

1 Q. **Reference: Redesign of UFLS Scheme for High Power Operation, dated March 17, 2021 (UFLS**  
2 **2021 Report)**

3 How much load would be shed on the Island Interconnected system (IIS) if the Maritime Link  
4 and its frequency controller are in service and the LIL is lost when importing 900 MW to the IIS?

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7 A. The amount of Under Frequency Load Shedding (“UFLS”) for the specified scenario would  
8 depend on the Maritime Link transfer levels, Island demand on the Island Interconnected  
9 System and the delay between the Labrador-Island Link (“LIL”) bipole trip and a Maritime Link  
10 runback. This delay is a function of the number of permitted restarts specified in the control  
11 system of the LIL.

12 Table 1 provides the expected amount of UFLS for each case (See “UFLS (MW)” columns).<sup>1</sup>

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<sup>1</sup> Included in “Redesign of UFLS Scheme for High Power Operation, Technical Note: TN1205.84.09,” TransGrid Solutions Inc., March 17, 2021, Appendix 1.

Table 1: Expected Amount of UFLS for Loss of LIL Bipole

	Demand (MW)	Generation (MW)	ML (MW)	LIL Transfer Limit (MW)	DC Faults on Both Poles with Unsuccessful Restarts (Loss of LIL Bipole)							
					One Restart (500ms)		Two Restarts (900ms)		Three Restarts (1400ms)		Four Restarts (1750ms)	
					UFLS (MW)	Minimum/Maximum Frequency (Hz)	UFLS (MW)	Minimum/Maximum Frequency (Hz)	UFLS (MW)	Minimum/Maximum Frequency (Hz)	UFLS (MW)	Minimum/Maximum Frequency (Hz)
Peak	1866	1530	500	900	278	58.52	556	58.31/61.16	671	58.04/62.23		
Ipeak	1428	1094	500	900	343	58.38	550	58.00/61.66	620	57.75/63.00		
Iint	1038	703	500	900	249	58.26	404	57.79/60.94	404	57.27/61.00		
Light	812	476	500	900	224	58.05	279	57.74/60.50	279	56.85		
ExLight	575	401	500	750	105	58.34	174	57.94/60.70	174	57.21/60.77		
Peak	1821	1285	300	900	554	58.29	676	58.13/60.9	832	57.93/62.45		
Ipeak	1400	915	300	900	511	58.10	620	57.81/60.84	620	57.65/60.86		
Iint	994	589	300	810	405	57.93	405	57.91	405	57.50		
Light	760	452	300	690	280	57.96	280	57.91	280	57.58		
ExLight	553	409	300	470	99	58.41	97	58.39	137	58.18		
Peak	1815	1303	158	900	673	58.03	821	57.98/60.98	839	57.94/60.99		
Ipeak	1391	889	158	850	618	57.94	618	57.93	620	57.75		
Iint	980	548	158	650	405	57.91	405	57.93	405	57.95		
Light	742	433	158	500	280	57.99	280	58.00	280	57.98		
ExLight	537	402	158	300	106	58.40	99	58.40	106	58.39		
Peak	1820	1330	0	900	658	58.03	835	58.03	835	57.95	835	57.96
Ipeak	1391	906	0	840	616	57.93	616	57.91	617	57.83	617	57.83
Iint	972	538	0	575	397	58.00	405	58.00	405	58.00	405	57.99
Light	734	403	0	340	171	58.39	171	58.39	171	58.39	171	58.39
ExLight	535	404	0	130	-	59.05	-	59.05	-	59.05	-	59.05
Peak	1815	1049	-150	900	783	58.00	835	57.98	835	57.95	835	57.95
Ipeak	1389	757	-150	820	618	57.91	618	57.89	618	57.77	618	57.77
Iint	972	424	-150	410	244	58.37	244	58.38	244	58.39	244	58.38
Light	740	402	-150	190	60	58.79	60	58.79	60	58.79	60	58.79
ExLight	536	400	-46	90	-	59.13	-	59.13	-	59.13	-	59.13
Peak	1824	998	-320	700	675	58.02	840	57.93/60.86	840	57.92/61.05	840	57.93/61.06
Ipeak	1402	422	-320	680	620	57.87	620	57.87	620	57.87	620	57.87
Iint	987	421	-320	250	223	58.38	223	58.38	223	58.38	223	58.38
Light	750	400	-260	90	60	58.77	60	58.77	60	58.77	60	58.77

at minimum IIS generation