

Undertaking 110

Re: Testing for the 100 megawatts ability to provide black start capability

Undertake to provide a document or a set of documents regarding a schedule generated similar to this project schedule for the smaller aspects of the project with milestone dates.

Attached is the plan specific to black starting a Holyrood thermal plant unit using the Holyrood CT. The plan shows the required steps and the durations for each step. A specific milestone date is not indicated on the schedule as it has been prepared so that it may be implemented on an appropriate day to best suit system conditions.

HRD Black Start

#	Activity ID	Activity Name	Original Duration	Procedure Steps	Hour																
					-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Total		6h 50.0n																		
2	HRD Black Start		6h 50.0n																		
3	3.1.1 Pre-Conditions		1h																		
4	A1000	Pre-Conditions	1h	1-10																	
5	3.1.2 Procedures		5h 50.0n																		
6	Test Initialization/Setup		2h 15.0n																		
7	A1010	Start 480V Emergency Diesel Generator (EDG) at HRD-CT	0h 30.0n	1-10																	
8	A1020	Isolate the HRD-CT from the TS	0h 10.0n	11-14																	
9	A1180	Inform NL Power control room that 38L & 39L will be removed from service	0h	15																	
10	A1030	Disconnect 38L & 39L from HRD TS	0h 15.0n	16-19																	
11	A1040	Ensure Station Service to Holyrood Unit # 3 remains in services	0h 5.0n	20-22																	
12	A1050	Isolate B6/B7	0h 10.0n	23-25																	
13	A1080	Thermal Plant preparation and setup for energization	0h 35.0n	45-67																	
14	A1060	Isolate B11/B13	0h 10.0n	26-32																	
15	A1070	Isolate T6, T7 and T8 to avoid sympathetic inrush and potential trip of differential when energizing from HRD-CT	0h 20.0n	33-44																	
16	A1090	HRD-CT Plant energization	0h 35.0n	68-78																	
17	Test Phase		1h 15.0n																		
18	A1100	Terminal Station switching (checks & close B4B15)	0h 10.0n	79-83																	
19	A1110	ECC to verify B7 bus voltage is suitable for plant use	0h 10.0n	85																	
20	A1120	Generating Station SSB-1 close	0h 10.0n	86-87																	
21	A1130	Starting of equipment HRD Thermal Plant (FD fan, boiler feed pump)	0h 15.0n	88-100																	
22	A1190	30 min. test run	0h 30.0n	101-102																	
23	A1200	Operator takes screen shots of MW loading	0h	103																	
24	A1210	Co-ordinator declares energization test successful	0h	104																	
25	System Restoration		2h 20.0n																		
26	A1220	Generating Station starts shutting down the loads	0h 15.0n	105																	
27	A1230	Generating Station opens SSB-1	0h 5.0n	106-107																	
28	A1240	Evan Cabot to verify shutdown successful and OK to proceed with isolating HRD-CT	0h	108																	
29	A1250	Open G4T4	0h 5.0n	110-111																	
30	A1260	Open B4B15	0h 5.0n	112-113																	
31	A1150	Shutdown HRD CT	0h 40.0n	109																	
32	A1270	Test Co-ordinator to verify restoration of normal switching	0h	114																	
33	A1280	Inform NL Power that 38L & 39L will be restored	0h	133																	
34	A1160	Restore normal switching	0h 50.0n	115-139																	
35	A1170	Inform HRD-CT operators that they will returned to station service and ensure they are ready to receive 230 kV feed	0h	140																	
36	A1290	Close B4B15	0h 5.0n	141-142																	
37	A1300	Shut down EDG & resume 480V Bus	0h 15.0n	143																	

- Actual Work
- Remaining Work
- Critical Remaining Work
- Milestone
- Summary

