A	Panel	7.72	4.5	18	0.2	#0
456	ERT19A	0.208	FSW ERT19A	Panel	7.70	4.5	18	0.2	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
457	ERT1A	0.208	FSW ERT1A	Panel	7.83	4.5	18	0.2	#0
458	ERT4A	0.208	FSW ERT4A	Panel	7.80	4.5	18	0.2	#0
459	ERT7A	0.208	FSW ERT7A	Panel	7.78	4.5	18	0.2	#0
460	ERT22A	0.208	FSW ERT22A	Panel	7.67	4.5	18	0.2	#0
461	ERT25A	0.208	FSW ERT25A	Panel	7.65	4.5	18	0.2	#0
462	IR4A	0.208	FSW R4B/C	Panel	6.66	3.7	18	0.1	#0
463	L1A	0.48	BUSK FS L1A	Panel	33.72	12	18	0.8	#0
464	L1C	0.208	DPB21 FS L1C	Panel	6.56	3.7	18	0.1	#0
465	L1D	0.48	DP-B2D FS L1D	Panel	16.40	7.1	18	0.4	#0
466	L2A	0.48	FSW BUSK L2A	Panel	33.46	11.9	18	0.8	#0
467	L3A	0.48	FSW BUSK L3A	Panel	32.69	11.5	18	0.8	#0
468	L4A	0.48	SUBB2B CB BUS-K	Panel	31.70	89.7	18	12.8	#3
469	L5A	0.48	BUS-K FS L5A	Panel	31.46	11	18	0.7	#0
470	L5B	0.48	DP4C FS L5B	Panel	30.29	9.6	18	0.6	#0
471	L6A	0.48	MCC6A FS L6A	Panel	16.06	6.7	18	0.4	#0
472	L6B	0.48	DP6 FS L6B	Panel	36.94	12.4	18	0.9	#0
473	LB1A	0.48	DPB2C FS LB1A	Panel	16.07	7.4	18	0.4	#0
474	LB1B	0.48	DPB2C FS LB1B	Panel	23.56	8.6	18	0.5	#0
475	LB2A	0.48	DP-B2C FS LB2A	Panel	16.43	7.5	18	0.4	#0
476	LB2B	0.48	DP-B2C FS LB2B	Panel	23.92	8.7	18	0.5	#0
477	LD DOCK TV TRK	0.208	DPB22 FS LD DCK	Panel	5.34	3.2	18	0.1	#0
478	LG1A	0.48	DP4C FS LG1A	Panel	14.83	7	18	0.4	#0
479	LG2A	0.48	DP4C FS LG2A	Panel	36.11	12	18	0.8	#0
480	LT1A	0.48	FSW BUSD LT01A	Panel	30.50	10.6	18	0.7	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
481	LT3A	0.48	FSW BUSD LT03A	Panel	29.69	10.3	18	0.7	#0
482	LT4A	0.48	FSW BUSE LT04XFR	Panel	31.21	9.9	18	0.6	#0
483	LT5A	0.48	FSW BUSD LT05A	Panel	28.91	10	18	0.6	#0
484	LT6A	0.48	FSW BUSE LT06XFR	Panel	30.31	9.6	18	0.6	#0
485	LT7A	0.48	FSW BUSD LT07A	Panel	28.15	9.8	18	0.6	#0
486	LT8A	0.48	FSW BUSE LT08XFR	Panel	29.45	9.3	18	0.6	#0
487	LT9A	0.48	FSW BUSD LT09A	Panel	27.42	9.5	18	0.6	#0
488	LT10A	0.48	FSW BUSE LT10XFR	Panel	28.63	9	18	0.5	#0
489	LT11A	0.48	FSW BUSD LT11A	Panel	26.71	9.3	18	0.6	#0
490	LT12A	0.48	FSW BUSF LT12XFR	Panel	51.94	21.3	18	1.9	#1
491	LT13A	0.48	FSW BUSG LT13A	Panel	56.35	24.8	18	2.4	#1
492	LT14A	0.48	FSW BUSG LT12XFR_A	Panel	57.10	25	18	2.4	#1
493	LT15A	0.48	FSW BUSF LT15XFR	Panel	56.99	25	18	2.4	#1
494	LT16A	0.48	FSW BUSF LT16XFR	Panel	60.01	25.9	18	2.6	#1
495	LT17A	0.48	FSW BUSG LT17A	Panel	64.35	27.1	18	2.7	#1
496	LT18A	0.48	FSW BUSF LT18XFR	Panel	63.00	26.8	18	2.7	#1
497	LT19A	0.48	FSW BUSG LT19A	Panel	67.76	28.1	18	2.9	#1
498	LT20A	0.48	FSW BUSF LT20XFR	Panel	67.65	28.1	18	2.9	#1
499	LT21A	0.48	FSW BUSG LT21A	Panel	71.20	26.4	18	2.6	#1
500	LT22A	0.48	FSW BUSF LT22XFR	Panel	71.99	29.3	18	3.1	#1
501	LT23A	0.48	FSW BUSG LT23A	Panel	77.93	30.9	18	3.3	#1
502	LT24A	0.48	FSW BUSF LT24XFR	Panel	77.82	30.9	18	3.3	#1
503	LT25A	0.48	DPT26A FS LT25A	Panel	34.97	11.5	18	0.8	#0
504	LT26A	0.48	DPT26A FS LT26A	Panel	82.91	29.3	18	3.1	#1

OBA - RIFFE BUILDING ARC FLASH REPORT

Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
505	LT26B	0.48	DPT26A FS LT26B	Panel	50.68	20.5	18	1.8	#1
506	LT2A	0.48	FSW BUSE LT02XFR	Panel	32.14	10.3	18	0.7	#0
507	MULTIFORM DIMS	0.208	MULTIDIM FS	Panel	16.64	49.6	18	5.3	#2
508	R1A	0.208	R1A FS	Panel	19.01	8.1	18	0.5	#0
509	R1B	0.208	R1A FS	Panel	17.23	7.7	18	0.4	#0
510	R1C	0.208	DPB22 FS RIC-D	Panel	5.90	3.4	18	0.1	#0
511	R1D	0.208	DPB22 FS RIC-D	Panel	5.66	3.3	18	0.1	#0
512	R2A	0.208	FSW R2A	Panel	6.77	4.1	18	0.2	#0
513	R2B	0.208	DPB21 FS R2B-3D	Panel	6.35	3.6	18	0.1	#0
514	R3A	0.208	FSW R3A	Panel	18.95	8.1	18	0.5	#0
515	R3B	0.208	DPB21 FS R2B-3D	Panel	5.75	3.3	18	0.1	#0
516	R3C	0.208	DPB21 FS R3C-E	Panel	6.35	3.6	18	0.1	#0
517	R3D	0.208	DPB21 FS R2B-3D	Panel	5.75	3.3	18	0.1	#0
518	R3E	0.208	DPB21 FS R3C-E	Panel	5.93	3.4	18	0.1	#0
519	R4A	0.208	FSW R4A	Panel	18.90	8.1	18	0.5	#0
520	R4B	0.208	FSW R4B/C	Panel	17.80	7.2	18	0.4	#0
521	R4C	0.208	FSW R4B/C	Panel	17.80	7.2	18	0.4	#0
522	R5A	0.208	FSW R5A	Panel	18.89	8.1	18	0.5	#0
523	R5B	0.208	DP4C FS L5B	Panel	4.71	7.4	18	0.4	#0
524	R5C	0.208	DP-61 FS R5C-D	Panel	5.26	3.1	18	0.1	#0
525	R5D	0.208	DP-61 FS R5C-D	Panel	4.93	3	18	0.1	#0
526	R5E	0.208	DP-61 FS R5E-F-G	Panel	5.26	3.1	18	0.1	#0
527	R5F	0.208	DP-61 FS R5E-F-G	Panel	4.93	3	18	0.1	#0
528	R5G	0.208	DP-61 FS R5E-F-G	Panel	4.78	3	18	0.1	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
529	R6A	0.208	FSW R6A	Panel	17.46	7.8	18	0.4	#0
530	R6B	0.208	FSW R6B	Panel	11.69	6	18	0.3	#0
531	RB1A	0.208	FSW RB1A	Panel	17.77	7.9	18	0.4	#0
532	RB1C KITCHEN	0.208	DPB22 FS RB1C-D	Panel	7.19	3.9	18	0.2	#0
533	RB1D KITCHEN	0.208	DPB22 FS RB1C-D	Panel	7.19	3.9	18	0.2	#0
534	RB2A	0.208	FSW RB2A	Panel	17.82	7.9	18	0.4	#0
535	RB2B	0.208	FSW RB2A	Panel	16.22	7.4	18	0.4	#0
536	RG1A	0.208	FSW RG1A	Panel	6.12	3.8	18	0.2	#0
537	RT2A	0.208	FSW BUSD RT02XFR	Panel	4.74	7.4	18	0.4	#0
538	RT2B	0.208	FSW BUSE LT02XFR	Panel	4.74	7.4	18	0.4	#0
539	RT2C	0.208	FSW BUSD RT02XFR	Panel	4.30	7.1	18	0.4	#0
540	RT2D	0.208	FSW BUSE LT02XFR	Panel	4.30	7	18	0.4	#0
541	RT3A	0.208	FSW RT3A	Panel	18.83	8.1	18	0.5	#0
542	RT3B	0.208	FSW BUSE RT3B	Panel	4.76	7.4	18	0.4	#0
543	RT3C	0.208	FSW RT3A	Panel	17.09	7.7	18	0.4	#0
544	RT3D	0.208	FSW BUSE RT3B	Panel	4.32	7.1	18	0.4	#0
545	RT4A	0.208	FSW BUSD RT04XFR	Panel	4.73	7.4	18	0.4	#0
546	RT4B	0.208	FSW BUSE LT04XFR	Panel	4.72	7.4	18	0.4	#0
547	RT4C	0.208	FSW BUSD RT04XFR	Panel	4.29	7	18	0.4	#0
548	RT4D	0.208	FSW BUSE LT04XFR	Panel	4.29	7	18	0.4	#0
549	RT5A	0.208	FSW RT5A	Panel	18.78	8.1	18	0.5	#0
550	RT5B	0.208	FSW BUSE RT5B	Panel	4.75	7.4	18	0.4	#0
551	RT5C	0.208	FSW RT5A	Panel	17.04	7.7	18	0.4	#0
552	RT5D	0.208	FSW BUSE RT5B	Panel	4.30	7	18	0.4	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
553	RT6A	0.208	FSW BUSD RT06XFR	Panel	4.72	7.4	18	0.4	#0
554	RT6B	0.208	FSW BUSE LT06XFR	Panel	4.71	7.4	18	0.4	#0
555	RT6C	0.208	FSW BUSD RT06XFR	Panel	4.28	7	18	0.4	#0
556	RT6D	0.208	FSW BUSE LT06XFR	Panel	4.28	7	18	0.4	#0
557	RT7A	0.208	FSW RT7A	Panel	18.72	8.1	18	0.5	#0
558	RT7B	0.208	FSW BUSE RT7B	Panel	4.73	7.4	18	0.4	#0
559	RT7C	0.208	FSW RT7A	Panel	17.00	7.7	18	0.4	#0
560	RT7D	0.208	FSW BUSE RT7B	Panel	4.29	7	18	0.4	#0
561	RT8A	0.208	FSW BUSD RT08XFR	Panel	4.70	7.4	18	0.4	#0
562	RT8B	0.208	FSW BUSE LT08XFR	Panel	4.70	7.4	18	0.4	#0
563	RT8C	0.208	FSW BUSD RT08XFR	Panel	4.27	7	18	0.4	#0
564	RT8D	0.208	FSW BUSE LT08XFR	Panel	4.26	7	18	0.4	#0
565	RT9A	0.208	FSW RT09A	Panel	18.67	8.1	18	0.5	#0
566	RT9B	0.208	FSW BUSE RT9B	Panel	4.72	7.4	18	0.4	#0
567	RT9C	0.208	FSW RT09A	Panel	16.95	7.7	18	0.4	#0
568	RT9D	0.208	FSW BUSE RT9B	Panel	4.28	7	18	0.4	#0
569	RT10A	0.208	FSW BUSD RT10XFR	Panel	4.69	7.4	18	0.4	#0
570	RT10B	0.208	FSW BUSE LT10XFR	Panel	4.68	7.4	18	0.4	#0
571	RT10C	0.208	FSW BUSD RT10XFR	Panel	4.26	7	18	0.4	#0
572	RT10D	0.208	FSW BUSE LT10XFR	Panel	4.25	7	18	0.4	#0
573	RT11A	0.208	FSW RT11A	Panel	18.61	8.1	18	0.5	#0
574	RT11B	0.208	FSW BUSE RT11B	Panel	4.70	7.4	18	0.4	#0
575	RT11C	0.208	FSW RT11A	Panel	16.90	7.6	18	0.4	#0
576	RT11D	0.208	FSW BUSE RT11B	Panel	4.27	7	18	0.4	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
577	RT12A	0.208	FSW BUSG RT12XFR	Panel	4.92	7.4	18	0.4	#0
578	RT12B	0.208	FSW BUSF LT12XFR	Panel	4.88	7.4	18	0.4	#0
579	RT12C	0.208	FSW BUSG RT12XFR	Panel	4.45	7.2	18	0.4	#0
580	RT12D	0.208	FSW BUSF LT12XFR	Panel	4.41	7.2	18	0.4	#0
581	RT13A	0.208	FSW RT13A	Panel	19.62	8.2	18	0.5	#0
582	RT13B	0.208	FSW BUSF RT13B	Panel	4.44	7.2	18	0.4	#0
583	RT13C	0.208	FSW RT13A	Panel	17.95	8	18	0.5	#0
584	RT13D	0.208	FSW BUSF RT13B	Panel	3.67	6.3	18	0.3	#0
585	RT14A	0.208	RT14A FS	Panel	19.63	8.2	18	0.5	#0
586	RT14B	0.208	FSW BUSF RT14XFR	Panel	4.93	7.4	18	0.4	#0
587	RT14C	0.208	RT14A FS	Panel	17.72	7.9	18	0.4	#0
588	RT14D	0.208	FSW BUSF RT14XFR	Panel	4.45	7.2	18	0.4	#0
589	RT15A	0.208	FSW BUSG LT15A	Panel	4.95	7.4	18	0.4	#0
590	RT15B	0.208	FSW RT15B	Panel	19.63	8.2	18	0.5	#0
591	RT15C	0.208	FSW BUSG LT15A	Panel	4.46	7.2	18	0.4	#0
592	RT15D	0.208	FSW RT15B	Panel	17.72	7.9	18	0.4	#0
593	RT16A	0.208	FSW BUSG RT16XFR	Panel	4.96	7.4	18	0.4	#0
594	RT16B	0.208	FSW RT16B	Panel	19.67	8.2	18	0.5	#0
595	RT16C	0.208	FSW BUSG RT16XFR	Panel	4.47	7.2	18	0.4	#0
596	RT16D	0.208	FSW RT16B	Panel	17.76	7.9	18	0.4	#0
597	RT17A	0.208	FSW RT17A	Panel	19.74	8.2	18	0.5	#0
598	RT17B	0.208	FSW BUSF RT17B	Panel	5.03	7.4	18	0.4	#0
599	RT17C	0.208	FSW RT17A	Panel	17.81	7.9	18	0.4	#0
600	RT17D	0.208	FSW BUSF RT17B	Panel	4.10	6.8	18	0.4	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
601	RT18A	0.208	FSW BUSG RT18XFR	Panel	4.97	7.4	18	0.4	#0
602	RT18B	0.208	FSW RT18B	Panel	19.72	8.2	18	0.5	#0
603	RT18C	0.208	FSW BUSG RT18XFR	Panel	4.49	7.2	18	0.4	#0
604	RT18D	0.208	FSW RT18B	Panel	17.80	7.9	18	0.4	#0
605	RT18E	0.208	FSW BUSG RT18XFR	Panel	3.70	6.3	18	0.3	#0
606	RT19A	0.208	FSW RT19A	Panel	19.78	8.2	18	0.5	#0
607	RT19B	0.208	FSW BUSF RT19B	Panel	4.97	7.4	18	0.4	#0
608	RT19C	0.208	FSW RT19A	Panel	17.84	7.9	18	0.4	#0
609	RT19D	0.208	FSW BUSF RT19B	Panel	4.48	7.2	18	0.4	#0
610	RT19E	0.208	FSW RT19A	Panel	15.60	7.2	18	0.4	#0
611	RT19F	0.208	FSW BUSF RT19B	Panel	3.69	6.3	18	0.3	#0
612	RT1A	0.208	FSW RT1A	Panel	18.90	8.1	18	0.5	#0
613	RT1B	0.208	BUS-E FS RT1B	Panel	4.78	7.4	18	0.4	#0
614	RT1C	0.208	FSW RT1A	Panel	17.17	7.7	18	0.4	#0
615	RT1D	0.208	BUS-E FS RT1B	Panel	4.33	7.1	18	0.4	#0
616	RT20A	0.208	FSW BUSG RT20XFR	Panel	4.99	7.4	18	0.4	#0
617	RT20B	0.208	FSW RT20B	Panel	19.78	8.2	18	0.5	#0
618	RT20C	0.208	FSW BUSG RT20XFR	Panel	4.50	7.3	18	0.4	#0
619	RT20D	0.208	FSW RT20B	Panel	17.85	7.9	18	0.4	#0
620	RT20E	0.208	FSW BUSG RT20XFR	Panel	3.71	6.4	18	0.3	#0
621	RT20F	0.208	FSW BUSG RT20XFR	Panel	3.71	6.4	18	0.3	#0
622	RT21A	0.208	FSW RT21A	Panel	19.82	8.2	18	0.5	#0
623	RT21B	0.208	FSW BUSF RT21B	Panel	4.98	7.4	18	0.4	#0
624	RT21C	0.208	FSW RT21A	Panel	17.88	7.9	18	0.4	#0

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Item	Arc Fault Bus Name	Arc Fault Bus kV	Upstream Trip Device Name	Equipment Type	Bolted Fault (kA)	Est Arc Flash Boundary (inches)	Working Distance (inches)	Incident Energy (cal/cm2)	Required Clothing Class
625	RT21D	0.208	FSW BUSF RT21B	Panel	4.49	7.2	18	0.4	#0
626	RT21E	0.208	FSW RT21E	Panel	11.13	5.2	18	0.2	#0
627	RT21F	0.208	FSW RT21E	Panel	9.79	4.8	18	0.2	#0
628	RT21G	0.208	FSW RT21G	Panel	13.11	5.9	18	0.3	#0
629	RT22A	0.208	FSW RT22A	Panel	20.00	8.2	18	0.5	#0
630	RT22B	0.208	FSW RT22B	Panel	19.83	8.2	18	0.5	#0
631	RT22C	0.208	FSW RT22A	Panel	18.03	8	18	0.5	#0
632	RT22D	0.208	FSW RT22B	Panel	17.90	7.9	18	0.4	#0
633	RT22F	0.208	FSW RT22B	Panel	14.76	7	18	0.4	#0
634	RT23A	0.208	FSW RT23A	Panel	17.90	7.9	18	0.4	#0
635	RT23B	0.208	FSW BUSF RT23B	Panel	5.00	7.4	18	0.4	#0
636	RT23C	0.208	FSW RT23A	Panel	16.21	7.4	18	0.4	#0
637	RT23D	0.208	FSW BUSF RT23B	Panel	4.07	6.8	18	0.4	#0
638	RT24A	0.208	FSW RT24A	Panel	20.06	8.2	18	0.5	#0
639	RT24B	0.208	FSW RT24B	Panel	19.90	8.2	18	0.5	#0
640	RT24C	0.208	FSW RT24A	Panel	18.09	8	18	0.5	#0
641	RT24D	0.208	FSW RT24B	Panel	17.95	8	18	0.5	#0
642	RT24E	0.208	FSW RT24A	Panel	14.90	7	18	0.4	#0
643	RT24F	0.208	FSW RT24B	Panel	14.80	7	18	0.4	#0
644	RT25A	0.208	FSW RT25A	Panel	19.33	8.2	18	0.5	#0
645	RT25B	0.208	DPT26A FS RT25B	Panel	5.09	7.5	18	0.4	#0
646	RT26A	0.208	FSW RT26A	Panel	20.23	8.2	18	0.5	#0
647	STAGE PNL	0.208	STAGE DISC	Panel	7.59	85	18	11.8	#3
648	STUDIO DIM RACK1	0.208	DP-41 FS DIM 1	Panel	25.54	8.2	18	0.5	#0

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649	STUDIO DIM	0.208	DP-41 FS DIM 1	Panel	24.45	8	18	0.5	#0
650	STUDIO DIM RACK2	0.208	DP-41 FS DIM 2	Panel	25.54	8.2	18	0.5	#0
651	STUDIO DIM RACK3	0.208	DP-61 FS R5C-D	Panel	4.60	2.9	18	0.1	#0
652	UPS (T16)	0.48	FSW BUSC UPS	Panel	15.24	7.1	18	0.4	#0

Table 130.7(C)(10) Protective Clothing and Personal Protective Equipment (PPE) Matrix

Protective Clothing and Equipment	Protective Systems for Hazard/Risk Category					
Hazard/Risk Category Number	**–1 (Note 3)**	**0**	**1**	**2**	**3**	**4**
Non-melting (according to ASTM F 1506-00) or Untreated Natural Fiber						
a. T-shirt (short-sleeve)	X			X	X	X
b. Shirt (long-sleeve)		X				
c. Pants (long)	X	X	X (Note 4)	X (Note 6)	X	X
FR Clothing (Note 1)						
a. Long-sleeve shirt			X	X	X (Note 9)	X
b. Pants			X (Note 4)	X (Note 6)	X (Note 9)	X
c. Coverall			(Note 5)	(Note 7)	X (Note 9)	(Note 5)
d. Jacket, parka, or rainwear			AN	AN	AN	AN
FR Protective Equipment						
a. Flash suit jacket (multilayer)						X
b. Flash suit pants (multilayer)						X
c. Head protection						
1. Hard hat			X	X	X	X
2. FR hard hat liner					AR	AR
d. Eye protection		—	—	—	—	—
1. Safety glasses	X	X	X	AL	AL	AL
2. Safety goggles				AL	AL	AL
e. Face and head area protection		—	—	—	—	—
1. Arc-rated face shield, or flash suit hood				X (Note 8)		
2. Flash suit hood					X	X
3. Hearing protection (ear canal inserts)				X (Note 8)	X	X
f. Hand protection			—	—	—	—
Leather gloves (Note 2)			AN	X	X	X
g. Foot protection						
Leather work shoes			AN	X	X	X

AN = As needed
AL = Select one in group
AR = As required
X = Minimum required

Notes:

1. See Table 130.7(C)(11). Arc rating for a garment is expressed in cal/cm^2.
2. If voltage-rated gloves are required, the leather protectors worn external to the rubber gloves satisfy this requirement.
3. Hazard/Risk Category Number "–1" is only defined if determined by Notes 3 or 6 of Table 130.7(C)(9)(a).
4. Regular weight (minimum 12 oz/yd^2 fabric weight), untreated, denim cotton blue jeans are acceptable in lieu of FR pants. The FR pants used for Hazard/Risk Category 1 shall have a minimum arc rating of 4.
5. Alternate is to use FR coveralls (minimum arc rating of 4) instead of FR shirt and FR pants.
6. If the FR pants have a minimum arc rating of 8, long pants of non-melting or untreated natural fiber are not required beneath the FR pants.
7. Alternate is to use FR coveralls (minimum arc rating of 4) over non-melting or untreated natural fiber pants and T-shirt.
8. A faceshield with a minimum arc rating of 8, with wrap-around guarding to protect not only the face, but also the forehead, ears, and neck (or, alternatively, a flash suit hood), is required.
9. Alternate is to use two sets of FR coveralls (the inner with a minimum arc rating of 4 and outer coverall with a minimum arc rating of 5) over non-melting or untreated natural fiber clothing, instead of FR coveralls over FR shirt and FR pants over non-melting or untreated natural fiber clothing.