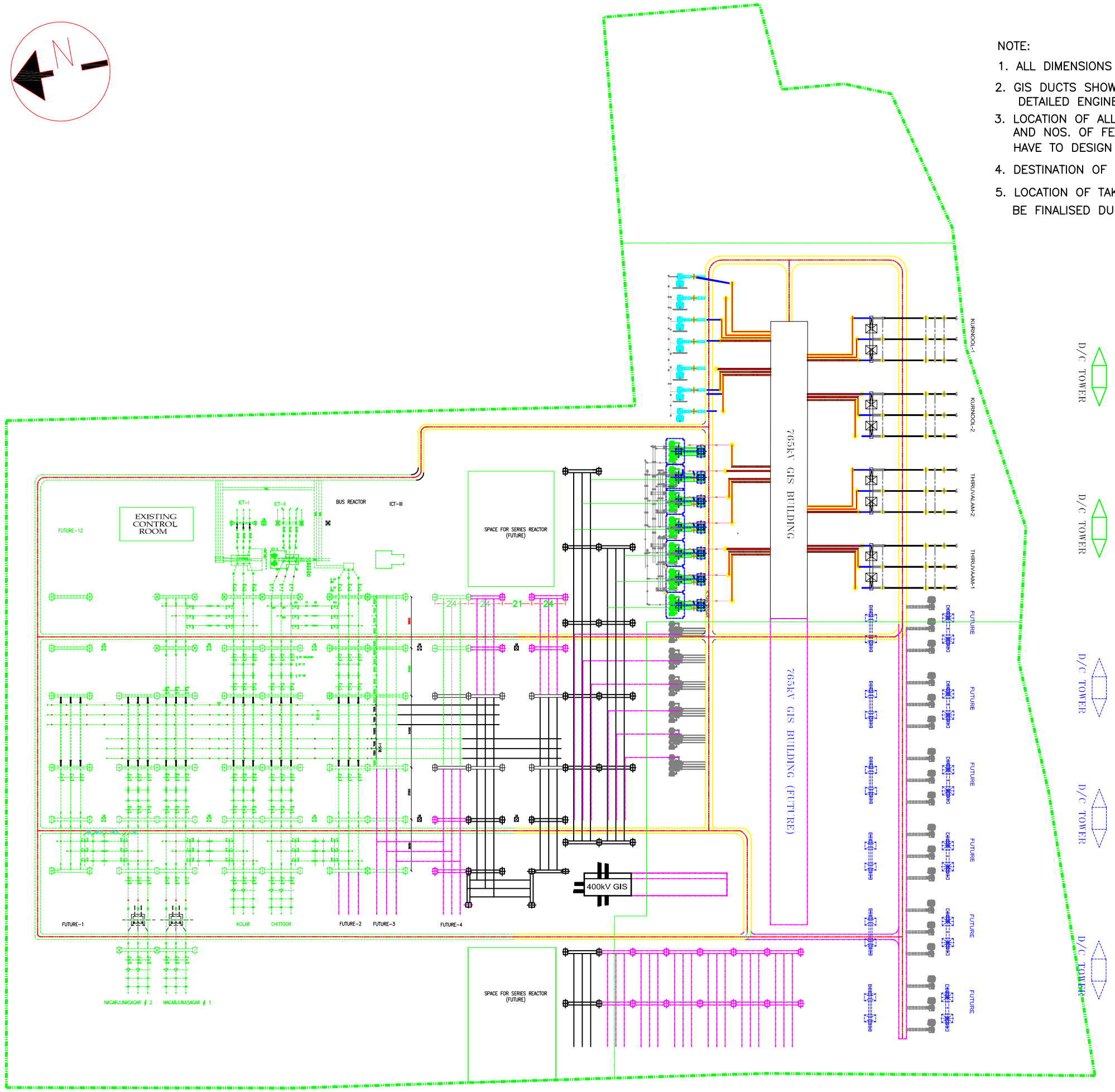
Annex – 18.0

Agenda Item # 18.0

"Modification for the System Strengthening-XXIV in Southern Region – GIS for Cuddapah 765kV S/s"

1	GIS Cuddapah	1 Page



NOTE:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPEICIED.
2. GIS DUCTS SHOWN ARE INDICATIVE ONLY AND SHALL BE FINALISED DURING DETAILED ENGINEERING BASED ON SITE CONDITION.
3. LOCATION OF ALL BUILDINGS ARE INDICATIVE ONLY. BASED ON THE EXACT PLOT PLAN AND NOS. OF FEEDERS INDICATED IN DRAWING (INCLUDING FUTURE FEEDRES) CONTRACTOR HAVE TO DESIGN THE LAYOUT AND BULDINGS IN LINE WITH TECHNICAL SPECIFICATION.
4. DESTINATION OF FEEDERS MARKED AS FUTURE ARE INDICATIVE ONLY.
5. LOCATION OF TAKE-OFF TOWER ARE INDICATIVE ONLY AND SHALL BE FINALISED DURING DETAILED ENGINEERING AS PER SITE REQUIREMENT.

FOR TENDER PURPOSE ONLY

REVIEWED BY		POWER GRID CORPORATION OF INDIA LIMITED (A GOVERNMENT OF INDIA ENTERPRISE) पावरग्रिड		
ASST. GM (Engg-S/S)				
RECOMMENDED BY		CLEARED BY	PROJECT: System Strengthening Scheme in Southern Region - XXIV	
AGM (Engg-S/S)		CTU PLG / SGTF	SUBSTATION: 765/400kV KADAPA GIS SUBSTATION	
AGM (Engg-S/S)			TITLE: GENERAL ARRANGEMENT DRAWING	
APPROVED BY		PREPARED BY	15/1/2015 (DATE)	DRG.NO. C/ENGG/SR/SRSS-24/KADAPA/GA/001 / REV. 00
ED (Engg-S/S, T/L & Civil)				

Annex – 19.0

Agenda Item # 19.0

"Additional Agenda from PGCIL"

1	Additional Agenda	5 Pages

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)
पावरग्रिड

केन्द्रीय कार्यालय : "सौदामिनी" प्लॉट सं. 2, सैक्टर-29, गुडगाँव-122 001, हरियाणा
फोन : 2571700 - 719, फैक्स : 2571760, 2571761 तार 'नेटग्रिड'
Corporate Office : "Saudamini" Plot No. 2, Sector-29, Gurgaon-122 001. Haryana
Tel. : 2571700 - 719, Fax : 2571760, 2571761 Gram : 'NATGRID'

संदर्भ संख्या/Ref. Number C\CTU\S\SCM\Addl Agenda

Date: 19th Feb, 2015

Shri K.K Arya
Chief Engineer (SP & PA),
Central Electricity Authority
Sewa Shawan, RK Puram
New Delhi - 110 066.

Subject: Additional agenda regarding forthcoming 38th Standing Committee Meeting on Power System Planning in Southern Region – reg.

Dear Sir,

This is with reference to the forthcoming 38th Standing Committee Meeting on Power System Planning in Southern Region. In this regard, please find the enclosed additional agenda and it is requested to circulate the same among the constituents of Southern Region.

Thanking you,

Yours faithfully,

19/2/15

(Mukesh Khanna)
AGM (CTU-Planning)

Encl: As above

Copy to:

Member (Power Systems)
Central Electricity Authority
Sewa Bhawan, RK Puram
New Delhi – 110 066.

Agenda for forthcoming Standing Committee Meeting of Southern Region

1. PROCUREMENT OF ERS - SUB STATION

POWERGRID proposes to have ERS Sub Station in a large regional transmission system to take care of any evacuation constraint or natural calamities. This equipment mainly consists of Single Phase transformers, GIS switchgear and Control & Protection Panels which are mounted on trailers for quick transportation and installation. Estimated cost for each set is about 110-120 crores which may go down with Indigenization of components and due to competitive bidding process.

Trailer- mounted ERS-Substation can be installed in a shortest possible time, even adjacent to 400/ 220 kV Lines where ever space is available as and when exigency arises and for providing reliable power supply at any important load centre. ERS-Substation besides providing connectivity at 400/ 220kV level can cater load at 33kV level upto 33% of the Transformation Capacity of the ERS-Substation.

ERS-Substation shall be a temporary measure for providing Grid Connectivity at multiple Voltage levels.

A presentation in this regard was given to constituent members during special SRPC meeting held on 20.07.2011 at Bangalore.

It is proposed to procure two (2) numbers 400/220KV ERS Substations for Southern Region.

The said proposal was also discussed during 26th TCC/SRPC meetings on 19th & 20th Dec'14 and members had agreed to the proposal.

Members may concur the proposal.

2. PROCUREMENT OF 500MVA ICT AS SPARE INSTEAD OF 315 MVA ICT APPROVED UNDER RAMAGUNDUM TRANSMISSION SYSTEM

CERC vide tariff order dated 18.02.2014 against Petition no. 298/2010 on Ramagundum Transmission system allowed POWERGRID to procure one no. 400/220kV, 315 MVA transformer as spare. The newly procured transformer will replace the existing transformer and same is expected to be in service for at least

its useful service life of 35 years as notified in CERC Tariff Regulation 2014. In some of the substations in Southern Region existing 315 MVA transformers are being replaced with higher capacity to meet the load demand. Similarly load demand situation of substations under Ramagundam Transmission System will also increase in future. Procurement of 315 MVA transformer now and replace this with higher capacity in future will not be cost efficient. Hence procurement of higher capacity now will be techno-economic as future load growth can be taken care of. In view of this, it is proposed to procure one no. 400/220 kV, 500 MVA transformer instead of 400/220kV, 315 MVA transformer already approved by CERC.

The said proposal was also discussed during 26th TCC/SRPC meetings on 19th & 20th Dec'14 and members had agreed to the proposal.

Members may concur the proposal.

3. PROCUREMENT OF 3 NOS. 125 MVAR REACTORS INSTEAD OF 3 NOS. 50 MVAR REACTORS APPROVED UNDER RAMAGUNDUM TRANSMISSION SYSTEM

CERC vide tariff order dated 18.02.2014 against Petition no. 298/2010 on Ramagundum Transmission system allowed POWERGRID to procure 3 nos. Reactors as spare. Addition of Generation capacity and augmentation of matching transmission system in the past few years has led to increase in short circuit level of the system. As such, contribution of 50MVAr Shunt Reactor as a compensating device has got very little relevance as on date. In view of system requirement and to meet any exigency in the event of failure of 50MVAr Reactors in future, it is proposed that 3 nos. 125 MVAr reactors be procured as spare along with associated switching arrangement instead of 3 nos. 50 MVAR Reactors already approved by CERC.

The said proposal was also discussed during 26th TCC/SRPC meetings on 19th & 20th Dec'14 and members had agreed to the proposal.

Members may concur the proposal.

4. CONVERTING FIXED LINE REACTORS INTO SWITCHABLE LINE REACTORS IN OVER COMPENSATED LINES

It has been observed that due to reduction in line lengths generally after LILO at certain nodes, some lines as listed below are being overcompensated with the existing fixed Reactors. This is creating resonance in line section leading to vibration in Reactors causing damage to Reactor windings, core and bushings. Further some reactors can be converted into switchable line reactors for flexibility during operation. Detailed list is as below:

It is proposed that fixed Line Reactors installed in these lines be converted to switchable Line Reactors so that they may be utilised as Bus Reactors, as and when needed

S.No.	Name of the Line	Length (ckt km)	Capacity (MVAr)		Switchable (S) / Fixed(F)		% Compensation
			End I	End II	End I	End II	
1	Malakaram - Hyderabad-II (upto LILO point)	27.87	--	50	--	F	296
2	Gazwel-Hyderabad-II	62.5	-	50	-	F	132
3	Nellore-Tiruvellam-I & II	173	50	50	f	f	95
4	Kurnool - Gooty	112.60	--	50	--	F	73
5	Sriperumbdur-chitoor	105.7	50	-	F	-	78
6	Thiruvananthapuram-Tirunelvelli	160	63	-	F		65
7	Trichur-Palakkad- I & II	84	50	-	f	-	98
8	Udumalpet-Salem -II	137	63	-	F	-	76
9	Madurai-Karaikudi	130	63	-	F		80
10	Sriperumbadur-SV Chatram	18	50	-	F		458

10	Bangalore-Gooty	302	63	63	F	F	69
11	Kochi-Tirunelveli-I & II	231	63	63			90
12	Madurai-Trichy	130	50	-	F		63
13	Trichy-Nagapattinam-I	159	50		F		52
14	Trichy-Nagapattinam-II	159	63		F		65
15	Salem-Hosur-II	125	50	-	F		66

T

(1) & (4) was also discussed during 26th TCC/SRPC meetings on 19th & 20th Dec'14 and members had agreed to the proposal.

Members may concur the proposal.

5. REPLACEMENT OF 50MVAR BUS REACTOR WITH 125MVAR AT MYSORE

One No. 50 MVAR bus reactor is in service at Mysore SS for regulating over voltage at Mysore SS. From the voltage profile charts, it is observed that bus voltage at Mysore substation is more than 420kV even when the bus reactor is in service. The voltage profile for one year period is enclosed as **Annexure.** This shall adversely affect the life of the switchyard equipment. Further, there is no place in the yard for installation of other reactors to regulate this over voltage. Hence, it is proposed to install 1 No. 125 MVAR bus reactor at Mysore substation in place of 50 MVAR bus reactor. This work shall be done through additional capitalization. The removed 50 MVAR bus reactor can be used as spare for the region.