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

EVENT:	At 17:48 Hrs Dated 28th-Sep-2021, load loss of around 1500MW reported at Sterlite Vedanta in Odisha of Eastern Region due to disturbance occurred on internal smelter load side.As per NLDC scada data load loss figure is observed around 1535 MW.

S No	Particulars	Dimension	NR	ER	WR	NER	SR
1	Actual Net Interchange before the Event (17:48:00)	MW	8154	-5386	-1887	256	-1538
2	Actual Net Interchange after the Event (17:49:30)	MW	8460	-6484	-1381	267.5	-1309
3	Change in Net Interchange (2 - 1)	MW	306	-1098	506	11.7	229
4	Generation Loss (+) / Load Throw off (-) during the Event	MW	0	-1535	0	0	0
5	Control Area Response (3 - 4)	MW	306	437	506	12	229
6	Frequency before the Event	HZ	49.96	49.96	49.96	49.96	49.96
7	Frequency after the Event	HZ	50.03	50.03	50.03	50.03	50.03
8	Change in Frequency (7 - 6)	HZ	0.070	0.070	0.070	0.070	0.070
9	Frequency Response Characteristic (5 / 8)	MW/Hz	4369	6246	7228	168	3276
10	Net System Demand met before the Event	MW	49381	19387	46928	2935	40002
11	Internal Generation before the Event (10 - 1)	MW	41227	24774	48814	2679	41540
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	1975	775	1877	117	1600
13	Ideal generator response assuming 5% droop…….40% per Hz (40% of Row 11)	MW/Hz	16491	9909	19526	1072	16616
14	Composite ideal response (12 + 13)	MW/Hz	18466	10685	21403	1189	18216
15	Percentage ideal response	%	23.7%	58.5%	33.8%	14.1%	18.0%

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

Total Change in (MW)	1535
FRC for NEWS GRID (dp/df) MW/Hz	**21929**
Power Number (net change in MW/maximum change in frequency)	**11808**