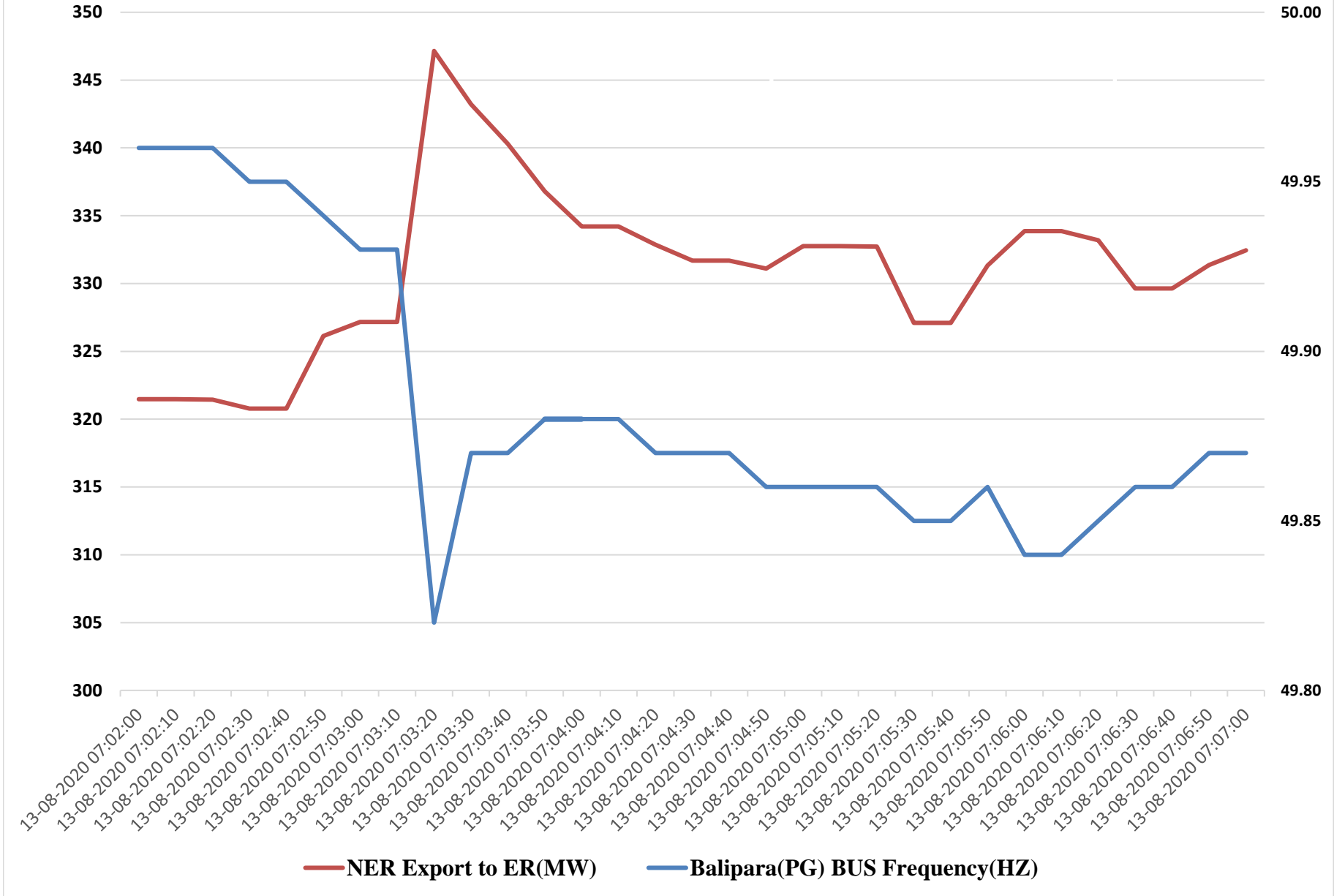


NER Export v/s Frequency



Frequency Response Characteristic in North-Eastern Region (Based on NERLDC SCADA data)											
Event	On 13th of August 2020 at 07:03 hrs, As reported, 400kV Jhakri-Panchakula ckt- 1 and 2 tripped due to sparking of Y-Ph Isolator for ckt1 at Panchakula end and the second ckt tripped at Jhakri end. In this connection, SPS operated at Jhakri, Karcham and Rampur. Consequently, 02 Nos Units of Karcham (Unit-2 &4), 02 Nos units of Jhakri (Unit-3 & 5) and 02 Nos Units of Rampur (Unit – 3 & 4) tripped.As per NLDC SCADA data generation loss 1200 MW occurred during the event. 1210 MW generation loss has been considered in the calculation as per the reported region.										
Date and Time of Event	13.08.2020, 07:03:00 Hrs										
			NER ISGS GENERATION								
SI No.	Particulars	Dimension	Palatana	Khandong + stg II	Kopili	Doyang	RHEP	Loktak	BgTPP	Kameng	Pare
1	Installed Capacity	MW	2 x 363.3	2 x 25 +1 x 25	4 x 50	3 x 25	3 x 135	3 x 35	3 x 250	2 x 150	2 x 55
2	No of Units on Bar	MW	2	0	0	2	3	3	2	2	2
3	Installed Capacity (MCR) of Units on Bar	MW	726.6	0.0	0.0	50.0	495.0	105.0	450.0	300.0	110.0
4	Declared capacity (DC)	MW	636.0	0	0	49.0	360.0	104	455	300	116
5	105 % of MCR	MW	762.9	0.0	0.0	52.5	519.8	110.3	472.5	315.0	115.5
6	Whether on ramping (Yes/No)		Yes	NA	NA	No	No	No	No	No	No
7	Margin Available	MW	154.2	0.0	0.0	3.1	158.3	4.3	209.2	11.8	-0.9
8	Actual Net Interchange before the Event (07:03:00)	MW	608.7	0.00	0.0	49.4	361.4	106.0	263.3	303.2	116.4
9	Actual Net Interchange after the Event (07:04:00)	MW	611.1	0.00	0.0	49.5	361.0	106.3	266.5	303.9	116.5
10	Change in Net Interchange (9 - 8)	MW	2.4	0.0	0.0	0.0	-0.4	0.3	3.2	0.7	0.1
11	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Control Area Response 11-10)	MW	-2.4	0.0	0.0	0.0	0.4	-0.3	-3.2	-0.7	-0.1
13	Frequency before the Event	Hz	49.93	49.93	49.93	49.93	49.93	49.93	49.93	49.93	49.93
14	Frequency after the Event	Hz	49.88	49.88	49.88	49.88	49.88	49.88	49.88	49.88	49.88
15	Change in Frequency (14-13)	Hz	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05
16	Frequency Response Characteristic (12 / 15)	MW/Hz	48.0	0.0	0.0	0.6	-9.0	6.2	64.4	14.2	2.8
17	Net System Demand met before the Event	MW	0	0.0	0	0	0	0	0	0	0
18	Internal Generation before the Event (8)	MW	609	0.00	0	49	361	106	263.3	303.2	116
19	Ideal load response assuming 4% per Hz (0.04*Row 17)	MW/Hz	0	0.0	0	0	0	0	0	0	0
20	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 18)	MW/Hz	243.5	0.0	0.0	19.8	144.6	42.4	105.3	121.3	46.6
21	Composite ideal response (19 + 20)	MW/Hz	243.5	0.0	0.0	19.8	144.6	42.4	105.3	121.3	46.6
22	Percentage ideal response (16/21)	%	19.71%			3.03%	-6.23%	14.63%	61.15%	11.71%	6.01%

NER ISGS AGBPP and AGTCCPP are not mandated for FGMO/RGMO as unit wise IC is less than 50 MW.

Frequency Response Characteristic in North-Eastern Region (Based on NERLDC SCADA data)

Event	On 13th of August 2020 at 07:03 hrs, As reported, 400kV Jhakri-Panchakula ckt- 1 and 2 tripped due to sparking of Y-Ph Isolator for ckt1 at Panchakula end and the second ckt tripped at Jhakri end. In this connection, SPS operated at Jhakri, Karcham and Rampur. Consequently, 02 Nos Units of Karcham (Unit-2 &4), 02 Nos units of Jhakri (Unit-3 & 5) and 02 Nos Units of Rampur (Unit – 3 & 4) tripped.As per NLDC SCADA data generation loss 1200 MW occurred during the event. 1210 MW generation loss has been considered in the calculation as per the reported region.
Date and Time of Event	13.08.2020, 07:03:00 Hrs

Serial No.	Particulars	Dimension	AP	Assam	Meghalaya	Manipur	Mizoram	Nagaland	Tripura*	NER*
1	Actual Net Interchange before the Event (07:03:00)	MW	73.98	1010.50	-10.55	125.95	53.68	112.30	216.47	-327.16
2	Actual Net Interchange after the Event (07:04:00)	MW	75.93	1009.15	-10.35	125.00	53.60	112.15	218.56	-334.21
3	Change in Net Interchange (2 - 1)	MW	2.0	-1.4	0.2	-1.0	-0.1	-0.1	2.1	-7.0
4	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Control Area Response (3-4)	MW	2.0	-1.4	0.2	-1.0	-0.1	-0.1	2.1	-7.0
6	Frequency before the Event	HZ	49.93	49.93	49.93	49.93	49.93	49.93	49.93	49.93
7	Frequency after the Event	HZ	49.88	49.88	49.88	49.88	49.88	49.88	49.88	49.88
8	Change in Frequency (7-6)	HZ	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05
9	Frequency Response Characteristic (5 / 8)	MW/HZ	-39	27	-4	19	1.6	3.0	-42	141
10	Net System Demand met before the Event	MW	73.98	1155.50	233.10	125.95	69.68	120.30	310.05	1955.54
11	Internal Generation before the Event (10 - 1)	MW	0.0	145.0	243.7	0.0	16.0	8.0	93.6	2282.7
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	3.0	46.2	9.3	5.0	2.8	4.8	12.4	78.2
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	0	58.0	97.5	0.0	6	3	37.4	913.1
14	Composite ideal response (12 + 13)	MW/Hz	3	104	107	5	9	8	50	991
15	Percentage ideal response (9/14)	%	-1317.92%	25.9%	-3.7%	377.1%	17.4%	37.4%	-83.9%	14.22%

Note: +ve exchange=> import ; (-)ve exchange => export

* Tripura Demand Met also includes Bangladesh.

*NER Demand Met excludes Bangladesh