

Metropolitan Washington Airports Authority
PROCUREMENT AND CONTRACTS DEPT.
AMENDMENT OF SOLICITATION

Metropolitan Washington Airports Authority Procurement and Contracts Dept., MA-29 2733 Crystal Drive Arlington, VA 22202	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">1A. AMENDMENT OF SOLICITATION NO.</td> <td style="padding: 2px;">1B. DATED</td> </tr> <tr> <td style="padding: 2px;">IFB-19-13298</td> <td style="padding: 2px;">July 23, 2019</td> </tr> <tr> <td style="padding: 2px;">2A. AMENDMENT NO.</td> <td style="padding: 2px;">2B. EFFECTIVE DATE</td> </tr> <tr> <td style="padding: 2px;">Two (002)</td> <td style="padding: 2px;">September 3, 2019</td> </tr> </table>	1A. AMENDMENT OF SOLICITATION NO.	1B. DATED	IFB-19-13298	July 23, 2019	2A. AMENDMENT NO.	2B. EFFECTIVE DATE	Two (002)	September 3, 2019	
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IFB-19-13298	July 23, 2019									
2A. AMENDMENT NO.	2B. EFFECTIVE DATE									
Two (002)	September 3, 2019									
The solicitation identified in Block 1A is amended as set forth in Block 3. Hour and date specified for receipt of offers <input checked="" type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) by completing Block 4 and returning copy of the amendment; (b) by acknowledging receipt of this amendment on the Solicitation Offer and Award Sheet, Block 13. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.										
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Except as provided herein, all terms and conditions of the document referenced in Block 1A, as heretofore changed, remain unchanged and in full force and effect.										
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4B. SIGNATURE										
4C. DATE										

Metropolitan Washington Airports Authority
PROCUREMENT AND CONTRACTS DEPT.
SOLICITATION OFFER AND AWARD AMENDMENT TWO

Metropolitan Washington Airports Authority Procurement and Contracts Dept., MA-29 2733 Crystal Drive Arlington, VA 22202		1. FOR INFORMATION CALL NAME: Cedric Kinlow, CPSM, CPPB TELEPHONE NUMBER: <i>(No Collect Calls)</i> 703-417-8660	
2. SOLICITATION NUMBER	3. TYPE OF SOLICITATION	4. DATE ISSUED	
IFB-19-13298	INVITATION FOR BIDS (IFB)	July 23, 2019	
SOLICITATION			
5. DESCRIPTION OF SUPPLIES, SERVICES, CONSTRUCTION			
The Contractor shall test low and medium voltage circuit breaker relays at Washington Dulles International airport in accordance with the attached Statement of Work.			
The Period of Performance will be 365 days from the effective date of the contract plus five one-year options to be executed at the discretion of the Airports Authority.			
All questions concerning this solicitation must be submitted by 3:00 PM August 7, 2019 via the Airports Authority's website at: http://www.mwaa.com/business/current-contracting-opportunities Note: This solicitation has a 0% LDBE participation requirement.			
6. BOND REQUIREMENTS			
BID BOND: None	PAYMENT BOND: None	PERFORMANCE BOND: None	
7. PRE-PROPOSAL CONFERENCE			
None			
8. DEADLINE FOR OFFER SUBMISSION			
Sealed bids in original and 2 copies to perform the work or to furnish the supplies or services in the Schedule are due at the place specified at the top of this form by 2:00 P.M. local time, September 19, 2019 . Sealed envelopes containing bids shall be marked to show the bidder's name and address, the solicitation number, and the date and time the bids are due. Bids will be publicly opened at that time.			
OFFER (Must be fully completed by offeror)			
9. NAME AND ADDRESS OF OFFEROR (Include Zip Code)		11. REMITTANCE ADDRESS (If different than Item9)	
		12A. E-MAIL ADDRESS	
10A. TELEPHONE NUMBER	10B. FAX NUMBER	12B. COMPANY INTERNET WEBSITE	
13. ACKNOWLEDGMENT OF AMENDMENTS (This offeror acknowledges receipt of amendments to this solicitation - give number and date of each)		14A. NAME & TITLE OF PERSON AUTHORIZED TO SIGN OFFER	
AMENDMENT NO.			
DATE			
		14B. SIGNATURE	14C. DATE
AWARD (To be completed by MWAA)			
15. ACCEPTED AS TO ITEMS NUMBERED		20A. NAME OF CONTRACTING OFFICER	
All Items		Cedric Kinlow, CPSM, CPPB	
16. CONTRACT NUMBER	17. AMOUNT	20B. SIGNATURE OF CONTRACTING OFFICER	
18. DATE OF AWARD	19. CONTRACT EFFECTIVE DATE		

ATTACHMENT 01

BREAKER/RELAY ELECTRICAL TESTING SERVICES

STATEMENT OF WORK - AMENDMENT TWO

BREAKER/RELAY ELECTRICAL TESTING SERVICES STATEMENT OF WORK - AMENDMENT TWO

I. GENERAL REQUIREMENTS

The following work shall be done by a fully qualified, independent electrical testing organization in good standing and as a full-member of the International Electrical Testing Association (NETA). All recommendations, testing procedures and evaluations must be done in accordance with the latest NETA Maintenance Testing Specifications for electrical power and distribution systems.

The lead on-site technician must have a minimum of 5 years' experience in this type of work. 100% of all work must be between the hours of 12:05 AM and 5:00 AM. Outages will be planned and coordinated by the Metropolitan Washington Airports Authority (Airports Authority) staff. Airports Authority staff will escort testing organization as needed to each site.

II. LOW VOLTAGE (480V) BREAKER/RELAY ELECTRICAL TESTING

1. Perform minimum pickup voltage tests on trip and close coils, record data.
2. Verify trip, close, trip free and anti-pump functions.
3. Trip circuit breaker by operation of each protective device.
4. Perform insulation-resistance tests on all control wiring with respect to ground. Do not exceed manufacturer's test voltages. For units with solid-state components, follow manufacturer's recommendations.
5. Review trip settings and document any discrepancies between the owner furnished coordination study and the field units. Include such findings in final report and provide recommendations to eliminate such discrepancy.
6. Determine Long-time pickup and delay by means of primary Injection.
7. Determine short-time pickup and delay by means of primary injection.
8. Determine Ground-Fault pickup and delay by means of primary injection.
9. Determine Instantaneous pickup by means of primary injection.
10. Verify operation of charging mechanism on all protective devices.

III. MEDIUM VOLTAGE BREAKER/RELAY ELECTRICAL TESTING SERVICES

1. Perform minimum pickup voltage tests on trip and close coils, record data.
2. Verify trip, close, trip free and anti-pump functions.
3. Trip circuit breaker by operation of each protective device.
4. Perform vacuum bottle integrity test across each vacuum bottle with the breaker in the open position in accordance with the manufacturer's published data. Do not perform this test unless the contact displacement of each interrupter is within manufacturer's tolerance. **Do not exceed manufacturer's requirements.**
5. Perform insulation-resistance tests on all control wiring with respect to ground. Do not exceed manufacturer's test voltages. For units with solid-state components, follow manufacturer's recommendations.
6. Review trip settings and document any discrepancies between the owner furnished coordination study and the field units. Include such findings in final report and provide recommendations to eliminate such discrepancy.
7. By means of secondary current injection determine proper operation of all functions of each protective relay.
8. Verify operation of charging mechanism on all protective devices.

IV. REPORTING REQUIREMENTS PER BREAKER/RELAY

1. Document all findings and any adjustments made on the final report.
2. Identify failures at the time of test.
3. Identify areas of concern and/or failed meters under a separate tab.
4. Provide recommendations to correct deficiencies in writing.
5. Provide a copy of the field test result the same night as tested.
6. Submit final test results in paper and electronic format within five (5) business days of job completion and prior to invoice submission. Electronic copies may be delivered in pdf format.
7. Adjustments, failures or abnormalities should be noted under an independent tab within the report.
8. Provide all test values in paper and electronic format. Provide two (2) bound paper reports. Electronic copies may be delivered in pdf format.

APPENDIX A
LOW VOLTAGE (480V) BREAKER/RELAY LIST

Washington Dulles International Airport
Protective Relay Testing

LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL	
<i>Low Voltage Breaker Relays</i>					
1	T1	Main 1	4000	Siemens Type RL	Static trip 111
2	T1	MCC 1D	800	Siemens Type RL	Static trip 111
3	T1	1PGC	800	Siemens Type RL	Static trip 111
4	T1	1PGA	800	Siemens Type RL	Static trip 111
5	T1	Spare	1200	Siemens Type RL	Static trip 111
6	T1	MER-3	800	Siemens Type RL	Static trip 111
7	T1	Tie	2000	Siemens Type RL	Static trip 111
8	T1	Main 2	4000	Siemens Type RL	Static trip 111
9	T1	1LTA&B	600	Siemens Type RL	Static trip 111
10	T1	MER-3	800	Siemens Type RL	Static trip 111
11	T1	PBD IPG-Z	800	Siemens Type RL	Static trip 111
12	T1	IPGB	800	Siemens Type RL	Static trip 111
13	T1	West end Kiosk	800	Siemens Type RL	Static trip 111
14	T1	Depart Level W Center	800	Siemens Type RL	Static trip 111
15	T2	Main 1	4000	Siemens Type RL	Static trip 111
16	T2	Mist System West	1600	Siemens Type RL	Static trip 111
17	T2	PNL PS-1A	800	Siemens Type RL	Static trip 111
18	T2	PNL 2 DGA	300	Siemens Type RL	Static trip 111
19	T2	Spare	800	Siemens Type RL	Static trip 111
20	T2	Tie	4000	Siemens Type RL	Static trip 111
21	T2	Main 2	4000	Siemens Type RL	Static trip 111
22	T2	Mist System 2 West	1600	Siemens Type RL	Static trip 111
23	T2	MCC-2A	800	Siemens Type RL	Static trip 111
24	T2	PNL PS-1B	800	Siemens Type RL	Static trip 111
25	T2	PNL 2DBA	1600	Siemens Type RL	Static trip 111
26	T3	Main 1	4000	Siemens Type RL	Static trip 111
27	T3	MER 4	800	Siemens Type RL	Static trip 111
28	T3	3PGH	1200	Siemens Type RL	Static trip 111
29	T3	MER5	800	Siemens Type RL	Static trip 111
30	T3	Spare	1200	Siemens Type RL	Static trip 111
31	T3	3PGA	600	Siemens Type RL	Static trip 111
32	T3	3PGC	600	Siemens Type RL	Static trip 111
33	T3	Tie	2000	Siemens Type RL	Static trip 111
34	T3	Main 2	4000	Siemens Type RL	Static trip 111
35	T3	MCC-3C	800	Siemens Type RL	Static trip 111
36	T3	3PGB	600	Siemens Type RL	Static trip 111
37	T3	3PCA	800	Siemens Type RL	Static trip 111
38	T3	3PCC	800	Siemens Type RL	Static trip 111
39	T3	Spare	800	Siemens Type RL	Static trip 111
40	T4	Main 1	4000	Cutler Hammer	Digitrip 520
41	T4	F-2G	600	Cutler Hammer	Digitrip 520
42	T4	F-3A Mist System Pumps	2000	Cutler Hammer	Digitrip 520
43	T4	F-3B PNLPS-2A	1000	Cutler Hammer	Digitrip 520
44	T4	F3C Switchboard 4DBA	1600	Cutler Hammer	Digitrip 520
45	T4	4LGD	1200	Cutler Hammer	Digitrip 520
46	T4	Tie	4000	Cutler Hammer	Digitrip 520
47	T4	Main 2	4000	Cutler Hammer	Digitrip 520
48	T4	F2A PNL PS-2B	1000	Cutler Hammer	Digitrip 520
49	T4	F2B Mist System Pumps	2000	Cutler Hammer	Digitrip 520
50	T4	4PGB	1200	Cutler Hammer	Digitrip 520
51	T4	F2D MCC4A	800	Cutler Hammer	Digitrip 520

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
52	T6	Main 1	4000	Cutler Hammer DS II	Digitrip RMS 510
53	T6	Feeder A4	800	Cutler Hammer DS II	Digitrip RMS 510
54	T6	Feeder A6	800	Cutler Hammer DS II	Digitrip RMS 510
55	T6	PDP-K	1600	Cutler Hammer DS II	Digitrip RMS 510
56	T6	PDP-G	1600	Cutler Hammer DS II	Digitrip RMS 510
57	T6	PDP-E	1600	Cutler Hammer DS II	Digitrip RMS 510
58	T6	MCC6A	800	Cutler Hammer DS II	Digitrip RMS 510
59	T6	Feeder A11	800	Cutler Hammer DS II	Digitrip RMS 510
60	T6	Feeder A12	800	Cutler Hammer DS II	Digitrip RMS 510
61	T6	Tie	2000	Cutler Hammer DS II	Digitrip RMS 510
62	T6	Main 2	4000	Cutler Hammer DS II	Digitrip RMS 510
63	T6	MCC6B	400	Cutler Hammer DS II	Digitrip RMS 510
64	T6	PDP-H	1200	Cutler Hammer DS II	Digitrip RMS 510
65	T6	PDP-L	1600	Cutler Hammer DS II	Digitrip RMS 510
66	T6	A Gates	800	Cutler Hammer DS II	Digitrip RMS 510
67	T6	PDP-F	1000	Cutler Hammer DS II	Digitrip RMS 510
68	T6	Spare	600	Cutler Hammer DS II	Digitrip RMS 510
69	T6	DSL II-308	800	Cutler Hammer DS II	Digitrip RMS 510
70	T7	Main 1	4000	Siemens Type RL	Static trip 111
71	T7	Spare	1600	Siemens Type RL	Static trip 111
72	T7	Spare	1600	Siemens Type RL	Static trip 111
73	T7	E7DBA	1600	Siemens Type RL	Static trip 111
74	T7	7MCCBA/ 7MCCBB	800	Siemens Type RL	Static trip 111
75	T7	7DBA	800	Siemens Type RL	Static trip 111
76	T7	Spare	1600	Siemens Type RL	Static trip 111
77	T7	Spare	800	Siemens Type RL	Static trip 111
78	T7	Spare	300	Siemens Type RL	Static trip 111
79	T7	Tie	4000	Siemens Type RL	Static trip 111
80	T7	Main 2	4000	Siemens Type RL	Static trip 111
81	T7	Spare	800	Siemens Type RL	Static trip 111
82	T7	Future 7MCC West Tunnel TV6	800	Siemens Type RL	Static trip 111
83	T7	7DBC	800	Siemens Type RL	Static trip 111
84	T7	7DBB	800	Siemens Type RL	Static trip 111
85	T7	Spare	300	Siemens Type RL	Static trip 111
86	T8	Main 1	4000	Siemens Type RL	Static trip 111
87	T8	8MCCA-B	800	Siemens Type RL	Static trip 111
88	T8	Spare	400	Siemens Type RL	Static trip 111
89	T8	E8DBA	300	Siemens Type RL	Static trip 111
90	T8	Spare	800	Siemens Type RL	Static trip 111
91	T8	Spare	1200	Siemens Type RL	Static trip 111
92	T8	8DBC	1200	Siemens Type RL	Static trip 111
93	T8	Spare	1600	Siemens Type RL	Static trip 111
94	T8	Main 2	4000	Siemens Type RL	Static trip 111
95	T8	Spare	1200	Siemens Type RL	Static trip 111
96	T8	8DBA	1200	Siemens Type RL	Static trip 111
97	T8	Spare	800	Siemens Type RL	Static trip 111
98	T8	Spare	800	Siemens Type RL	Static trip 111
99	T8	8DBB	1200	Siemens Type RL	Static trip 111
100	T8	Tie	4000	Siemens Type RL	Static trip 111
101	T9	Main 1	4000	Siemens Type RL	Static trip 111
102	T9	9DBA	800	Siemens Type RL	Static trip 111

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
103	T9	Spare	1200	Siemens Type RL	Static trip 111
104	T9	9WDBA	1600	Siemens Type RL	Static trip 111
105	T9	Spare	800	Siemens Type RL	Static trip 111
106	T9	S9DBA	800	Siemens Type RL	Static trip 111
107	T9	9PTA	1200	Siemens Type RL	Static trip 111
108	T9	Spare	800	Siemens Type RL	Static trip 111
109	T9	9DBC TML	1600	Siemens Type RL	Static trip 111
110	T9	Tie	4000	Siemens Type RL	Static trip 111
111	T9	Main 2	4000	Siemens Type RL	Static trip 111
112	T9	Spare	800	Siemens Type RL	Static trip 111
113	T9	9DGC	800	Siemens Type RL	Static trip 111
114	T9	9LBB	800	Siemens Type RL	Static trip 111
115	T9	9MCC	800	Siemens Type RL	Static trip 111
116	T9	9DBC	1600	Siemens Type RL	Static trip 111
117	T9	Spare	800	Siemens Type RL	Static trip 111
118	T9	Spare	800	Siemens Type RL	Static trip 111
119	T9	Spare	800	Siemens Type RL	Static trip 111
120	T10	Main 1	4000	Siemens WLL3A340	ETU 745
121	T10	SPARE	1600	WLL2A316	ETU 745
122	T10	10DBA	600	WLL2A316	ETU 745
123	T10	101PDP-A1	1600	WLL2A316	ETU 745
124	T10	10PDP-A2	800	WLL2A316	ETU 745
125	T10	10PDP-A3	800	WLL2A316	ETU 745
126	T10	TIE	4000	Siemens WLL3A340	ETU 745
127	T10	10PDP-B1	1600	WLL2A316	ETU 745
128	T10	10PDP-B2	1000	WLL2A316	ETU 745
129	T10	10PDP-B3	800	WLL2A316	ETU 745
130	T10	SPARE	600	WLL2A316	ETU 745
131	T10	10DBB	600	WLL2A316	ETU 745
132	T10	MAIN 2	4000	Siemens WLL3A340	ETU 745
133	T11	Main 1	4000	Siemens WLL3A340	ETU 745
134	T11	11DBA	600	Siemens WLL2A316	ETU 745
135	T11	Spare	600	Siemens WLL2A316	ETU 745
136	T11	11PDP-A(1)	1600	Siemens WLL2A316	ETU 745
137	T11	11PDP-A(2)	1600	Siemens WLL2A316	ETU 745
138	T11	Spare	600	Siemens WLL2A316	ETU 745
139	T11	TIE	4000	Siemens WLL3A340	ETU 745
140	T11	11PDP-B(1)	1600	Siemens WLL2A316	ETU 745
141	T11	11PDP-B(2)	800	Siemens WLL2A316	ETU 745
142	T11	Spare	600	Siemens WLL2A316	ETU 745
143	T11	Spare	600	Siemens WLL2A316	ETU 745
144	T11	Spare	600	Siemens WLL2A316	ETU 745
145	T11	MAIN 2	4000	Siemens WLL3A340	ETU 745
146	T12	Main 1	4000	Siemens WLL3A340	ETU 745
147	T12	12PDP-A(4)	800	Siemens WLL2A316	ETU 745
148	T12	4DMUA	400	Siemens WLL2A316	ETU 745
149	T12	12DPA	1000	Siemens WLL2A316	ETU 745
150	T12	Spare LO/ No TO, Ennis Electric	1600	Siemens WLL2A316	ETU 745
151	T12	TIE	4000	Siemens WLL3A340	ETU 745
152	T12	12DPB	1000	Siemens WLL2A316	ETU 745
153	T12	MDP2	400	Siemens WLL2A316	ETU 745
154	T12	12PDP-B(4)	1000	Siemens WLL2A316	ETU 745

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
155	T12	12PDP-B(5)	800	Siemens WLL2A316	ETU 745
156	T12	MAIN 2	4000	Siemens WLL3A340	ETU 745
157	T13	Main 1	4000	Siemens WLH3A340	ETU 745
158	T13	13DBB	800	WLS2A316	ETU 745
159	T13	13MCCA	800	WLS2A316	ETU 745
160	T13	13DBA	1200	WLS2A316	ETU 745
161	T13	Spare	1200	WLS2A316	ETU 745
162	T13	13PDP-A	800	WLS2A316	ETU 745
163	T13	Tie	4000	WLH3A340	ETU 745
164	T13	Main 2	4000	WLH3A340	ETU 745
165	T13	13PDP-B	800	WLS2A316	ETU 745
166	T13	Spare	800	WLS2A316	ETU 745
167	T13	13DBD	1200	WLS2A316	ETU 745
168	T13	Spare	800	WLS2A316	ETU 745
169	T13	13DISC	1200	WLS2A316	ETU 745
170	SS1	Main 1	3200	Cutler Hammer	Digitrip 510
171	SS1	Fire Pump	1600	Cutler Hammer	Digitrip 510
172	SS1	IAPDA	1600	Cutler Hammer	Digitrip 510
173	SS1	Spare	1600	Cutler Hammer	Digitrip 510
174	SS1	IAPDB	1600	Cutler Hammer	Digitrip 510
175	SS1	Tie	3200	Cutler Hammer	Digitrip 510
176	SS1	Spare	1600	Cutler Hammer	Digitrip 510
177	SS1	IAPDC	1600	Cutler Hammer	Digitrip 510
178	SS1	IAPDD	1600	Cutler Hammer	Digitrip 510
179	SS1	Spare	1600	Cutler Hammer	Digitrip 510
180	SS2	Main 1	3200	CH Westinghouse DSII 632	Digitrip RMS 510
181	SS2	Main 2	3200	CH Westinghouse DSII 632	Digitrip RMS 510
182	SS2	Tie	3200	CH Westinghouse DSII 632	Digitrip RMS 510
183	SS2	2CTDA	800	CH Westinghouse DSII 632	Digitrip RMS 510
184	SS2	2APDA	1200	CH Westinghouse DSII 632	Digitrip RMS 510
185	SS2	2APDC	1200	CH Westinghouse DSII 632	Digitrip RMS 510
186	SS2	2CTDB	600	CH Westinghouse DSII 632	Digitrip RMS 510
187	SS2	2APDB	1200	CH Westinghouse DSII 632	Digitrip RMS 510
188	SS2	2TPDA	1600	CH Westinghouse DSII 632	Digitrip RMS 510
189	SS2	Spare	800	CH Westinghouse DSII 632	Digitrip RMS 510
190	SS2	2APDD	800	CH Westinghouse DSII 632	Digitrip RMS 510
191	SS3	Main 1	3200	Cutler Hammer	Digitrip 510
192	SS3	3APDE	1600	Cutler Hammer	Digitrip 510
193	SS3	3APDD	1600	Cutler Hammer	Digitrip 510
194	SS3	3APDA	1600	Cutler Hammer	Digitrip 510
195	SS3	3APDB	1600	Cutler Hammer	Digitrip 510
196	SS3	Tie	3200	Cutler Hammer	Digitrip 510
197	SS3	3CTDA	1600	Cutler Hammer	Digitrip 510
198	SS3	3RALA	1600	Cutler Hammer	Digitrip 510
199	SS3	3APDC	1600	Cutler Hammer	Digitrip 510
200	SS3	Main 2	3200	Cutler Hammer	Digitrip 510
201	SS4	Main 1	3200	CH Westinghouse DS II 632	Digitrip RMS 510
202	SS4	Main 2	3200	CH Westinghouse DS II 632	Digitrip RMS 510
203	SS4	Tie	3200	CH Westinghouse DS II 632	Digitrip RMS 510
204	SS4	4APDF	600	CH Westinghouse DS II 516	Digitrip RMS 510
205	SS4	4APDC	1200	CH Westinghouse DS II 516	Digitrip RMS 510

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
206	SS4	4APDD	1200	CH Westinghouse DS II 516	Digitrip RMS 510
207	SS4	4APDA	600	CH Westinghouse DS II 516	Digitrip RMS 510
208	SS4	4APDB	1200	CH Westinghouse DS II 516	Digitrip RMS 510
209	SS4	4APDE	600	CH Westinghouse DS II 516	Digitrip RMS 510
210	SS5	Main 1	3200	Siemens RL Type 3200	Siemens Static Trip III
211	SS5	Main 2	3200	Siemens RL Type 3200	Siemens Static Trip III
212	SS5	Tie	3200	Siemens RL Type 3200	Siemens Static Trip III
213	SS5	5APDC	1600	Siemens RL Type 1600	Siemens Static Trip III
214	SS5	5APDD	1200	Siemens RL Type 1600	Siemens Static Trip III
215	SS5	5ATD1	800	Siemens RL Type 1600	Siemens Static Trip III
216	SS5	5APDA	1200	Siemens RL Type 1600	Siemens Static Trip III
217	SS5	5APDB	1600	Siemens RL Type 1600	Siemens Static Trip III
218	SS5	5APDF	1600	Siemens RL Type 1600	Siemens Static Trip III
219	SS5	Spare	1600	Siemens RL Type 1600	Siemens Static Trip III
220	SS5	Spare	1600	Siemens RL Type 1600	Siemens Static Trip III
221	SS6	Tie	3200	Eaton CH	Digitrip 520
222	SS6	Feeder F2B	800	Eaton CH	Digitrip 520
223	SS6	Main M3B	4000	Eaton CH	Digitrip 520
224	SS6	F2C	800	Eaton CH	Digitrip 520
225	SS6	F3C	800	Eaton CH	Digitrip 520
226	SS6	F4A	800	Eaton CH	Digitrip 520
227	SS6	F5A	800	Eaton CH	Digitrip 520
228	SS6	F4B	800	Eaton CH	Digitrip 520
229	SS6	F5B	800	Eaton CH	Digitrip 520
230	SS6	F4C	800	Eaton CH	Digitrip 520
231	SS6	F5C	800	Eaton CH	Digitrip 520
232	SS6	F4D	800	Eaton CH	Digitrip 520
233	SS6	F5D	800	Eaton CH	Digitrip 520
234	SS6	F6D	800	Eaton CH	Digitrip 520
235	SS6	F7C	800	Eaton CH	Digitrip 520
236	SS6	F7B	800	Eaton CH	Digitrip 520
237	SS6	Main M8B	4000	Eaton CH	Digitrip 520
238	SS6	F8C	800	Eaton CH	Digitrip 520
239	SS6	F9B	800	Eaton CH	Digitrip 520
240	SS6	F8G	800	Eaton CH	Digitrip 520
241	SS6	F9C	800	Eaton CH	Digitrip 520
242	SS6	F8D	800	Eaton CH	Digitrip 520
243	SS6	F8A	800	Eaton CH	Digitrip 520
244	SS7	Mist Pumps	800	GE WPX-08	Micro Versa Trip
245	SS7	Mist Pumps	800	GE WPX-08	Micro Versa Trip
246	SS7	Bridge 62	800	GE WPX-08	Micro Versa Trip
247	SS7	7ATS-L5	800	GE WPX-08	Micro Versa Trip
248	SS7	Main 1	4000	GE-WPX-40	Micro Versa Trip
249	SS7	7SBA	800	GE WPX-08	Micro Versa Trip
250	SS7	Tunnel Fan	800	GE WPX-08	Micro Versa Trip
251	SS7	7DM	800	GE WPX-08	Micro Versa Trip
252	SS7	7MCCAA	1600	GE-WPX-16	Micro Versa Trip
253	SS7	7ATS EL	800	GE WPX-08	Micro Versa Trip
254	SS7	Tie	4000	GE-WPX-40	Micro Versa Trip
255	SS7	Spare	800	GE WPX-08	Micro Versa Trip
256	SS7	Tunnel Fan	800	GE WPX-08	Micro Versa Trip
257	SS7	Tunnel Fan	800	GE WPX-08	Micro Versa Trip
258	SS7	7MCCAB	1600	GE-WPX-16	Micro Versa Trip

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
259	SS7	7TDC	1600	GE-WPX-16	Micro Versa Trip
260	SS7	Tunnel Fan	800	GE WPX-08	Micro Versa Trip
261	SS7	Tunnel Fan	800	GE WPX-08	Micro Versa Trip
262	SS7	Main 2	4000	GE-WPX-40	Micro Versa Trip
263	SS7	Mist Pumps	800	GE WPX-08	Micro Versa Trip
264	SS7	Mist Pumps	800	GE WPX-08	Micro Versa Trip
265	SS7	Spare	800	GE WPX-08	Micro Versa Trip
266	SS8	Main 1	4000	GE Wave Pro WPS-40	Micro Versa Trip
267	SS8	Main 2	4000	GE Wave Pro WPS-40	Micro Versa Trip
268	SS8	Tie	4000	GE Wave Pro WPS-40	Micro Versa Trip
269	SS8	8DAA	1200	GE Wave Pro WPH-16	Micro Versa Trip
270	SS8	8MAA	600	GE Wave Pro WPX-08	Micro Versa Trip
271	SS8	8DAB	1200	GE Wave Pro WPH-16	Micro Versa Trip
272	SS8	8DAC	1200	GE Wave Pro WPH-16	Micro Versa Trip
273	SS8	8DAF	1200	GE Wave Pro WPH-16	Micro Versa Trip
274	SS8	MCC-8MAB	600	GE Wave Pro WPX-08	Micro Versa Trip
275	SS8	8DAD	1200	GE Wave Pro WPH-16	Micro Versa Trip
276	SS8	ATS-ELW	400	GE Wave Pro WPX-08	Micro Versa Trip
277	SS8	Spare	800	GE Wave Pro WPX-08	Micro Versa Trip
278	SS8	Spare	800	GE Wave Pro WPX-08	Micro Versa Trip
279	SS9	Main 1	4000	GE Wave Pro WPS-40	Micro Versa Trip
280	SS9	Spare	800	GE Wave Pro WPX-08	Micro Versa Trip
281	SS9	Spare	1600	GE Wave Pro WPH-16	Micro Versa Trip
282	SS9	9DAA	1000	GE Wave Pro WPH-16	Micro Versa Trip
283	SS9	9MAB	600	GE Wave Pro WPX-08	Micro Versa Trip
284	SS9	9DAB	1200	GE Wave Pro WPH-16	Micro Versa Trip
285	SS9	Tie	4000	GE Wave Pro WPS-40	Micro Versa Trip
286	SS9	9DAC	1200	GE Wave Pro WPH-16	Micro Versa Trip
287	SS9	9MAA	600	GE Wave Pro WPX-08	Micro Versa Trip
288	SS9	9DAD	1200	GE Wave Pro WPH-16	Micro Versa Trip
289	SS9	ATS-LSW	250	GE Wave Pro WPX-08	Micro Versa Trip
290	SS9	Main 2	4000	GE Wave Pro WPS-40	Micro Versa Trip
291	SS9	Spare	800	GE Wave Pro WPX-08	Micro Versa Trip
292	A1B (Vault 6)CG-237	Main	4000	Micro-Versa Trip	RMS-9
293	A1B (Vault 6)CG-238	HPG	800	Micro-Versa Trip	RMS-9
294	A1B (Vault 6)CG-239	DP-2	1600	Micro-Versa Trip	RMS-9
295	A1B (Vault 6)CG-240	DP-1	1600	Micro-Versa Trip	RMS-9
296	A1B (Vault 6)CG-241	SPARE	800	Micro-Versa Trip	RMS-9
297	A1B (Vault 6)CG-242	MDP-Conv.	1200		
298	A1B (Vault 6)CG-243	MDP-FIS	1200		
299	A1B (Vault 6)CG-244	DMPA	800		
300	A1A (Vault 7) CG-230	Main	1600	Micro-Versa Trip	RMS-9
301	A1A (Vault 7) CG-230	DPT 11	800	Micro-Versa Trip Plus	C208LSI
302	A1A (Vault 7) CG-230	DPT 2	800	Micro-Versa Trip	RMS-9
303	A1A (Vault 7) CG-230	DPT3	800	Micro-Versa Trip	RMS-9
304	A1A (Vault 7) CG-230	DP 2A	800	Micro-Versa Trip	RMS-9
305	A1A (Vault 7) CG-230	MDP-UA	800	Micro-Versa Trip Plus	C208LSI
306	A2A (Vault 8) CG-384	Main	2500	Micro-Versa Trip	RMS-9
307	A2A (Vault 8) CG-384	DP0U	800	Micro-Versa Trip	RMS-9
308	A2A (Vault 8) CG-384	DP5U	800	Micro-Versa Trip	RMS-9
309	A2A (Vault 8) CG-384	DP1U	400	Micro-Versa Trip	RMS-9

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
310	A2A (Vault 8) CG-384	DP2U	400	Micro-Versa Trip	RMS-9
311	A2A (Vault 8) CG-384	Wendy's	400	Micro-Versa Trip	RMS-9
312	A2A (Vault 8) CG-384	8DMZ	800	Micro-Versa Trip	RMS-9
313	A2A (Vault 8) CG-384	UPS	400	Micro-Versa Trip	RMS-9
314	A2A (Vault 8) CG-384	DP-6U	1000	Micro-Versa Trip	RMS-9
315	A2A (Vault 8) CG-384	DP7U	800	Micro-Versa Trip	RMS-9
316	A2 (Vault 9) CG-453	Main	4000	Micro-Versa Trip	TP9VT40H
317	A2 (Vault 9) CG-453	DP7	800	Micro-Versa Trip	TP9VT20SLA1
318	A2 (Vault 9) CG-453	DP8	800	Micro-Versa Trip	TP9VT20SLA1
319	A2 (Vault 9) CG-453	DP7U	400	Micro-Versa Trip	RMS-9
320	A2 (Vault 9) CG-453	DP3A/B	1000	Micro-Versa Trip	TP9VT20SLA1
321	A2 (Vault 9) CG-453	MDP CONN Bridge	800	Micro-Versa Trip Plus	C208LSI
322	A2 (Vault 9) CG-453	HP3A	400	Micro-Versa Trip	TP9VT20SLA1
323	A2 (Vault 9) CG-453	DP1	800	Micro-Versa Trip	TP9VT20SLA1
324	A2 (Vault 9) CG-453	DP2	800	Micro-Versa Trip	RMS-9
325	A2 (Vault 9) CG-453	Bridge CMCC	800	Micro-Versa Trip	TP4VT20
326	A2 (Vault 9) CG-453	DPC	600	Micro-Versa Trip	TP4VT20
327	A2 (Vault 9) CG-453	DP4	800	Micro-Versa Trip	TP9VT20SLA1
328	A2 (Vault 9) CG-453	DP5	800	Micro-Versa Trip	TP9VT20SLA1
329	A2 (Vault 9) CG-453	Credit Union	800	Micro-Versa Trip	TP9VT20SLA1
330	A3 (Vault 10) Outside	SWBD 10	3000	Micro-Versa Trip	RMS-9
331	A3 (Vault 10) Outside	Spare	800	Micro-Versa Trip	TH9VT20DLA1B
332	A3 (Vault 10) Outside	Mach Rm. Northwest	800	Micro-Versa Trip	TP9VT20DLA1B
333	A3 (Vault 10) Outside	SWBD #5	800	Micro-Versa Trip	RMS-9
334	A3 (Vault 10) DG-113	D2	1600	Static Trip III	RMS-TSIG-TZ
335	A3 (Vault 10) DG-113	DP7A	1600	Static Trip III	RSM-TSIG-TZ
336	A3 (Vault 10) DG-113	LD - UA Red Carpet	800	Static Trip III	RSM-TIG-TZ
337	A3 (Vault 10) DG-113	SDP1	800	Static Trip III	RSM-TIG-TZ
338	A3 (Vault 10) DG-113	SDP3	800	Static Trip III	RSM-TIG-TZ
339	A3 (Vault 10) DG-113	SDP4	800	Static Trip III	RSM-TIG-TZ
340	A3 (Vault 10) DG-113	SDP2 / Panel YY	800	Static Trip III	RSM-TIG-TZ
341	A3 (Vault 10) DG-113	Concessions	800	Static Trip III	RSM-TIG-TZ
342	A4 (Vault 11/12) DG-370	Switchboard 3	2000	Pow-R Trip 7	20SPB2000
343	A4 (Vault 11/12) DG-370	Switchboard 2	2000	Pow-R Trip 7	20SPB2000
344	A4 (Vault 11/12) DG-370	D-29	800		
345	A4 (Vault 11/12) DG-370	MCC	800		
346	A5 (Vault 14) DG-427	Main	2500	MicroLogic	
347	Substation W1	W-1 MAIN	2000	SQ. D CNT J90584	DIGITRIP RMS 500
348	Substation W1	SHOP1 ANNEX	800	SQ. D CNT J90584	DIGITRIP RMS 500
349	Substation W1	AIR MAIL	300	SQ. D CNT J90584	DIGITRIP RMS 500
350	Substation W1	SPARE	600	SQ. D CNT J90584	DIGITRIP RMS 500
351	Substation W1	AC TESTING PLUGS	200	SQ. D CNT J90584	DIGITRIP RMS 500
352	Substation W1	VEHICLE MAINT.	600	SQ. D CNT J90584	DIGITRIP RMS 500
353	Substation W2	W-2 MAIN	1600	SQ. D CNT J90584	DIGITRIP RMS 500
354	Substation W2	HP-3	250	SQ. D CNT J90584	DIGITRIP RMS 500
355	Substation W2	SPARE	800	SQ. D CNT J90584	DIGITRIP RMS 500

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
356	Substation W2	SPARE	800	SQ. D CNT J90584	DIGITRIP RMS 500
357	Substation W2	SPARE	800	SQ. D CNT J90584	DIGITRIP RMS 500
358	Substation W2	SHOP SUB FEED	400	SQ. D CNT J90584	DIGITRIP RMS 500
359	Substation W2	SPARE	800	SQ. D CNT J90584	DIGITRIP RMS 500
360	W3	MDP Main	2000A	TC2020/SS2000	RMS-9/T520LIG
361	W4	Panel H1	400	SGLA36AT0400	SRPG400A
362	W4	FEDEX Sort Facility	400	SGLA36AT0400	SRPG400A
363	W4	Panel H2	400	SGLA36AT0400	SRPG400A
364	W4	Panel H3	400	SGPA36AT0400	SRPG400A
365	W4	Main	400A	LAL36400MB	
366	Daily 1 Garage	Main #1	2000	Siemens	Static-Trip 111
367	Daily 1 Garage	SPARE	800	Siemens	Static-Trip 111
368	Daily 1 Garage	P1C	800	Siemens	Static-Trip 111
369	Daily 1 Garage	P1B	800	Siemens	Static-Trip 111
370	Daily 1 Garage	UPS	200	Siemens	Static-Trip 111
371	Daily 1 Garage	SPARE	800	Siemens	Static-Trip 111
372	Daily 1 Garage	TIE	2000	Siemens	Static-Trip 111
373	Daily 1 Garage	SPARE	400	Siemens	Static-Trip 111
374	Daily 1 Garage	P3A	300	Siemens	Static-Trip 111
375	Daily 1 Garage	P1A	200	Siemens	Static-Trip 111
376	Daily 1 Garage	L2B & L4B	300	Siemens	Static-Trip 111
377	Daily 1 Garage	P1G	600	Siemens	Static-Trip 111
378	Daily 1 Garage	Main #2	2000	Siemens	Static-Trip 111
379	Daily 2 Garage	Main #1	2000	Siemens	Static-Trip 111
380	Daily 2 Garage	Panel HP	800	Siemens	Static-Trip 111
381	Daily 2 Garage	SPARE	1600	Siemens	Static-Trip 111
382	Daily 2 Garage	9L2A & 9L24A	400	Siemens	Static-Trip 111
383	Daily 2 Garage	9L2C & 9L24B	400	Siemens	Static-Trip 111
384	Daily 2 Garage	9L2C & 9L24C	400	Siemens	Static-Trip 111
385	Daily 2 Garage	SPARE	400	Siemens	Static-Trip 111
386	Daily 2 Garage	9PTH	800	Siemens	Static-Trip 111
387	Daily 2 Garage	9PTF	1200	Siemens	Static-Trip 111
388	Daily 2 Garage	SPARE	400	Siemens	Static-Trip 111
389	Daily 2 Garage	TIE	2000	Siemens	Static-Trip 111
390	Daily 2 Garage	UPS	400	Siemens	Static-Trip 111
391	Daily 2 Garage	Panel MHP	800	Siemens	Static-Trip 111
392	Daily 2 Garage	9PTA	1200	Siemens	Static-Trip 111
393	Daily 2 Garage	9PTI	1200	Siemens	Static-Trip 111
394	Daily 2 Garage	Main #2	2000	Siemens	Static-Trip 111
395	Substation E1	MAIN E-1	2000	SQ. D CNT J90584	DIGITRIP RMS 500
396	Substation E1	OGDEN	600	SQ. D CNT J90584	DIGITRIP RMS 500
397	Substation E1	CATER AIR	1600	SQ. D CNT J90584	DIGITRIP RMS 500
398	Substation E1	SPARE	800	SQ. D CNT J90584	DIGITRIP RMS 500
399	Substation E1	PANEL A	250	SQ. D CNT J90584	DIGITRIP RMS 500
400	Substation E1	MBP	250	SQ. D CNT J90584	DIGITRIP RMS 500
401	UBW	LC-1 Main	3200A	RL-3200 Siemens	Static Trip III
402	UBW	LC-2 Main	1600A	RL-1600 Siemens	Static Trip III
403	UBW	LC- TIE	3200A	RL-3200 Siemens	Static Trip III
404	UBW	Panel EDP	800A	RL-800 Siemens	Static Trip III
405	UBW	MCC 6	800A	RL-800 Siemens	Static Trip III

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
406	UBW	MCC 1A	800A	RL-800 Siemens	Static Trip III
407	UBW	Telephone Building	800A	RL-800 Siemens	Static Trip III
408	UBW	Panel UDP	800A	RL-800 Siemens	Static Trip III
409	UBW	MCC 3	800A	RL-800 Siemens	Static Trip III
410	UBW	MCC 4	800A	RL-800 Siemens	Static Trip III
411	UBW	MCC 5	800A	RL-800 Siemens	Static Trip III
412	UBE Basement	UBE 52 Main	4000A	Square D, DS II-840	DigiTrip Rms 510
413	UBE Basement	UBE 52 Tie	4000A	Square D, DS II-840	DigiTrip Rms 510
414	UBE Basement	UBE 52 Main 2	4000A	Square D, DS II-840	DigiTrip Rms 510
415	UBE Basement	UBE MCC-9	1600A	Square D, DS II-616	DigiTrip Rms 510
416	UBE Basement	UBE MCC-7	1600A	Square D, DS II-616	DigiTrip Rms 510
417	UBE Basement	UBE MCC-11	1600A	Square D, DS II-616	DigiTrip Rms 510
418	UBE Basement	UBE MCC-5	1600A	Square D, DS II-616	DigiTrip Rms 510
419	UBE Basement	UBE MCC-6	1600A	Square D, DS II-616	DigiTrip Rms 510
420	UBE Basement	UBE 51 Main-1	3200A	Square D, DS-632	Digital Protection 510
421	UBE Basement	UBE 51 Tie	3200A	Square D, DS-632	Digital Protection 510
422	UBE Basement	UBE 51 Main 2	3200A	Square D, DS-632	Digital Protection 510
423	UBE Basement	UBE MCC-10	1600A	Square D, DS-416	Digital Protection 510
424	UBE Basement	UBE 2MCM-3	1600A	Square D, DS-416	Digital Protection 510
425	UBE Basement	UBE 2MCM-4	1600A	Square D, DS-416	Digital Protection 510
426	UBE Basement	UBE Panel 2GLA	1600A	Square D, DS-416	Digital Protection 510
427	UBE Basement	UBE MCC 8	1600A	Square D, DS-416	Digital Protection 510
428	UBE Basement	UBE 2MCM1	1600A	Square D, DS-416	Digital Protection 510
429	UBE Basement	UBE 2MCM2	1600A	Square D, DS-416	Digital Protection 510
430	UBE Basement	Spare	1600A	Square D, DS-II 616	DigiTrip Rms 510
431	Dulles East Bldg.	Main	2500	Cutler-Hammer	DIGITRIP 520
432	Dulles East Bldg.	MDP-1	1600	Cutler-Hammer	DIGITRIP 520
433	Dulles East Bldg.	MDP-2	1600	Cutler-Hammer	DIGITRIP 520
434	Dulles East Bldg.	MDP-3	800	Cutler-Hammer	DIGITRIP 520
435	Dulles East Bldg.	MDP-4	800	Cutler-Hammer	DIGITRIP 520
436	Dulles East Bldg.	MCC1	1600	Cutler-Hammer	DIGITRIP 520
437	Dulles East Bldg.	Spare	1600	Cutler-Hammer	DIGITRIP 520
438	Water Pumphouse	Main Normal	600	Cutler-Hammer	Digitrip - 310
439	Water Pumphouse	Main Standby	600	Cutler-Hammer	Digitrip - 310
440	Cargo 5	MDP-1	1000	GE	Micro-Vera Trip T4VTG
441	Cargo 5	MDP-3	1200	GE	Micro-Vera Trip T4VTNG
442	Cargo 5	MDP-4	1200	GE	Micro-Vera Trip T4VTNG
443	Cargo 5	MDP-5	1200	GE	Micro-Vera Trip T4VTNG
444	J.P. Morgan Bldg.	Main	2500	Square-D	Micrologic 6.0
445	J.P. Morgan Bldg.	LP 1 & 2	800	Square-D	Micrologic 6.0
446	J.P. Morgan Bldg.	EDS/VIA/ATS	400	Square-D	Micrologic 6.0
447	J.P. Morgan Bldg.	DBA	1200	Square-D	Micrologic 6.0
448	J.P. Morgan Bldg.	DBB	1200	Square-D	Micrologic 6.0
449	J.P. Morgan Bldg.	LP 3 & 4	800	Square-D	Micrologic 6.0
450	J.P. Morgan Bldg.	Spare	400	Square-D	Micrologic 6.0
451	J.P. Morgan Bldg.	Spare	800	Square-D	Micrologic 6.0
452	C APM Station	Main #1	4000	MDS-8403WEA	EO/DO 520LSIG
453	C APM Station	Main #2	4000	MDS-8403WEA	EO/DO 520LSIG
454	C APM Station	Tie	4000	MDS-8403WEA	EO/DO 520LSIG
455	C APM Station	Mist-1A	2500	MDS8303WEA	MO/DO 520LSIG

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
456	C APM Station	Mist-2A	2500	MDS8303WEA	MO/DO 520LSIG
457	C APM Station	STS-2	800	MDS-8083WEA	MO/DO 520LSIG
458	C APM Station	STS-1	800	MDS-8083WEA	MO/DO 520LSIG
459	C APM Station	15MCCMA	1600	MDS-8083WEA	MO/DO 520LSIG
460	C APM Station	15DMA	400	MDS-8163WEA	MO/DO 520LSIG
461	C APM Station	15MCCAA	600	MDS-8083WEA	MO/DO 520LSIG
462	C APM Station	CH-TP-3	600	MDS-8083WEA	MO/DO 520LSIG
463	C APM Station	STS-3	800	MDS-8083WEA	MO/DO 520LSIG
464	C APM Station	ATS-TP-1	400	MDS-8083WEA	MO/DO 520LSIG
465	C APM Station	SPARE	800	MDS-8083WEA	MO/DO 520LSIG
466	C APM Station	SPARE	1600	MDS-8163WEA	MO/DO 520LSIG
467	C APM Station	15LAA	400	MDS-8083WEA	MO/DO 520LSIG
468	C APM Station	15DMB	800	MDS-8083WEA	MO/DO 520LSIG
469	C APM Station	15MCCMB	800	MDS-8083WEA	MO/DO 520LSIG
470	C APM Station	NTS-1	600	MDS-8083WEA	MO/DO 520LSIG
471	C APM Station	NTS-2	600	MDS-8083WEA	MO/DO 520LSIG
472	C APM Station	NTS-3	400	MDS-8083WEA	MO/DO 520LSIG
473	C APM Station	ATS-TP-2	400	MDS-8083WEA	MO/DO 520LSIG
474	C APM Station	CH-TP-2	600	MDS-8083WEA	MO/DO 520LSIG
475	C APM Station	CH-TP-1	600	MDS-8083WEA	MO/DO 520LSIG
476	C APM Station	SPARE	1600	MDS-8163WEA	MO/DO 520LSIG
477	C APM Station	SPARE	800	MDS-8083WEA	MO/DO 520LSIG
478	C APM Station	MIST-1B	2500	MDS-8303WEA	MO/DO 520LSIG
479	C APM Station	MIST-2B	2500	MDS-8303WEA	MO/DO 520LSIG
480	E APM Station	MAIN #1	2500	MDS-8303WEA	EO/DO 520LSIG
481	E APM Station	MAIN#2	2500	MDS-8303WEA	EO/DO 520LSIG
482	E APM Station	TIE	2500	MDS-8303WEA	EO/DO 520LSIG
483	E APM Station	TVF-T3-1S(E)	630	MDS-8083WEA	MO/DO 520LSIG
484	E APM Station	TVF-T3-2S(E)	630	MDS-8083WEA	MO/DO 520LSIG
485	E APM Station	TVF-T3-3S(E)	630	MDS-8083WEA	MO/DO 520LSIG
486	E APM Station	1MCCA	250	MDS-8083WEA	MO/DO 520LSIG
487	E APM Station	SPARE	400	MDS-8083WEA	MO/DO 520LSIG
488	E APM Station	1DMA	800	MDS-8083WEA	MO/DO 520LSIG
489	E APM Station	SPARE	400	MDS-8083WEA	MO/DO 520LSIG
490	E APM Station	TVF--T3-1N(E)	630	MDS-8083WEA	MO/DO 520LSIG
491	E APM Station	TVF-13-2N(E)	630	MDS-8083WEA	MO/DO 520LSIG
492	E APM Station	TVF-T3-3N(E)	630	MDS-8083WEA	MO/DO 520LSIG
493	AMF Bldg. S/S	MAIN #1	3200	MDS6323WEA	EO/DO 520LSIG
494	AMF Bldg. S/S	MAIN #2	3200	MDS6323WEA	EO/DO 520LSIG
495	AMF Bldg. S/S	TIE	3200	MDS6323WEA	EO/DO 520LSIG
496	AMF Bldg. S/S	PANEL 1D1B	400	MDS6083WEA	MO/DO 520LSIG
497	AMF Bldg. S/S	MCCA	600	MDS6083WEA	MO/DO 520LSIG
498	AMF Bldg. S/S	SPARE	800	MDS6083WEA	MO/DO 520LSIG
499	AMF Bldg. S/S	MCCD	600	MDS6083WEA	MO/DO 520LSIG
500	AMF Bldg. S/S	SHOP EQUIP.	400	MDS6083WEA	MO/DO 520LSIG
501	AMF Bldg. S/S	1MCCB	200	MDS6083WEA	MO/DO 520LSIG
502	AMF Bldg. S/S	1D1A	1200	MDS6163WEA	MO/DO 520LSIG
503	AMF Bldg. S/S	1MCCC	600	MDS6083WEA	MO/DO 520LSIG
504	AMF Bldg. S/S	WASH BAY EQUIP.	400	MDS6083WEA	MO/DO 520LSIG
505	AMF Bldg. S/S	SPARE	800	MDS6083WEA	MO/DO 520LSIG
506	Airfield Vault 4	Main 1	1600	Square D - NW16H1	Micrologic 6.0 H
507	Airfield Vault 4	Main 2	1600	Square D - NW16H1	Micrologic 6.0 H
508	Airfield Vault 4	Tie 1	1600	Square D - NW16H1	Micrologic 6.0 H

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
509	Airfield Vault 4	Tie 2	1600	Square D - NW16H1	Micrologic 6.0 H
510	Airfield Vault 4	Generator	1600	Square D - NW16H1	Micrologic 6.0 H
511	Airfield Vault 4	RP1	800	Square D - NW08H1	Micrologic 6.0 H
512	Airfield Vault 4	LP	800	Square D - NW08H1	Micrologic 6.0 H
513	Airfield Vault 4	TP1	800	Square D - NW08H1	Micrologic 6.0 H
514	Airfield Vault 4	NDP	800	Square D - NW08H1	Micrologic 6.0 H
515	Airfield Vault 4	Panel LGA /Tunnel	400AF	KD35K/KD3400F	KT3250T
516	Airfield Vault 4	FAA RTR site	400	KD35K/KD3400F	KT3100T
517	ATCT	Main 1	2000	Siemens - WLS2A320	ETU745
518	ATCT	Main 2	2000	Siemens - WLS2A320	ETU745
519	ATCT	Tie	2000	Siemens - WLS2A320	ETU745
520	ATCT	ATS-P-L1	1600	Siemens - WLS2A316	ETU745
521	ATCT	ATS-P-L2	1600	Siemens - WLS2A316	ETU745
522	ATCT	DPN	1600	Siemens - WLS2A316	ETU745
523	ATCT	BPS-1	1600	Siemens - WLS2A316	ETU745
524	ATCT	ATS-L	800	Siemens - WLS2A308	ETU745
525	ATCT	ATS-E	1600	Siemens - WLS2A316	ETU745
526	A Gates	PBDLPD2	1600	Cutler Hammer	Digitrip RMS 610
527	A Gates	Spare	1600	Cutler Hammer	Digitrip RMS 610
528	A Gates	SWBD DS	1600	Cutler Hammer	Digitrip RMS 610
529	A Gates	PBD PDP2	1600	Cutler Hammer	Digitrip RMS 610
530	A Gates	Main 1	4000	Cutler Hammer	Digitrip RMS 610
531	A Gates	Tie	4000	Cutler Hammer	Digitrip RMS 610
532	A Gates	P/RD LDP1	1600	Cutler Hammer	Digitrip RMS 610
533	A Gates	DSA PNL	1600	Cutler Hammer	Digitrip RMS 610
534	A Gates	ATS	1600	Cutler Hammer	Digitrip RMS 610
535	A Gates	PBD PDP1	1600	Cutler Hammer	Digitrip RMS 610
536	A Gates	Main 2	4000	Cutler Hammer	Digitrip RMS 610
537	Fule Farm Admin. Bldg	MAIN-1	3200	C. H. MDS 632 MAGNUM	DIGITRIP 520
538	Fule Farm Admin. Bldg	MAIN-2	3200	C. H. MDS 632 MAGNUM	DIGITRIP 520
539	Fule Farm Admin. Bldg	TIE	3200	C. H. MDS 632 MAGNUM	DIGITRIP 520
540	Fule Farm Admin. Bldg	MCC 1	1600	C. H. MDS 616 MAGNUM	DIGITRIP 520
541	Fule Farm Admin. Bldg	MCC 2	1600	C. H. MDS 616 MAGNUM	DIGITRIP 520
542	Fule Farm Admin. Bldg	MCC 3	1600	C. H. MDS 616 MAGNUM	DIGITRIP 520
543	Fule Farm Admin. Bldg	MCC 4	800	C. H. MDS 616 MAGNUM	DIGITRIP 520
544	Fule Farm Admin. Bldg	FOAM/JOCKEY PUMP	800	C. H. MDS 608 MAGNUM	DIGITRIP 520
545	Fule Settling Tank Bldg	MAIN-1	2000	C. H. MDS 620 MAGNUM	DIGITRIP 520
546	Fule Settling Tank Bldg	TIE	2000	C. H. MDS 620 MAGNUM	DIGITRIP 520
547	Fule Settling Tank Bldg	MAIN-2	2000	C. H. MDS 620 MAGNUM	DIGITRIP 520
548	Fule Settling Tank Bldg	WATER PLANT F3B	800	C. H. MDS 608 MAGNUM	DIGITRIP 520
549	Fule Settling Tank Bldg	GLYCOL FAC. F20	800	C. H. MDS 608 MAGNUM	DIGITRIP 520
550	Fule Settling Tank Bldg	FOAM JOCKEY PUMP	800	C. H. MDS 608 MAGNUM	DIGITRIP 520
551	Fule Settling Tank Bldg	GENERATOR MAIN	2000	C. H. MDS 620 MAGNUM	DIGITRIP 520
552	Fule Settling Tank Bldg	WATER PLANT F10	800	C. H. MDS 608 MAGNUM	DIGITRIP 520
553	Fule Settling Tank Bldg	MCC 22 F3A	800	C. H. MDS 608 MAGNUM	DIGITRIP 520
554	Fule Settling Tank Bldg	MCC 21 F2D	800	C. H. MDS 608 MAGNUM	DIGITRIP 520
555	MWAA Maint. Hanger	HP5	400	HKD3400F	KT3400T
556	MWAA Maint. Hanger	HP3	400	HKD3400F	KT3400T
557	MWAA Maint. Hanger	HP1C	400	HKD3400F	KT3400T
558	MWAA Maint. Hanger	HP2	600	HLD3600F	LT3600T
559	MWAA Maint. Hanger	HP1B	400	HKD3400F	KT3400T
560	MWAA Maint. Hanger	HP1A	400	HDK3400F	KT3400T

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
<i>Low Voltage Breaker Relays</i>					
561	MWAA Maint. Hanger	PH-1A	225	FXD63B225	n/a
562	MWAA Maint. Hanger	PH-2B	225	FXD63B225	n/a
563	MWAA Maint. Hanger	PH-12A	400	JXD63B400	n/a
564	MWAA Maint. Hanger	Outside Main	800	G.E.	J808LS
565	MWAA Maint. Hanger	Inside Main	1600	C/H #33C121583	C/H Digitrip RMS510
566	PANEL MBP	PANEL MBP	300	KD35K	KT2300T
567	Green Lot Main	Green Lot Main	400	JXD63B400	n/a
568	North Employee	North Employee	450	LXD63B450	n/a
569	Police/Fire	Main	400	JXD63B400	n/a
570	Police/Fire	XFMR 1	400	D63B400	n/a
571	Police/Fire	XFMR 2	400	D63B400	n/a
572	Red Lot A	RL2	350	KD3400F	KT3350T
573	Red Lot B	RL	150	FD3150	n/a
574	Taxistand	Main	800	MAP36800	n/a
575	Taxistand	Panel DP	600	MAP36600	n/a
576	North Cont. Staging	North Cont. Staging	800	LMD63F800	LMD63T80
577	Overflow	Overflow	450A	LT3450T	
578	K9	Main	225A	TFJ236225WL	
579	Remote Valet	Main	450	LT3450T	n/a
580	Blue Lot	XFMR	800A	TKM836F00	n/a
581		Green Lot	300	SGHA36AT0400	SRPG400A
582	Bus Maint.	Main	400	SGHA36AT0400	SRPG400A
583	R gates	Main	800	MDL3800F	MT3800T
584	Salt and Sand	Main	250	HJD3250F	JT3200T
585	Shop 1 Annex	Main MDP	600	SG3P36AT0600	SRPG600A
586	Shop 1 Annex	Main	400	TXD23B400	n/a
587	Shop 1	MDP Main	800	HLMD63F800	N/A
588	W6-A	W6A - Main	1000A	TKL4V4610	TV4T
589	W6-B	W6B - Main	1200A	TKL4V4612	TV4T
590	Purple Lot	MDP Main	600A	SGHA36ATO600	SRPG600A
591	Purple Lot	Panel DPA	225A	SFLA36ATO250	SRPF250A
592	Commissary	Main	1200A	T4VTNG	G1123
593	Commissary	Panel HP	225A	TFL236225WL	
594	ARFF 304	Main	400A	LC36400	n/a
595	APM/VMF	MDP Main Panel 1D1B	800A	HMDL3800F	8MES800T

Washington Dulles International Airport
Protective Relay Testing

LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL	
<i>Low Voltage Breaker Relays</i>					
596	De-Icing Facility	Main Breaker	2000	RKF36200U44A	ET
597	De-Icing Facility	Glycol Bldg.	800	MJF36800	ET
598	South feeder	Car Wash Facility - Main	800A	SKLA36AT0800	SRPK800A
599	South feeder	Paint Shop 1 - Main	2000	DigitripRMS/T54CLIG	PDR6R20A120
600	South feeder	ARRF 302 - Main	400A	SGLA36AT0400	400A
601	South feeder	Smithsonian - Main	800A	M800A	800A
602	South feeder	Domestic Water - Main	600	SKLA36AT0800	600A
603	South feeder	Gate 313 - Main	175	FXD83B175	175
604	UNITED TUG	PC-UN1 MDP	800	MDL30800F	MT3800T
605	UNITED TUG	TO PC-UN2	400	KD3400F	KT3400T
606	UNITED TUG	PC-UN2	400	LAL36400	

APPENDIX B
MEDIUM VOLTAGE BREAKER/RELAY LIST

Washington Dulles International Airport
Protective Relay Testing

	LOCATION	BREAKER NAME	SIZE (A)	BREAKER MODEL	TRIP UNIT MODEL
	<i>Medium Voltage Breaker Relays</i>				
1	Tier 1 Distribution	Main #1 (980)	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105,1 - Basler BE 147N, 3 - ABB 6668D37A22-A (87)
2	Tier 1 Distribution	PB-3A	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105
3	Tier 1 Distribution	PB-1A	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105
4	Tier 1 Distribution	PA-1 (C & D)	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105
5	Tier 1 Distribution	Provisional (Spare)	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105
6	Tier 1 Distribution	25 Synchro-Verifier	NA	ABB	ABB DB 41-601E
7	Tier 1 Distribution	Tie	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105,1 - ABB 1356D39A01
8	Tier 1 Distribution	Main #2 (979)	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105, 1 - Basler BE 147N, 3 - ABB 6668D37A22-A (87)
9	Tier 1 Distribution	PB-1B	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105
10	Tier 1 Distribution	PB-3B	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105
11	Tier 1 Distribution	PA-2 (C & D)	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105
12	Tier 1 Distribution	Provisional (Spare)	1200	Cutler-Hammer 150VCP-W500	4 Units - Basler BE 50/51 B-105
13	UBW 15kV	TIE	3000	SQUARE D VR VCB-3000	MICROSHIELD/OC
14	UBW 15kV	MAIN 1	3000	SQUARE D VR VCB-3000	MICROSHIELD/OC
15	UBW 15kV	PE-2	1800	SQUARE D VR VCB-1800	MICROSHIELD/OC
16	UBW 15kV	SPARE	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
17	UBW 15kV	PT-6	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
18	UBW 15kV	PU-21	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
19	UBW 15kV	PT-4	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
20	UBW 15kV	MVTE-2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
21	UBW 15kV	PUBE-42	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
22	UBW 15kV	PN-2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
23	UBW 15kV	PW-2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
24	UBW 15kV	PT-2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
25	UBW 4.16kV	SPARE	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
26	UBW 4.16kV	PU-G1	1200	SQUARE D VR VCB-1200	750 GE MULTILIN
27	UBW 4.16kV	SPARE	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
28	UBW 4.16kV	UBW 480 UBWLC-1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
29	UBW 4.16kV	R/W- VAULT- 3	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
30	UBW 4.16kV	R/W- VAULT- 1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
31	UBW 4.16kV	FAA ATCT-1 PC-1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
32	UBW 4.16kV	R/W VAULT -2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
33	UBW 4.16kV	MAIN -1	1200	SQUARE D VR VCB-1200	750 GE MULTILIN
34	UBW 4.16kV	TIE	1200	SQUARE D VR VCB-1200	750 GE MULTILIN
35	UBW 4.16kV	MAIN -2	1200	SQUARE D VR VCB-1200	750 GE MULTILIN
36	UBW 4.16kV	FAA ATCT-1 PC-2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
37	UBW 4.16kV	R/W VAULT -2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
38	UBW 4.16kV	R/W VAULT -3	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
39	UBW 4.16kV	R/W VAULT -1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
40	UBW 4.16kV	SPARE	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
41	UBW 4.16kV	480 V LC-2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
42	UBW 4.16kV	SPARE	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
43	UBW 4.16kV	PU-G2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
44	UBW GENSET 4.16kV	52G-1	1200	50VCP-W250	GPU-2000R ABB
45	UBW GENSET 4.16kV	52GT-1	1200	50VCP-W250	DIGITRIP 3000
46	UBW GENSET 4.16kV	52GT-2	1200	50VCP-W250	DIGITRIP 3000
47	UBW GENSET 4.16kV	52G-2	1200	50VCP-W250	GPU-2000R ABB
48	UBE 15kV	MAIN -1	3000	SQUARE D VR VCB-3000	750 GE MULTILIN
49	UBE 15kV	TIE	3000	SQUARE D VR VCB-3000	MICROSHIELD/OC
50	UBE 15kV	PE-1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
51	UBE 15kV	PT-5	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
52	UBE 15kV	PU-11	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
53	UBE 15kV	PUBE-31	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
54	UBE 15kV	PT-3	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
55	UBE 15kV	PN-1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
56	UBE 15kV	PUBE-32	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
57	UBE 15kV	PT-1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
58	UBE 15kV	PW-1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
59	UBE 15kV	Spare	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
60	UBE 4.16kV	UBE MVMCC1-1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
61	UBE 4.16kV	Spare	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
62	UBE 4.16kV	UBE MVMCC2-1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
63	UBE 4.16kV	UBE MVMCC3-1	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
64	UBE 4.16kV	MAIN -1	2000	SQUARE D VR VCB-2000	750 GE MULTILIN
65	UBE 4.16kV	TIE	2000	SQUARE D VR VCB-2000	750 GE MULTILIN
66	UBE 4.16kV	MAIN -2	2000	SQUARE D VR VCB-2000	750 GE MULTILIN
67	UBE 4.16kV	UBE MVMCC2-2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
68	UBE 4.16kV	UBE MVMCC1-2	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC
69	UBE 4.16kV	SPARE	1200	SQUARE D VR VCB-1200	MICROSHIELD/OC