Frequency Response Characteristic Calculation for All India based on NLDC SCADA Data

EVENT:	As reported at 10:42 Hrs on 6th August 2021,Generation loss of 1230 MW occurred in Southern Region, At SEIL P2 (2x660 MW), 400kV SEIL P2 - NPS -1 was under planned outage for OPGW repair works from 10:27 Hrs and 400kV SEIL P2 - NPS -2 tripped due to B-N Fault (Conductor Snapping) at 10:41 Hrs, consequently it resulted in Generation Loss of 1230 MW..

S No	Particulars	Dimension	NR	ER	WR	NER	SR
1	Actual Net Interchange before the Event (10:41:50)	MW	12622	-6115	-7844	-176	1183
2	Actual Net Interchange after the Event (10:43:00)	MW	12429	-6353	-8176	-195.0	2057
3	Change in Net Interchange (2 - 1)	MW	-193	-238	-332	-18.6	874
4	Generation Loss (+) / Load Throw off (-) during the Event	MW	0	0	0	0	1230
5	Control Area Response (3 - 4)	MW	-193	-238	-332	-19	-356
6	Frequency before the Event	HZ	50.02	50.02	50.02	50.02	50.02
7	Frequency after the Event	HZ	49.99	49.99	49.99	49.99	49.99
8	Change in Frequency (7 - 6)	HZ	-0.030	-0.030	-0.030	-0.030	-0.030
9	Frequency Response Characteristic (5 / 8)	MW/Hz	6433	7925	11062	621	11867
10	Net System Demand met before the Event	MW	59729	19512	52241	2350	51860
11	Internal Generation before the Event (10 - 1)	MW	47107	25627	60085	2527	50677
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	2389	780	2090	94	2074
13	Ideal generator response assuming 5% droop…….40% per Hz (40% of Row 11)	MW/Hz	18843	10251	24034	1011	20271
14	Composite ideal response (12 + 13)	MW/Hz	21232	11031	26124	1105	22345
15	Percentage ideal response	%	30.3%	71.8%	42.3%	56.2%	53.1%

(*) - Data may be constant/suspected during the event
Note: +ve exchange=> import ; (-)ve exchange => export

Total Change in (MW)	1230
FRC for NEWS GRID (dp/df) MW/Hz	**41000**
Power Number (net change in MW/maximum change in frequency)	**12300**