




✓

- Comprehensive Audit:**
1. Name of the Sub-Station: *Sarusajai 220/132/33 kV S/S*
 2. Voltage level: *220/132/33 kV*
 3. Owner: *AEGL*
 4. Date of Audit: *15/11/2021*
 5. Members of Auditing Team:

Sl.No.	Name	Designation	Organization	Signature
1	Shaishav Ranjan	AEF	NERPC	
2.	Ankit Vardh	DQM	POWERGRID	
3.	Abhi K. Vaghase	AM	NERLDC	

6. Representatives of the Sub-station/Generating Station assisting the auditing team:

[illegible]

Observations/Recommendations:

Sl.No.	Parameters	Yes/NO	Remarks
1	Whether redundant supply for station auxiliaries is available?	Yes	33/0.4KV, 2x250 KVA 2 DG set available
2	Whether SCADA system is present?	Yes	
3	Whether SAS has been implemented? If no, whether panels are SAS compliant?	Yes	
4	Whether protection relays for transformers/ICTs/reactors are operational?	Yes	
5	Whether reliability by way of Bus-Bar scheme is present in 132kV station?	Yes ^{Yes} _{NO}	main bus / Transfer bus Scheme ^{Available} Transfer bus not in service
6	Whether Double Main Arrangement is present in 220kV Station? If yes, whether operational or not?	Yes	Operational
7	Whether Bus Bar Protection is available for the 220kV and above station?	Yes	
8	Whether protection relays for emanating lines are operational?	Yes	
9	Whether time synchronisation facility is available in the Sub-station?	Yes	
10	Whether existing RTUs are healthy and reporting?	Yes	
11	Whether existing communication via PLCC or OPGW? If PLCC then healthiness of PLCC panels	both	PL

Rajeev
15/11/21

Kalyan
15/11/21

Shankar
15/11/21

Shankar
15/11/21

Vijay
15/11/21

12	In case of OPGW connectivity to the station, whether end equipments are available and functional?	Yes	
13	Whether all analog/digital points are reporting in local SCADA?	Yes	
14	Healthiness of Protection coupler/Coupling device?	Yes	
15	Whether sufficient lighting is available in the switchyard?	Yes	
16	DC Supply- Whether two DC sources are available?	Yes	
17	Earthing System in the switchyard: Whether as per IS?	Yes	
18	List of diagnostic tools, testing equipments etc. and whether are present in sufficient quantity?	#	As per the list Attached
19	Whether firefighting provision is available in the station?	partially available	Available in 200MVA Not available in 100MVA + 132 KV
20	Whether Protection Audit has ever been carried out before? If yes then compliance status of Audit Observations/Recommendations	Yes	
21	Whether all relay settings have been submitted in PDMS? If no, then compliance status	No	Relay Setting to be submitted
22	Whether CTs, PTs/CVTs of sufficient accuracy is present in the station?	*	0.2S accuracy class may be procured. 0.5S accuracy class is available

Any other specific observations/recommendations:

1. AC to be installed in battery room
2. DC earth fault relay to be provided and alarm to be integrated in SAS.
3. PLCC room roof leakage has to be rectified
4. 132 KV bus coupler to be made available.
5. 132 KV ICT 2 MGR is faulty

Ashish
15/11/21

Shashank
15/11/21

Srinivas
15/11/21

Vidya
15/11/21

6. Silica gel of ICT to be replaced.
7. PLCC of mira-I faulty
8. Various alarms are persisting in SCADA, same needs to be attended on priority
9. ICT-3(220KV) not integrated to SAS.
10. Cables laid in open may be ~~used~~ ^{laid} through cable tracks

Shankar
15/11/21

Shankar
15/11/21

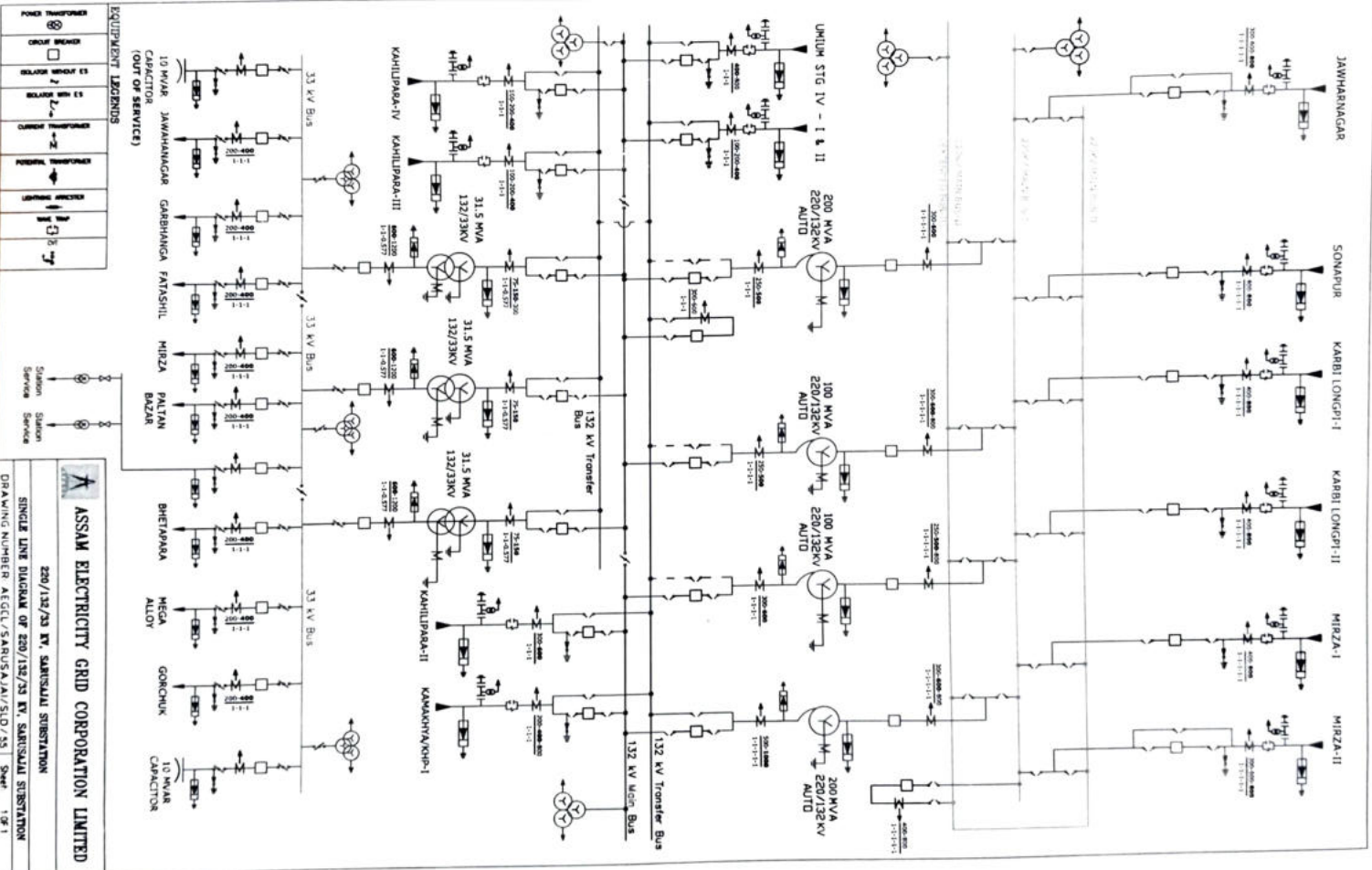
Shankar
15/11/21

Shankar
15/11/21

Shankar
15/11/21

132kr - only 1853

15/11/21



14B. AVAILABILITY OF VARIOUS DIAGNOSTIC TOOLS

Sl. No.	DIAGNOSTIC TOOLS	Availability	If Yes (i.e. If Available)	
		(Y/N)	Make	Model
1	Winding resistance meter	N		
2	Transformer Voltage Ratio test meter	N		
3	Insulation Resistance (IR) tester	Y		
	(a) 5 kV	Y	Megger	MIT 520/2
	(b) 10 kV	Y	Megger	SI-1068
4	Capacitance & Tandela Measurement Instrument	N		
	(a) Automatic			
	(b) Manual			
5	Break Down Voltage (BDV) Test kit for oil	Y	SIVA	OTS PR CG(100 kV)
6	Dissolved Gas Analyser	Y	GE Energy	TRANSPORT X
7	Sweep Frequency Response Analysis(SFRA) test kit	N		
8	Partial Discharge (PD) Measuring Instrument	N		
9	CB operational Analyser	N		
10	DCRM test kit	N		
11	SF6 Gas leakage detector	N		
12	Dew point measuring instrument	N		
13	SF6 Gas Handling Plant (for Evacuation, filling, filtering of gas)	N		
14	Static Contact Resistance Measuring instrument	N		
15	Leakage Current Meter (LCM)	N		
16	Earth Tester	Y	MEGABRAS	MTD20KWe
17	Automatic Realy test kit	N		
18	Thermovision camera for detection of hot spots	Y	FLUKE	TiX500
19	Thermal Scanner (for Transformer / Reactor)	N		
20	Transmission line Response Analyser	N		
21	Puncture Insulator Detector (PID)	N		
22	On line Partial Discharge (PD) monitoring of GIS	N		
	If Yes			
	(a) Using Ultra High Frequency (UHF) technique			
	(b) Using Acoustic technique			
22	Fault Locator	Y	TAURUS	EHT-1250Max-30
23	Any On line diagnostic tools	N		
	If Yes, List the instruments			
	(a)			