

Frequency Response Characteristic and Performance Computation in NorthEastern Region (Based on SCADA data)

At 14:10 hrs on 11th June 2024, 400/220 kV 500 MVA ICT-3 at Mandola s/s tripped due to fire in isolator of ICT-3 (Transfer Bus side). ICT-3 was charged from transfer bus, as Main Bay (212) was under planned shutdown. At the same time, remaining 03 Nos 400/220 kV 500 MVA ICTs also tripped. As reported by SLDC Delhi, 1601 MW load loss and generation loss of 279 MW at Pragati (Units-10,11 and 12) were observed. Hence net load loss of (1601-279=) 1322 MW is considered for FRC/FRP Calculation.

S No	Particulars	Dimension	Assam GBPS	Agartala GBPS	Bongaigaon TPP	Palatana	Doyang HEP	Kameng HEP	Khandong HEP	Khandong Stg-2	Kopili HEP	Loktak HEP	Panyor HEP	Pare HEP	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Tripura*	NER Region*	
1	Actual Net Interchange before the Event (14:10:30)	MW	-157	-45	-406	-428	0	-457	0	-26	-152	-105	0	0	136	1541	146	33	61	140	263	450	
2	Actual Net Interchange after the Event (14:11:21)	MW	-157	-43	-402	-426	0	-457	0	-26	-151	-106	0	0	135	1550	147	31	61	141	265	468	
3	Change in Net Interchange (2 - 1)	MW	0.3	1.7	4.9	2.7	0.0	0.3	0.0	-0.1	1.0	-0.1	0.0	0.0	-1.0	9.3	0.5	-2.2	0.4	0.9	1.5	17.9	
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	Control Area Response (3 - 4)	MW	0.3	1.7	4.9	2.7	0.0	0.3	0.0	-0.1	1.0	-0.1	0.0	0.0	-1.0	9.3	0.5	-2.2	0.4	0.9	1.5	17.9	
6	Frequency before the Event	HZ	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929	49.929
7	Frequency after the Event	HZ	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006	50.006
8	Change in Frequency (7 - 6)	HZ	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
9	Frequency Response Characteristic (5 / 8)	MW/HZ	4	22	63	35	0	3	0	-1	12	-2	0	0	-13	121	6	-29	6	12	19	232	
10	Frequency Response Obligation (FRO) of control area	MW/Hz	0	0	35	35	3	20	0	2	6	3	16	6	7	108	0	22	6	7	30	306	
11	Frequency Response Performance (FRP) (9/10)		NA	NA	1.81	1.01	No Gen	0.17	No Gen	-0.48	2.11	-0.61	No Gen	No Gen	-1.78	1.12	NA	-1.30	1.03	1.67	0.63	0.76	

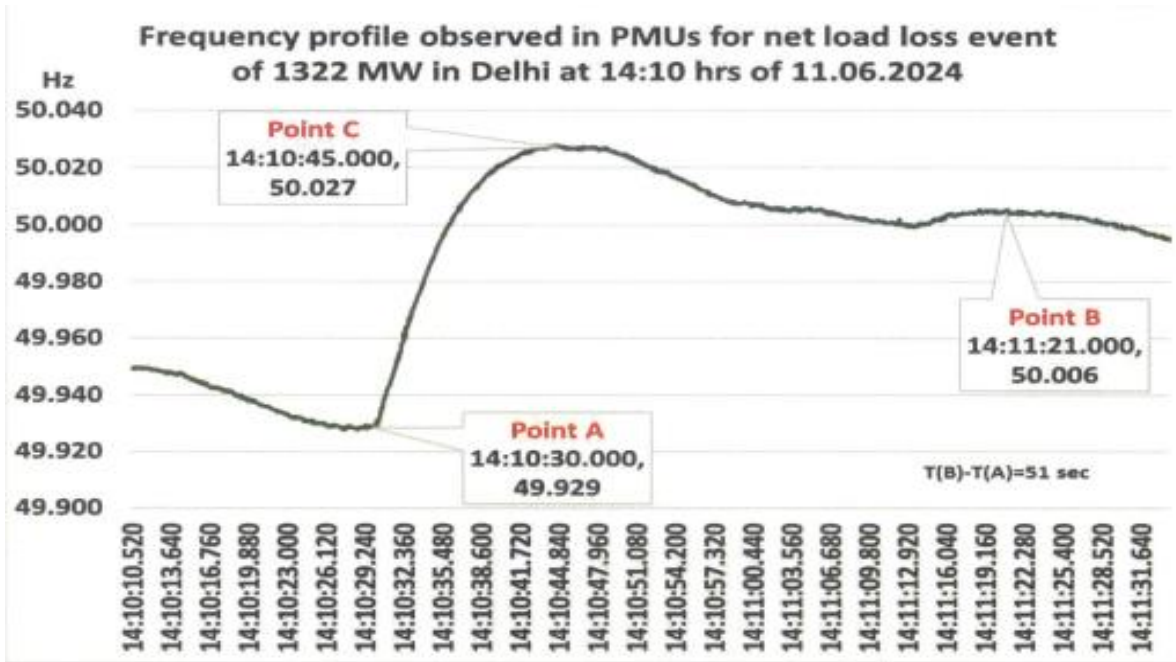


Figure 1: Net load loss event in Delhi, Northern region at 14:10 hrs of 11th June 2024