



ग्रिड कंट्रोलर ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
GRID CONTROLLER OF INDIA LIMITED
(A Government of India Enterprise)



[formerly Power System Operation Corporation Limited (POSOCO)]

राष्ट्रीय भार प्रेषण केन्द्र / **National Load Despatch Centre**

कार्यालय : बी-9, प्रथम एवं द्वितीय तल, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली - 110016
Office : 1st and 2nd Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
CIN : U40105DL2009GOI188682, Website : www.grid-india.in, E-mail : gridindiacc@grid-india.in, Tel.: 011- 42785855

दिनांक : 25th January 2024 334

सेवा मे,

All SLDCs/RLDCs/RPCs

विषय: Publishing of Quantum of Reserves in line with Detailed Procedure For Estimation of the Requirement of Secondary Reserve Ancillary Service (SRAS) and Tertiary Reserve Ancillary Service (TRAS) at regional level

- संदर्भ:** 1. Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023
2. Detailed Procedure for Assessment of Quantum of Secondary & Tertiary Reserve Capacity, along with Information Exchange and Timelines, as approved by CERC vide letter no. L-1/265/2022/CERC dated 28th Sep 2023

महोदय,

The Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023 (hereinafter called 'Grid Code') was published on 11.07.2023, in the Gazette of India Extraordinary (Part-III, Section-4, No. 488). Regulation 30 (11)(k) of the Grid Code requires NLDC to prepare a detailed methodology for the assessment of secondary reserve capacity. Further Regulation 30(11)(a) requires NLDC to assess tertiary reserve requirements for the regional control area and the State control area. In line with above regulations, Grid India submitted detailed procedure to CERC and same was approved by CERC vide letter dated 28th September 2023 (available at https://cercind.gov.in/Regulations/Order_SRAS%20TRAS.pdf).

Accordingly, the reserve requirement is assessed in accordance with approved procedures and declared as follows:

- The reference contingency for the All India has been considered as 7000 MW considering the largest contingency which occurred in the Indian grid in the year 2023
- Data required for estimation of reserves for year ahead basis has not been received from any state.
- Based on historic data available with NLDC, the secondary reserve requirement is estimated to be 11,094 MW and the tertiary reserve requirement is estimated to be 16,770 MW for the FY 2024-25. This can be further reviewed after requisite data is available from the States.
- As per Section 8.6 of the approved procedure for estimation of Secondary Reserve "The all-India total of positive (and negative) secondary reserves capacity requirement on

regional basis shall be equal to the reference contingency or secondary reserve capacity requirement as computed above, whichever is higher”.

In *this* regard, it is to be noted that the Grid code has come into force from 01st October 2023. The behavior of control areas is expected to be different post implementation of Grid Code in addition to the other factors. Under these circumstances, a conservative scaling of estimated quantum of secondary reserve requirement has been carried out for 2024-25. Accordingly, the Reference Contingency (7000 MW) itself has been considered as the upper limit for arriving at the secondary reserves requirement. However, the same is an estimate only which is subject to revision as need arises.

- (e) Consequentially, the total secondary and tertiary reserve requirement is estimated as 7000 MW and 12676 MW respectively for FY 2024-25. The details for each control area are enclosed as per Formats RAS3, and RAS4.

सधन्यवाद,

भवदीय



(सुरजीत बनर्जी)
मुख्य महाप्रबंधक, रा.भा.प्रे.के.

प्रतिलिपि : Secretary, CERC



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Format – RAS3

Reference contingency for Indian Power System

Date of Issue: 25 January 2024	Revision No.	0
Applicable for Financial Year 2024-25		
Reference Contingency for generation loss (MW)	7000	
Reference Contingency for load loss (MW)	7000	

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Format RAS4

Year-Ahead SRAS and TRAS Reserve requirement for Year 2024-25 (Scaled for reference contingency of 7000 MW)																
State/UT	Actual 99 Percentile Negative ACE (MW)	Actual 99 Percentile Positive ACE (MW)	Scaled 99 Percentile Negative ACE (MW) (a)	Scaled 99 Percentile Positive ACE (MW) (b)	Max. Demand met (c)	Internal Gen. at the time of max demand (d)	Drawl from ISTS (e=c-d)	State Internal Generation/ State Maximum Demand (f=d/c)	State drawl from ISTS/ State Maximum Demand (g=e/c)	Secondary Reserves in ISGS (h=a*g)	Secondary Reserves at Regional Level (sum of reserves in all states of the region as given in "h")	Secondary Reserves within state (i=a*f)	Tertiary Reserves in ISGS (j = h)	Tertiary Reserves within state (k = l)	Largest Unit Size of internal generation (l)	Total Tertiary Reserves within state (m=k + 0.5*l)
UT Chandigarh	49	55	30	32	428	0	428	0.00	1.00	30	1233	0	30	0	0	0
Delhi	277	357	170	207	7433	1216	6217	0.16	0.84	142		28	142	28	216	136
Haryana	415	572	255	332	12881	2726	10155	0.21	0.79	201		54	201	54	660	384
Himachal Pradesh	209	142	128	83	2193	537	1657	0.24	0.76	97		31	97	31	100	81
UT of Jammu and Kashmir and UT of Ladakh*	425	402	261	233	3271	1564	1707	0.48	0.52	136		125	136	125	150	200
Punjab	438	516	269	299	15314	6384	8930	0.42	0.58	157		112	157	112	700	462
Rajasthan	653	955	401	554	17958	12332	5626	0.69	0.31	126		275	126	275	660	605
Uttar Pradesh	761	829	467	481	28224	12806	15418	0.45	0.55	255		212	255	212	660	542
Uttarakhand	217	259	133	150	2756	906	1850	0.33	0.67	89		44	89	44	76	82
NR state Sum	3444	4087	2113	2370												
Northern Region	3349	3549	2113	2370												
Chhattisgarh	301	399	189	222	5939	2654	3285	0.45	0.55	104	828	84	104	84	500	334
UT Daman and Diu & UT Dadra and Nagar Haveli	61	89	38	49	1352	0	1352	0.00	1.00	38		0	38	0	0	0
Gujarat	975	957	611	531	24360	14736	9624	0.60	0.40	242		370	242	370	800	770
Goa	82	53	51	29	705	0	705	0.00	1.00	51		0	51	0	0	0
Madhya Pradesh	695	773	436	429	17525	7259	10266	0.41	0.59	255		181	255	181	660	511
Maharashtra	799	743	501	413	29682	21555	8127	0.73	0.27	137		364	137	364	660	694
WR States Sum	2913	3013	1827	1673												
Western Region	2895	2505	1827	1673												
Andhra Pradesh	681	580	414	298	13400	8087	5313	0.60	0.40	164	949	250	164	250	800	650
Karnataka	729	779	443	401	16934	9849	7085	0.58	0.42	185		257	185	257	800	657
Kerala	216	122	131	63	5019	1676	3344	0.33	0.67	87		44	87	44	130	109
UT Puducherry	45	90	27	47	521	0	521	0.00	1.00	27		0	27	0	0	0
Tamil Nadu	754	1034	458	532	19556	7310	12246	0.37	0.63	287		171	287	171	600	471
Telangana	632	558	384	287	15467	7485	7982	0.48	0.52	198		186	198	186	800	586
SR State Sum	3058	3163	1856	1628												
Southern Region	2942	2437	1856	1628												
Bihar	317	432	188	224	7547	222	7325	0.03	0.97	183	512	6	183	6	250	131
DVC	338	247	201	128	4556	4968	-413	1.09	-0.09	0		201	0	201	600	501
Jharkhand	185	278	110	144	1989	409	1580	0.21	0.79	88		23	88	23	210	128
Orissa	311	408	185	212	7073	3260	3813	0.46	0.54	99		85	99	85	660	415
Sikkim	57	34	34	18	155	0	155	0.00	1.00	34		0	34	0	0	0
West Bengal	313	499	186	259	11771	4939	6831	0.42	0.58	108		78	108	78	500	328
ER state Sum	1521	1898	904	985												
Eastern Region	1432	1475	904	985												
Arunachal Pradesh	45	50	32	39	223	0	223	0.00	1.00	32	267	0	32	0	0	0
Assam	196	166	139	129	2405	228	2178	0.09	0.91	126		13	126	13	50	38
Manipur	29	42	21	32	253	0	253	0.00	1.00	21		0	21	0	0	0
Meghalaya	53	49	37	39	407	14	393	0.04	0.96	36		1	36	1	51	27
Mizoram	12	35	9	27	157	0	157	0.00	1.00	9		0	9	0	30	15
Nagaland	15	34	11	27	176	0	176	0.00	1.00	11		0	11	0	8	4
Tripura	74	65	52	51	419	147	272	0.35	0.65	34		18	34	18	21	29
NER State Sum	424	441	300	344												
North-Eastern Region	476	515	300	344												
All India (sum of regions)	11094	10481	7000	7000							3788	3212	3788	3212		8888
Total Tertiary Reserves Requirement in India												12676				

Note: * UT of Jammu and Kashmir and UT of Ladakh have been considered as single entity inline with data availability at NLDC.

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State/ Union Territory UT	Year-Ahead (Apr 2024 - Mar 2025)								
	Secondary Reserves			Tertiary Reserves			Total Reserves (Secondary + Tertiary)		
	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total	Within in ISGS	Within state	Total
UT of Chandigarh	30	0	30	30	0	30	60	0	60
Delhi	142	28	170	142	136	278	284	164	448
Haryana	201	54	255	201	384	585	401	438	839
Himachal Pradesh	97	31	128	97	81	178	193	113	306
UT of Jammu and Kashmir and UT of Ladakh*	136	125	261	136	200	336	272	325	597
Punjab	157	112	269	157	462	619	313	574	887
Rajasthan	126	275	401	126	605	731	251	880	1131
Uttar Pradesh	255	212	467	255	542	797	510	754	1264
Uttarakhand	89	44	133	89	82	171	179	126	304
Chhattisgarh	104	84	189	104	334	439	209	419	627
UT Daman and Diu & UT Dadra and Nagar Haveli	38	0	38	38	0	38	76	0	76
Gujarat	242	370	611	242	770	1011	483	1140	1623
Goa	51	0	51	51	0	51	103	0	103
Madhya Pradesh	255	181	436	255	511	766	511	691	1202
Maharashtra	137	364	501	137	694	831	274	1058	1332
Andhra Pradesh	164	250	414	164	650	814	328	899	1227
Karnataka	185	257	443	185	657	843	370	915	1285
Kerala	87	44	131	87	109	196	175	153	327
UT of Puducherry	27	0	27	27	0	27	55	0	55
Tamil Nadu	287	171	458	287	471	758	573	642	1215
Telangana	198	186	384	198	586	784	396	771	1167
Bihar	183	6	188	183	131	313	366	136	502
Damodar Valley Corporation	0	201	201	0	501	501	0	701	701
Jharkhand	88	23	110	88	128	215	175	150	325
Odisha	99	85	185	99	415	515	199	500	699
Sikkim	34	0	34	34	0	34	68	0	68
West Bengal	108	78	186	108	328	436	216	406	622
Arunachal Pradesh	32	0	32	32	0	32	64	0	64
Assam	126	13	139	126	38	164	251	51	303
Manipur	21	0	21	21	0	21	41	0	41
Meghalaya	36	1	37	36	27	63	72	28	100
Mizoram	9	0	9	9	15	24	17	15	32
Nagaland	11	0	11	11	4	15	21	4	25
Tripura	34	18	52	34	29	63	68	47	115
Region-wise and All-India									
Northern Region	1233	881	2113	1233	2492	3724	2465	3372	5837
Western Region	828	999	1827	828	2309	3137	1656	3307	4963
Southern Region	949	908	1856	949	2473	3421	1897	3380	5278
Eastern Region	512	392	904	512	1502	2014	1023	1894	2917
North-Eastern Region	267	33	300	267	113	380	535	146	681
All India	3788	3212	7000	3788	8888	12676	7577	12099	19676

Note:

* UT of Jammu and Kashmir and UT of Ladakh have been considered as single entity inline with data availability at NLDC.