

## **Annex – 9.0**

### **Agenda Item # 9.0**

**“Tapping of Uravakonda- Jammalamadagu D/c Quad line with Gooty –Madhugiri 400kV D/c line”**

<b>1</b>	APTRANSCo letter dated 14.11.2014	1 Page
<b>2</b>	Tapping Proposal	1 Page
<b>3</b>	Base Case with Gooty wind injection	1 Page
<b>4</b>	Outage of Gooty Somanhally	1 Page
<b>5</b>	N-1 of Kurnool- Thiruvalam	1 Page

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED  
VIDYUT SOUDHA :: HYDERABAD

From:  
Chairman & Managing Director  
APTRANSCO,  
Vidyut Soudha,  
Hyderabad.

To:  
Chairman & Managing Director,  
Power Grid Corporation of  
India Limited, Soudhamini,  
Plot No-2, Sector No.29,  
Near IFCO Chowk,  
Gurgaon-122001.  
Haryana. Fax.: 0124-2571990.

*CMAD*  
*Dir. Proj. 2* → *In Mtg*  
*GM (SMART GRID)*  
*Sh. Mahesh*  
*1/12/14*  
*31/12/14*

Lr.No.CMD/CE/ 400 KV Cons./SE/D2-A2/F.JMD-UKD// D.No. 213 /14 Dt: 14 .11.2014

Sub: APTRANSCO - Tapping of 400 KV Uravakonda to Jammalamadugu QMDC line with Gooty to Madhugiri (Karnataka) TMDC line (PGCIL) near Pamidi villiage in Anantapur Distirict to evacuate wind energy from Urvakonda Substation – Regarding.

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APTRANSCO contemplated wind evacuation project to evacuate 3150 MW of wind power in and around Anantapur, Kadapa & Kurnool Districts with 3 nos. 400kV SS and 8 Nos. 220kV substations. The 400 KV Uravakonda substation is to be completed by the end of March'2015. By that time, the construction of evacuation lines from 400kV Uravakonda SS to Mahaboobnagar SS and 400 KV Uravakonda SS to 400 KV Jammalamadugu SS may not be completed. But, during the next wind generation season, 300 MW to 400 MW wind generation is to be evacuated.

Hence, It is proposed to tap the 400 KV QMDC line from Uravakonda substation (Andhra Pradesh) to Jammalamadugu Substation (Andhra Pradesh), which is under construction to the existing 400 KV TMDC PGCIL line from 400 KV SS Gooty (Andhra Pradesh) to 400 KV SS Madhugiri (Karnataka, which is kept in idle position), near Pamidi village in Anantapur District, Andhra Pradesh, for evacuation of the above power, until the construction of APTRANSCO evacuation lines are completed.

The tapping lines will be in operation from April'2015 to October'2015 till the end of Wind season.

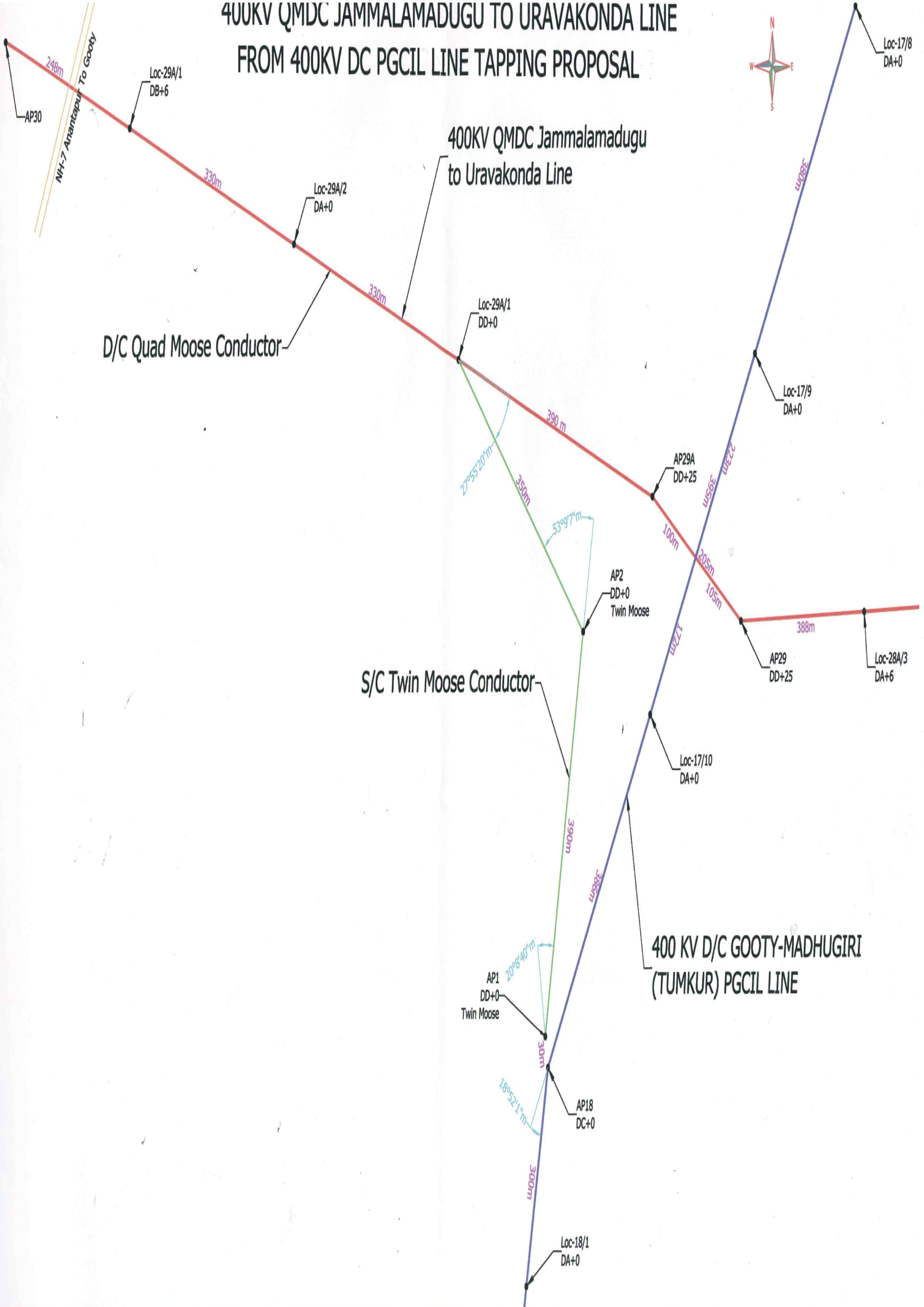
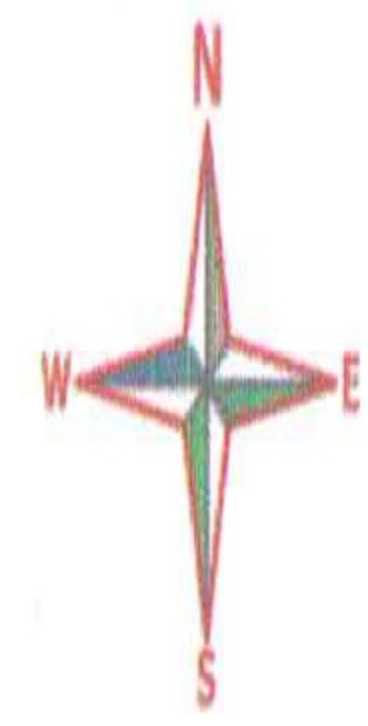
In this regard, it is requested to issue necessary orders to the concerned accordingly.

Yours faithfully,

*14/11/14*  
Chairman & Managing Director

*175/CMO*  
*1/12/14*  
*274/COO-CTO-P*  
*2-12-14*

# 400KV QMDC JAMMALAMADUGU TO URAVAKONDA LINE FROM 400KV DC PGCIL LINE TAPPING PROPOSAL



D/C Quad Moose Conductor

400KV QMDC Jammalamadugu to Uravakonda Line

S/C Twin Moose Conductor

400 KV D/C GOOTY-MADHUGIRI (TUMKUR) PGCIL LINE

AP30

Loc-29A/1 DB+6

Loc-29A/2 DA+0

Loc-29A/1 DD+0

AP29A DD+25

AP2 DD+0 Twin Moose

Loc-17/9 DA+0

AP29 DD+25

Loc-28A/3 DA+6

Loc-17/10 DA+0

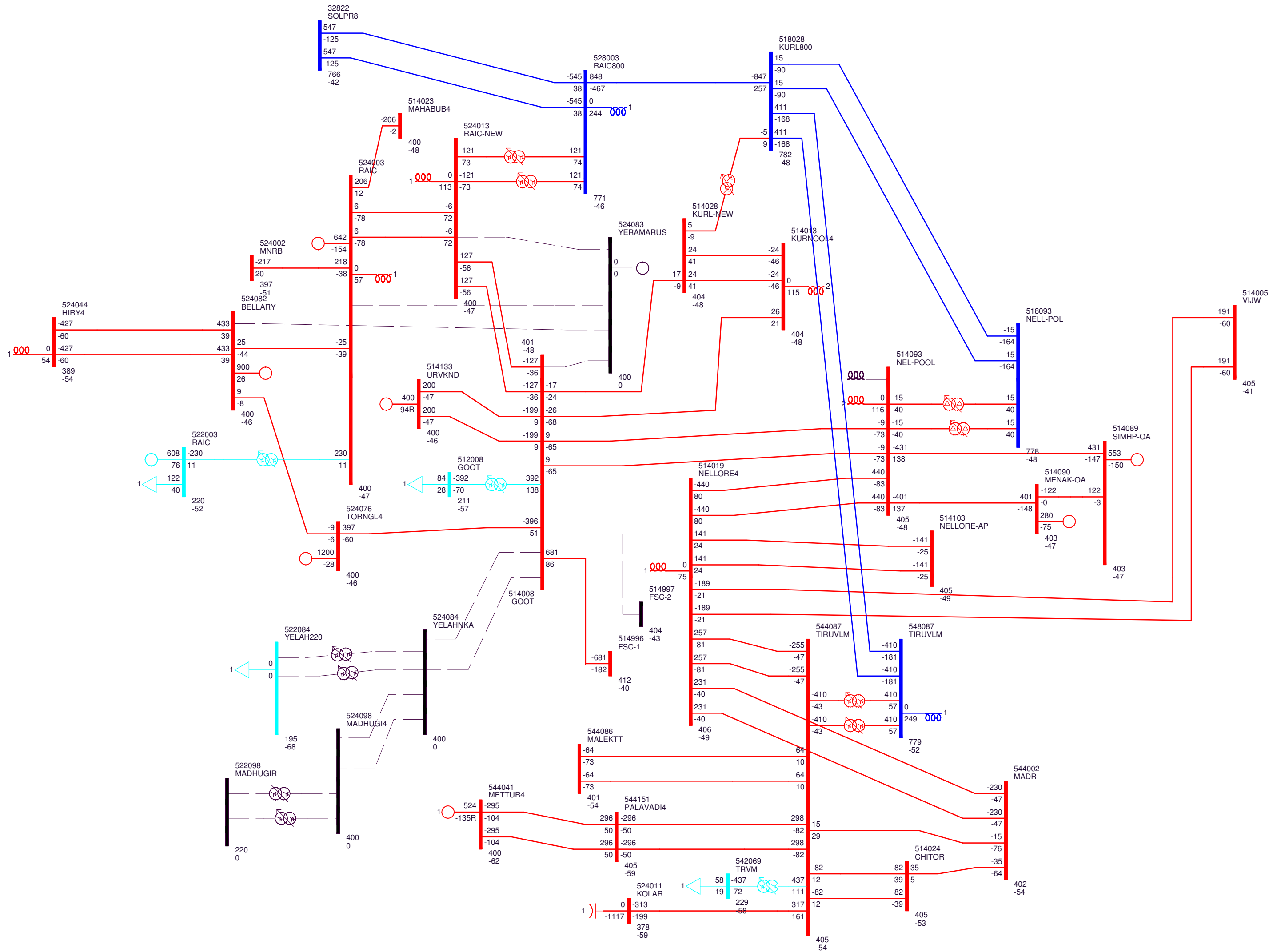
AP1 DD+0 Twin Moose

AP18 DC+0

Loc-18/1 DA+0

Loc-17/8 DA+0








**Annex – 10.0**

**Agenda Item # 10.0**

**“YTPS- Providing start-up power for Boiler light up and commissioning activities of unit 1”**

<b>1</b>	Minutes of 3 <sup>rd</sup> Feb, 2015 meeting at Raichur reg Start up power for Yermarus TPS	12 Pages
<b>2</b>	Yermarus Map	1 Page
<b>3</b>	Study-Exhibit- Base case without Yermarus	1 Page
<b>4</b>	Base case_N-1 of Kurnool- Thiruvalum	1 Page
<b>5</b>	Base Case_Outage of Gooty-Somanhally	1 Page
<b>6</b>	Case 1_with Yermarus	1 Page
<b>7</b>	Case 1_ N-1 of Kurnool- Thiruvalum	1 Page
<b>8</b>	Case 1_ Outage of Gooty-Somanhally	1 Page

फ़ैक्स/स्पीड पोस्ट  
FAX/SPEEDPOST

भारत सरकार केंद्रीय विद्युत प्राधिकरण दक्षिण क्षेत्रीय विद्युत समिति बेंगलूरु - 560 009	 सत्यमेव जयते	Government of India Central Electricity Authority Southern Regional Power Committee Bengaluru - 560 009	
Web site: www.srpc.kar.nic.in	e-mail: mssrpc@yahoo.com	Ph: 080-22287205	Fax: 080-22259343
सं/No.   SRPC/SE-II//2015/		दिनांक / Date	05.02.2015

1. Chief Engineer (ED), KPCL, Bengaluru
2. Chief Engineer (P&C), KPTCL, Cauvery Bhavan, Bengaluru
3. Chief Engineer (LD), KPTCL, Bengaluru
4. Director (SP&PA), CEA, New Delhi
5. DGM, CTU, PGCIL, Gurgaon
6. GM, SRTS-I, PGCIL, Secunderabad
7. ED, SRLDC, Bengaluru

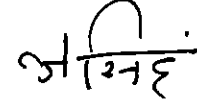
Sub: Minutes of the Meeting held on 3<sup>rd</sup> February 2015 at Raichur  
regarding startup power for Yeramarus TPS of KPCL.

Sir,

Please find enclosed Minutes of the Meeting held on 3<sup>rd</sup> February 2015 at  
Raichur regarding startup power for Yeramarus TPS of KPCL.

धन्यवाद / Thanking you,

भवदीय / Yours faithfully,



( असित सिंह / Asit Singh )

अधीक्षक अभियंता / Superintending Engineer

Copy to:

1. Chief Engineer (SP&PA), CEA, New Delhi
2. Technical Director, KPCL, Bengaluru
3. Director (Trans), KPTCL, Bengaluru
4. ED, SRTS-I, PGCIL, Secunderabad
5. COO, CTU, PGCIL, Gurgaon.



**Minutes of meeting held on 3<sup>rd</sup> February 2015 at Raichur, Karnataka regarding -  
Start up power and commissioning activities of unit-1 of the Yeramarus  
TPS(2x800 MW) of RPCL / KPCL in Raichur District**

List of participants is enclosed at Annexure-I. Meeting notice is at Annexure-II.

**Background:**

1. KPCL vide their letter dated 24/12/2014 had informed that Raichur Power Corporation Ltd.(RPCL, a JV of KPCL, BHEL and IFCI), is implementing a 2x800 MW Yeramarus Thermal Power Station at Raichur, Karnataka, for which 100 MVA start-up power is required for boiler light up and other commissioning activities of YTPS unit - 1. RPCL have informed that KPTCL, in order to arrange the start-up power for the plant, has awarded the EPC contract to M/s KEC for executing work of LILO-ing the existing RTPS - Davangere 400kV S/C Line of KPTCL at a distance of 11km from YTPS. This work is under progress and may take time to complete. Therefore, RPCL / KPCL had requested to accord permission for tapping / LILO-ing of Raichur - Gooty 400kV D/C (Quad ) line of PGCIL, which is at a distance of 4.5 km from YTPS and is en-route to the proposed LILO point of RTPS - Davangere S/C Line. (Survey is at Annexure-III).
2. This issue was also discussed in the 25<sup>th</sup> TCC meeting held on 19/12/2014, wherein it was suggested that KPCL may take up the matter with Standing Committee of PPSR.
3. Looking at the urgency, SRPC has convened the present meeting involving officials from CEA, SRPC, CTU, PGCIL, SRLDC, KPTCL and KPCL. The meeting was preceded by visit to the Switchyard of Yeramarus TPS and the line under construction, upto the LILO Point. The observations of the site visit and the discussions held in the meeting are as follows:

**Observation of construction activities:**

4. The Yeramarus 400 kV Switchyard is under construction. Part of this switchyard, to enable the YTPS plant to receive the start-up power, may be

completed by 15<sup>th</sup> march 2015. As reported by project authorities, following activities are pending:

- a) Readiness of Battery System.
  - b) Readiness of ACDB and DCDB
  - c) Cable Laying and termination Works
  - d) Switchyard Illumination Works
  - e) Commissioning of Station transformer – 1
  - f) Protection Panel Testing and Commissioning
  - g) Fire Hydrant Works
  - h) PLCC Works (Under KPTCL's Scope)
  - i) Wave Trap Works
  - j) Electrical Inspectorate Clearance
  - k) Other Works like earthing, civil structure for Panels, etc.
5. KPCL / BHEL informed that after Boiler Light-up, Steam blowing would be carried out and BFP Testing would be carried out which may take 4 – 5 weeks.
  6. During the site visit, it was noted that LILO of RTPS – Raichur (PG) was being proposed instead of the Raichur – Gooty Line, as suggested in their letter.
  7. The 11 km long line upto LILO point of Raichur - Davangere 400 kV S/C has 43 No. of towers, out of which 16 are M/C towers. Construction status of line is as below:

	Total Number of Towers	M/C Towers in the section	Stub setting completed	Tower erection completed	Stringing completed
Upto 4.5 km**	15	11	15	8	0
Upto 11km^^	43	16	38	18	0

Note: \*\* Upto RTPS-Raichur (PG) Line

^^ Upto Raichur - Davangere

8. The first 4.5 km involves 3 Nos of 220 kV Line Crossings. 1 No. of Highway Crossing, 1 No. of non-electrified Railway Crossing. Out of the 15 towers, 11

are M/C Towers, of which 6 are still under erection. Railway Clearance is under process.

**Deliberations during the meeting:**

9. The LILO line under construction is crossing the RTPS – Raichur (PG) 400kV line between two suspension towers and the tension towers are available after 6 towers on either sides. In case LILO for RTPS – Raichur (PG) is to be carried out, then it would involve construction of three angle towers including construction of one tension tower in the alignment of existing line, cutting of existing conductors for connecting LILO and outage of the RTPS-Raichur 400kV transmission line for about two(2) weeks for the activity.
10. Regarding outage of the RTPS-Raichur 400kV transmission line, SLDC of Karnataka and POSOCO stated that such an outage cannot be agreed during these peak months.
11. It was also noted that LILO of Raichur - Davangere Line could be achieved within 40 – 50 days and completion of LILO of RTPS - Raichur (PG) would also take around same 40 – 50 days. Accordingly, the option of LILO of the RTPS – Raichur (PG) was dropped.
12. Another option, of supplying the start-up power at 110 kV, was also discussed. However, it was found not feasible.
13. Regarding complete ATS for YTPS, KPTCL informed the following :
  - The YTPS - Bellary PS and the YTPS - Gulbarga 400kV D/C quad lines would share the corridor initially for about 5 – 6 kms from YTPS switchyard.
  - So far, KPTCL has awarded works for only 11 km section of the YTPS-Bellary PS line. This which would be used to extend the line upto Bellary Pooling Station as part of the planned ATS.
  - NIT for remaining portion of YTPS-Bellary PS is to be floated by end of February, 2015.


- Survey for YTPS - Gulabarga has been completed. Land for Gulabarga S/S has been acquired. However tendering for the S/S and Line is yet to be taken up.
  - Works for the Bellary Pooling Station and the Bellary - Madhugiri 400kV line have been awarded.
  - The land for C.N. Hally S/S is yet to be identified. The survey of associated lines, connecting C.N. Hally are also yet to be taken up.
14. CEA, CTU, POSOCO and SRPC observed that without completion of the entire ATS approved for YTPS, evacuation of power from RTPS / YTPS Complex may have to be curtailed.
15. It was also agreed that TTC between NEW Grid and SR Grid should not be affected due to injection of power by YTPS even for commissioning activities.
- 16. After discussions, following was concluded:**
- (i) KPTCL will commission the entire transmission system, as was planned and approved in the Standing Committee, for enabling evacuation of power from YTPS as early as possible. In the absence of the planned ATS, it would be difficult to evacuate power from YTPS.
  - (ii) KPCL will complete the pending works in YTPS Switchyard so as to make it ready to receive start-up power for YTPS Unit 1. From discussion with KPCL & BHEL, it was noted that they would be able to complete the pending works in 40-50 days.
  - (iii) KPTCL would expedite the works on the entire line from YTPS to LILO point of Raichur TPS – Davangere 400 kV S/C (of KPTCL) for the purpose of start-up power to YTPS Unit 1. KPTCL informed that they would complete the entire section within 40-50 days.
  - (iv) KPCL was requested to furnish the status of BoP like Coal Handling, Ash Handling, DM Water & Cooling Water Arrangements etc. They would also furnish the commissioning schedule.

## MEETING HELD ON 02-02-2015 (CEA,PGCIL,KPTCL &amp; RPCL)

SL. No.	NAME Sriyuths	DESG	ORGANISATION	SIGNATURE
1	Laxman T. Kabade	Chief Engineer	KPCL	
2				
3				
4				
5	H. NOORJASHA	EE	RPCL-CD	
6	A. K. SIVAN	AE	SRCC, B'lore	
7	S. R. KABADE	EE(M)	RPCL(M)	
8	P. Samedara Jain	EE(E)	RPCL(E)	
9	Manjunath H O J	SEM	RPCL(M)	
10	E. Prahlad	SEE	KPTCL, MRB	
11	Smt D. K. Gouramma	SEE	RPCL	
12	R. D. Chandrashekhara	CE/Zone	KPTCL	
13	G. GHEMSHA.	CEE-SDC	KPTCL	
14	S. V. MANJUNATHA	SEE(TECH)	KPTCL	
15	H. A. LAKSHMINARSIHMA	SEC/CEED	RPCL	
16	G. Narayana Gowdy	CEM/REP	RPCL	
17	A. R. Mohanty	GM/BHEL BIL	BHEL P.S.S.R	
18	R. KUMAR	SEM/REP	RPCL	
19	Ramesh kumar. M	AE	KPTCL	
20	K.R. Gopinaidu	Manager. Projects	KEC Inter	
21	Georgy	EE/MD/REP	KPTCL	
22	Rajesh. M	AE/MD/REP	KPTCL	
23	Ghouse Maimuddin	AE/REP	RPCL	
24	Nahadevappa	AE(TE) RPCL	RPCL	
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MEETING HELD ON 02-02-2015 (CEA,PGCIL,KPTCL & RPCL)

Sl. No.	NAME Sriyuths	DESG	ORGANISATION	SIGNATURE
1	P.R. Raj Kumar	ED	SRLDX	<i>[Signature]</i>
2	Pardeep Jindal	Director	CEA	<i>[Signature]</i>
3	ASIT SINGH	SE	SRPC	<i>[Signature]</i>
4	V. THIRAKANTAN	MS G.M.	POWERGRID	<i>[Signature]</i>
5	M. VENKATESWARLO	ASST. G.M.	POWERGRID	<i>[Signature]</i>
6	J. RAMAKRANTHA	EE/SLDC	KPTCL	<i>[Signature]</i>
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भारत सरकार केंद्रीय विद्युत प्राधिकरण दक्षिण क्षेत्रीय विद्युत समिति बैंगलूरु - 560 009	 सत्यमेव जयते	Government of India Central Electricity Authority Southern Regional Power Committee Bengaluru - 560 009	
Web site: www.srpc.kar.nic.in	e-mail: mssrpc@yahoo.com	Ph: 080-22287205	Fax: 080-22259343
सं/No. SRPC/SE-II//2015/ 497 - 508		दिनांक / Date	23.01.2015

1. Chief Engineer (ED), KPCL, Bengaluru
2. Chief Engineer (P&C), KPTCL, Cauvery Bhavan, Bengaluru
3. Chief Engineer (LD), KPTCL, Bengaluru
4. Director (SP&PA), CEA, New Delhi
5. DGM, CTU, PGCIL, Gurgaon
6. GM, SRTS-I, PGCIL, Secunderabad
7. ED, SRLDC, Bengaluru

Sub: Meeting on 3<sup>rd</sup> February 2015 (Tuesday) at Raichur regarding startup power for Yeramarus TPS of KPCL – Temporary Arrangement.

Sir,  
In the 25<sup>th</sup> Meeting of T&C held on 19<sup>th</sup> December 2014 following had been noted in respect of startup power for Yeramarus TPS unit:

- KPCL had requested for startup power for Yeramarus TPS by tapping 400 kV Raichur-Gooty line of PGCIL.
- KPTCL had informed that startup power was required at 400 kV level. Tapping/LILO of Raichur-Gooty lines had been suggested and the matter had been taken up with CTU.
- SRLDC and PGCIL had opined that such type of scheme may not be feasible as per regulations. Margins available for downward transfer of power may also get affected in case other evacuation lines did not come up and this is used as injection of power also.
- It was noted that Hon'ble CERC was already hearing a petition regarding LILO arrangements.
- KPCL had been suggested to take up the matter with Standing Committee on PPSR.

KPCL had been stressing on urgent requirement of startup power to proceed with initial commissioning activities which would enable to synchronize Unit-I with coal by March 2015. KPTCL/KPCL had suggested temporary arrangement as the planned connectivity by KPTCL(LILOing of existing 400 kV

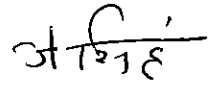
S/C line between RTPS and Davangere) was yet to be completed. KPCL letter dated 24<sup>th</sup> December 2014 addressed to CEA is enclosed as **Annexure**.

In this regard, a site visit and a Meeting is proposed to be held on **3<sup>rd</sup> February 2015 (Tuesday) at Raichur**. KPCL/KPTCL are requested to make necessary arrangement for the Meeting.

Kindly make it convenient to attend the Meeting.

धन्यवाद / Thanking you,

भवदीय / Yours faithfully,



( असित सिंह / Asit Singh )

अधीक्षक अभियंता / Superintending Engineer

Encl: As above

Copy to:

1. Chief Engineer (SP&PA), CEA, New Delhi
2. Technical Director, KPCL, Bengaluru
3. Director (Trans), KPTCL, Bengaluru
4. ED, SRTS-I, PGCIL, Secunderabad
5. COO, CTU, PGCIL, Gurgaon.



3/4

No: A1L1PCTP/CEA/340

Date: - 24.12.2014.

To:

The Member Secretary  
Central Electricity Authority &  
Chairperson, Standing Committee,  
Sewa Bhawan, R.K. Puram,  
New Delhi - 110066

Dear Madam,

Sub: - RPCL - YTPS - Providing start-up power for Boiler light up  
and commissioning activities of Unit-1....reg.

\*\*\*\*

Raichur Power Corporation limited (RPCL) a joint venture company of M/s Karnataka Power Corporation Limited (KPCL), M/s BHEL and M/s IFCI is implementing Yermarus Thermal Power Station (YTPS - 2 x 800 MW units) at Chikkasugur, Raichur District, Karnataka State.

In this regard, this is to state that erection works of YTPS Unit-1 are in full swing and commissioning activities are scheduled to commence from 4<sup>th</sup> week of January-2015. Erection works of 400KV Switchyard are also under completion & 400KV system will be ready to receive the start-up power by 15<sup>th</sup> January-2015.

100MVA start-up power is required to start Boiler Light up and other commissioning activities of YTPS Unit-1.

Under the circumstances explained above, it is requested to accord permission for tapping/LILO'ing of 400 KV DC quad line running between RTPS and Gooty (Owned by M/s PGCIL) which is running at a distance of about 4.50 km from Yermarus plant since works of LILO'ing the existing 400 KV SC line running between RTPS and Davengere for a distance of 11 KM is not yet completed and may take some more time.

In this connection, the Managing Director, KPTCL has also written a D.O letter to Executive Director, M/s PGCIL vide letter No.KPTCL/MD/PS/2014-15/110 dated 2nd December 2014.

*[Handwritten signature]*  
27 MSROC / 1075175  
20/12/14 5/1/5

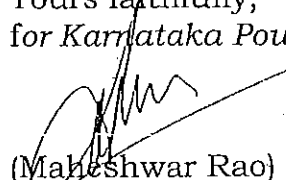
4/4

It is requested to examine the matter on top-priority and arrange to provide the start-up power by 15<sup>th</sup> of January 2015 to proceed with the initial Commissioning activities, so that we will be able to synchronise the Unit-1 with Coal by March 2015.

Please acknowledge the receipt of this letter.

With regards,

Yours faithfully,  
for Karnataka Power Corporation Limited

  
(Maheshwar Rao)  
Managing Director

Sri.G.Kumar Naik,  
Managing Director,  
Karnataka Power Transmission Corporation Ltd.,  
1st floor, Cauvery Bhavan  
BANGALORE- 560 009

✓ The Member – Secretary, SRPC,  
CEA, No. 29, Race Course cross road  
Bangalore -560001

Executive Director, PGCIL,  
SRTS-I, Regional Headquarters,  
No. 6-6-8/32 & 395E,  
Kavadiguda Main road,  
Secundarbad -500080,  
Telangana State

Cc: Technical Director (Transmission),  
Karnataka Power Transmission Corporation Ltd.,  
1st floor, Cauvery Bhavan  
BANGALORE- 560 009 -for infn. & needful

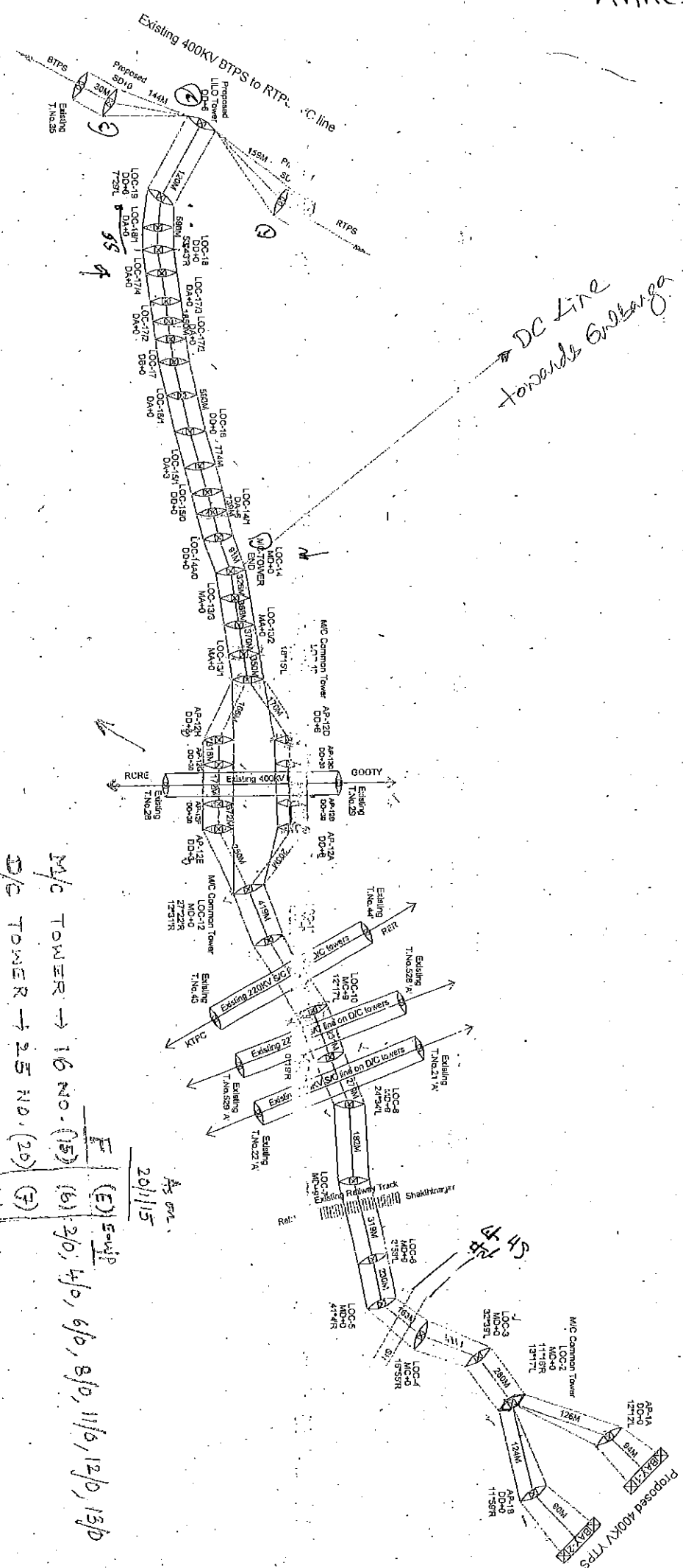
Cc: Chief Engineer (Elect)  
Planning & Co-Ordination  
KPTCL, Cauvery Bhavan  
Bangalore 560 009.

Cc: Chief Engineer (Elect), Corporate Planning, Gulbarga – for infn. & needful

Cc: Chief Engineer (Elect), KPTCL, Gulbarga – for infn. & needful

TD  
COO/ RPCL  
CE (TD)/CE(E)/RPCL

Conducting Detailed Survey for construction of 400KV M/C Quad Moose Evacuation line from "YARAMARUS TPS" to LLO the existing RTPS to BTPS S/C line

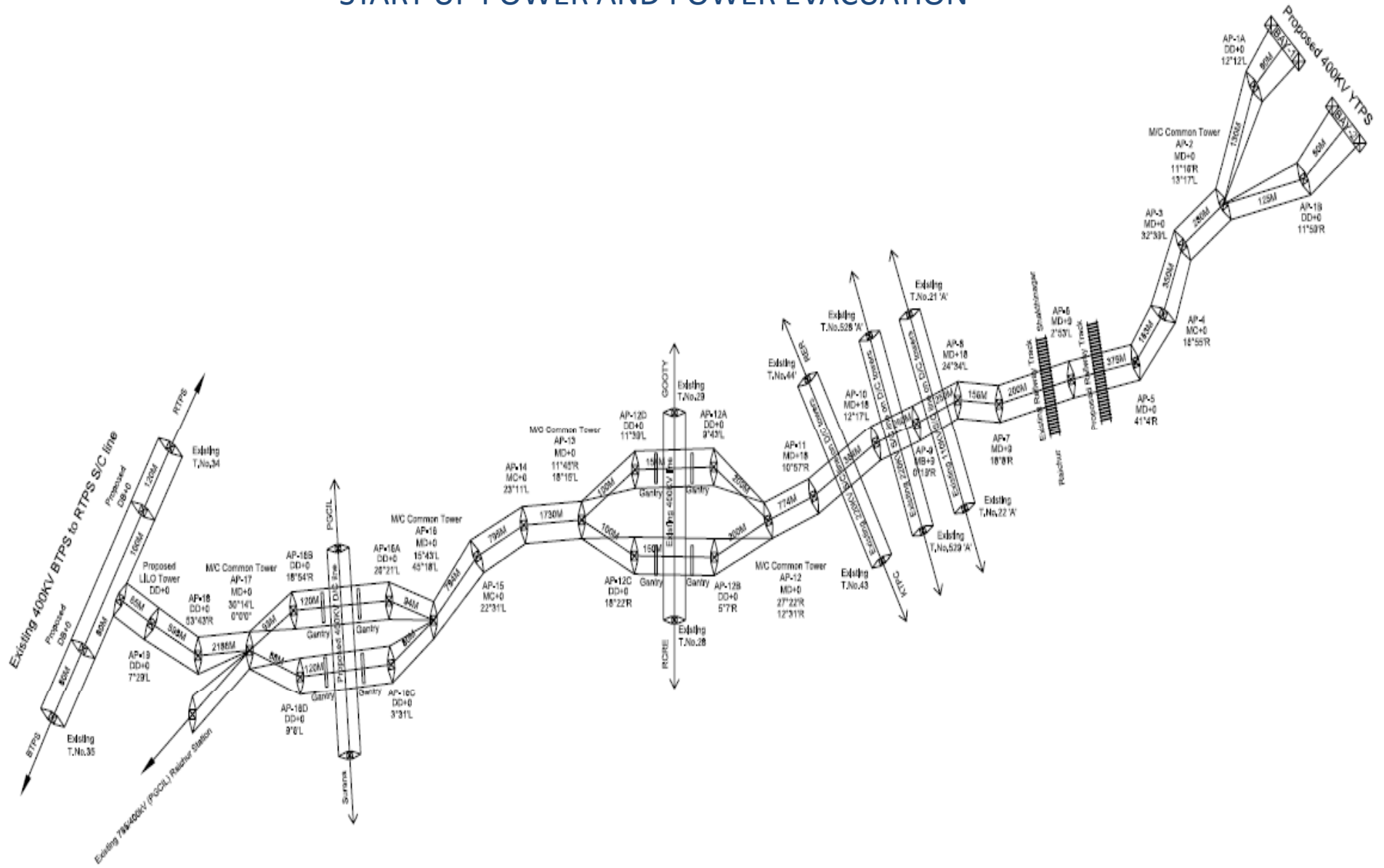


M/C TOWER → 16 NO. (15)  
 D/C TOWER → 25 NO. (20)  
 S/C TOWER → 02 NO. (1)  
 43 NO. (35) 13

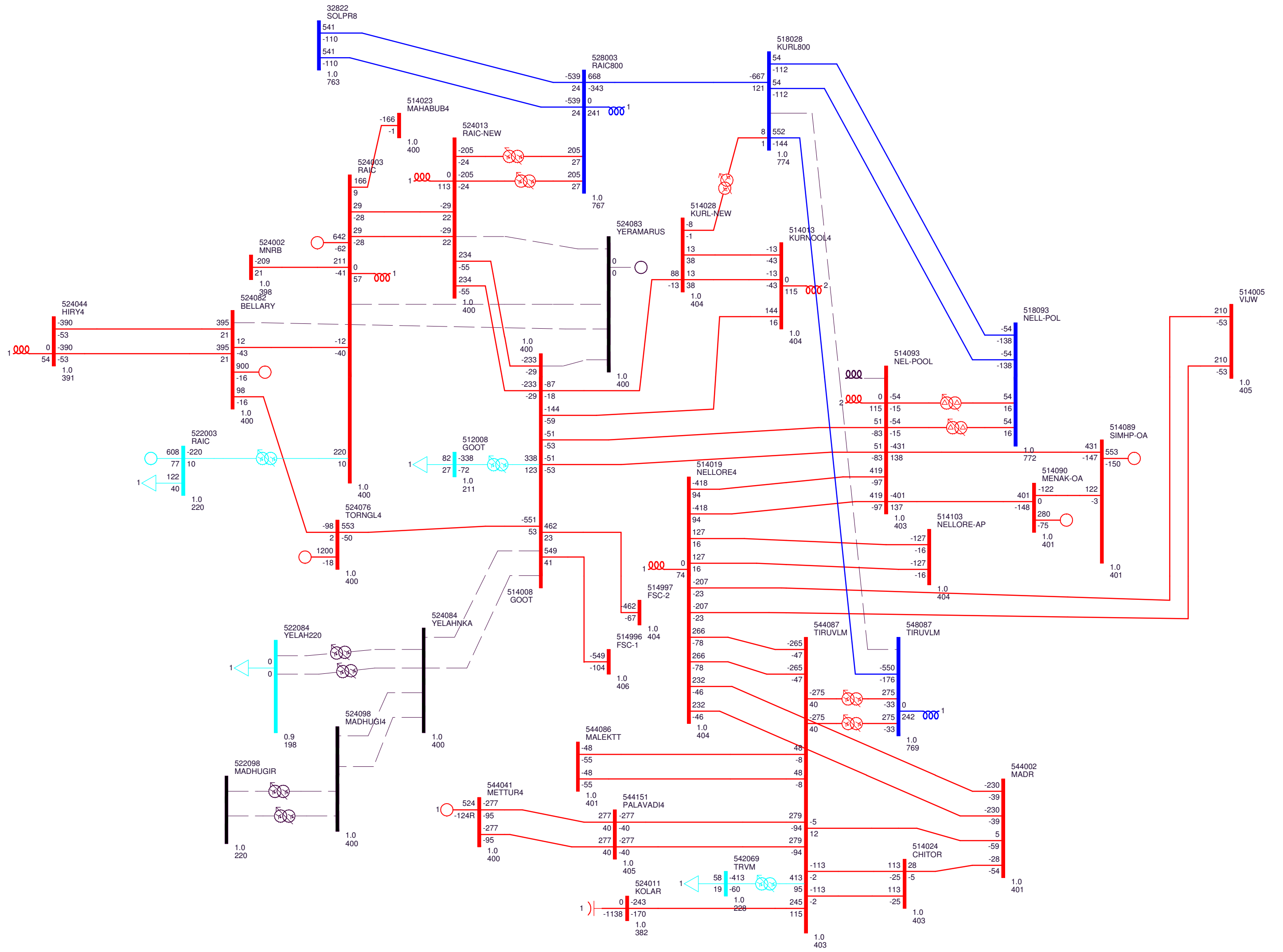
20/1/15

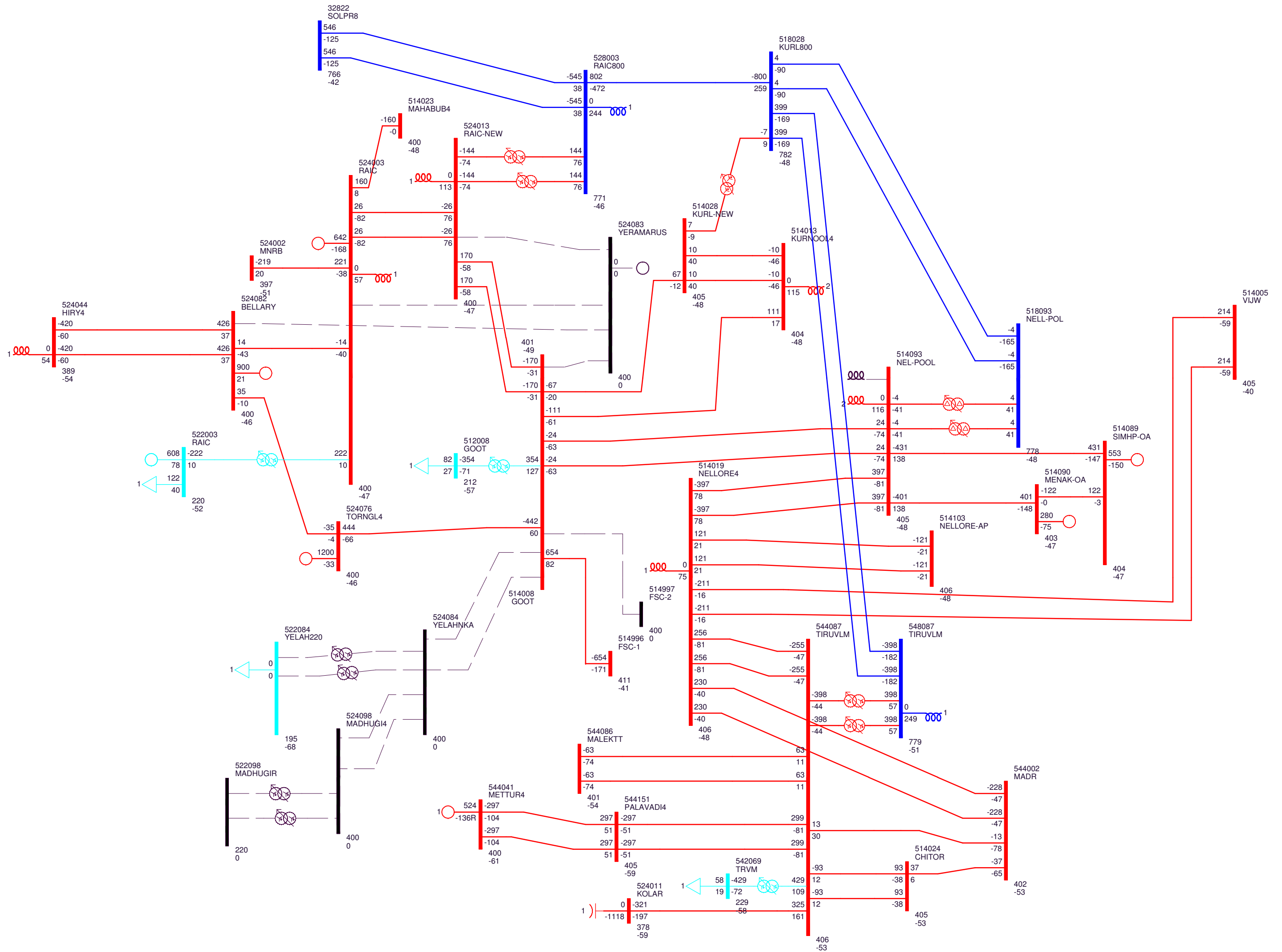
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# START UP POWER AND POWER EVACUATION





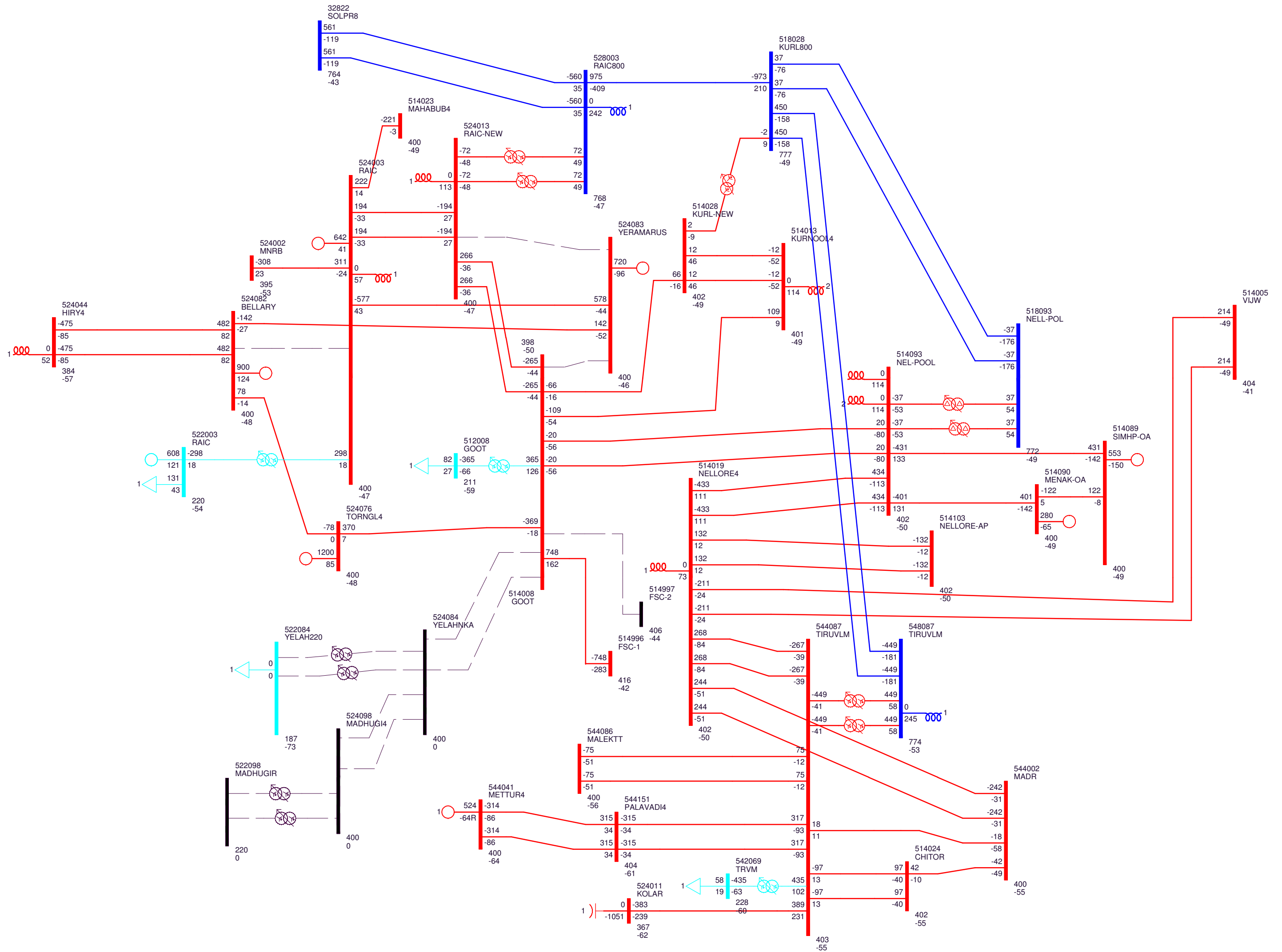










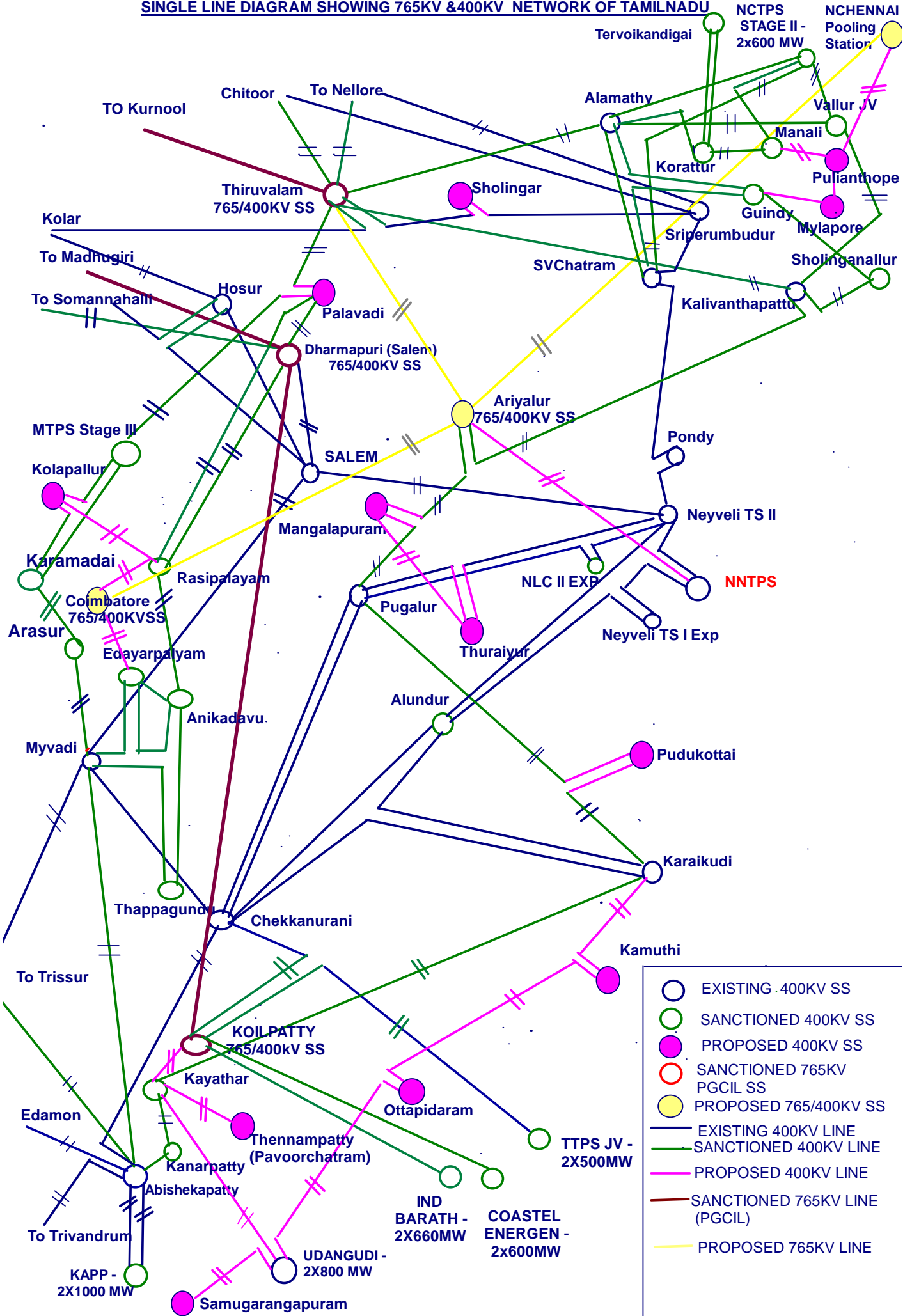


**Agenda Item # 11.0**

**“Provision of space at various substations of POWERGRID”**

<b>1</b>	Single line Diagram	1 Page
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**SINGLE LINE DIAGRAM SHOWING 765KV & 400KV NETWORK OF TAMILNADU**



**Annex – 12.0**

**Agenda Item # 12.0**

“TNEB issues”

<b>1</b>	TANTRANSCO letter no Lr.No.CE/Plg.&R.C/SE/SS/EE1/AEE1/F. Stg.committee/D. 444 dt. 23.12.14	3 Pages
<b>2</b>	Study Results	8 Pages
<b>3</b>	Extract from 37 <sup>th</sup> SCPSPSR	7 Pages

**TAMILNADU TRANSMISSION CORPORATION LTD.**  
(Subsidiary of TNEB Ltd.)

From

K.Rangaraj, B.E.,M.C.A.,F.I.E.,  
Director/Transmission Projects,  
TANTRANSCO,  
144, Anna Salai,  
Chennai -2.

To

√ The Member (Power System),  
Central Electricity Authority,  
Sewa Bhavan, R.K.Puram,  
New Delhi 110 066.

Lr.No.CE/Plg.&R.C/SE/SS/EE1/AEE1/F. Stg.committee/D. ~~444~~ dt. 23.12.14

Dear Sir,

Sub: M/S.SEPC 1X525MW IPP – Load Flow Study to finalise the  
Power Evacuation - CEA approval – requested - reg.

\*\*\*\*\*

**1.0.** M/S.SPIC Electric Power Corporation Private Ltd (SEPC) is proposed to establish 1X525MW power plant in Tuticorin as an Independent Power Producer (IPP) of TANGEDCO. TANGEDCO has signed power purchase agreement (PPA) with SEPC for the entire capacity in the year 1998 and the PPA has been further amended in 2012, based on the clarification from MoP regarding Tariff policy 2006 and Hon'ble TNERC order. Further, SEPC has stated that they have obtained necessary statutory clearances and awarded the work and it is expected to be commissioned in the year 2017 -2018. They have applied for Grid connectivity to TANTRANSCO.

**1.1** The following scheme is proposed for the above project

"400kV DC line to the proposed Ottaipidaram 400/230-110kV substation."

**1.2.** For the Udangudi projects (2X660MW + 1X800MW) evacuation scheme has been approved with following connectivity in the 37<sup>th</sup> Standing Committee meeting.

- i. 400kV DC Quad line to the Kayathar 400kV SS.
- ii. 400kV DC line to the proposed Samugarengapuram 400/230-110 kV SS.

iii. 400kV Quad DC line to the proposed Ottapidaram 400/230-110KV SS.

Now the work is expected to be awarded shortly for the Udangudi Phase-I 2X660MW capacity only. Further, the capacity of Udangudi phase II has been revised from 1X800MW to 2X660MW and there is a proposal for Udangudi phase -III 2X660MW also. Hence, it is suggested that for the Udangudi -Phase II and Phase III projects, evacuation may be finalised at a later date at 765kV level depending on materialisation of the projects.

**1.3.** Since the evacuation scheme of Udangudi is approved for the entire capacity of 2X660MW + 1X800MW, the SEPC of 1X525MW capacity may be accommodated in Ottapidaram itself in place of Udangudi phase II - 1X800MW.

**2.0** Further for the Pulianthope 400/230kV substation the following scheme has been approved in the 37<sup>th</sup> standing committee meeting.

"400kV DC Quad line from the proposed North Chennai Pooling Station and 400 kV DC line from Manali 400/230-110 KV Substation."

**2.1.** The existing 230kV Tondiarpet – Basinbridge – Mylapore 230kV feeder in Chennai area is fully loaded during summer peak period. This feeder is catering the main Chennai city load. To avoid this over loading and to cater the future load demand of Chennai city, Pulianthope 400/230kV SS has been proposed and the work for awarding the contract is under progress.

**2.2** As the North Chennai Pooling station takes some time to materialise, it is suggested that 400kV SC line may be erected using the existing 230kV corridor from North Chennai Stage II power plant to Pulianthope 400kV SS as a temporary measure. After establishment of North Chennai Pooling station, the 400kV line will be shifted from NCTPS stage II to Pooling station. Approval is required for taking up the above scheme.

**3.0** For the Madurai region, one number 400kV load substation at Usilampatty is proposed with the following connectivity.

- 400kV DC connectivity with Kamuthi 400kV SS.
- 400kV DC connectivity with Thappagundu 400kV SS.

**4.0** In view of the above, it is requested that the approval may be given for the above schemes and also may be taken up in the next Standing Committee meeting for approval.

*(Handwritten signature)*  
23/12/14

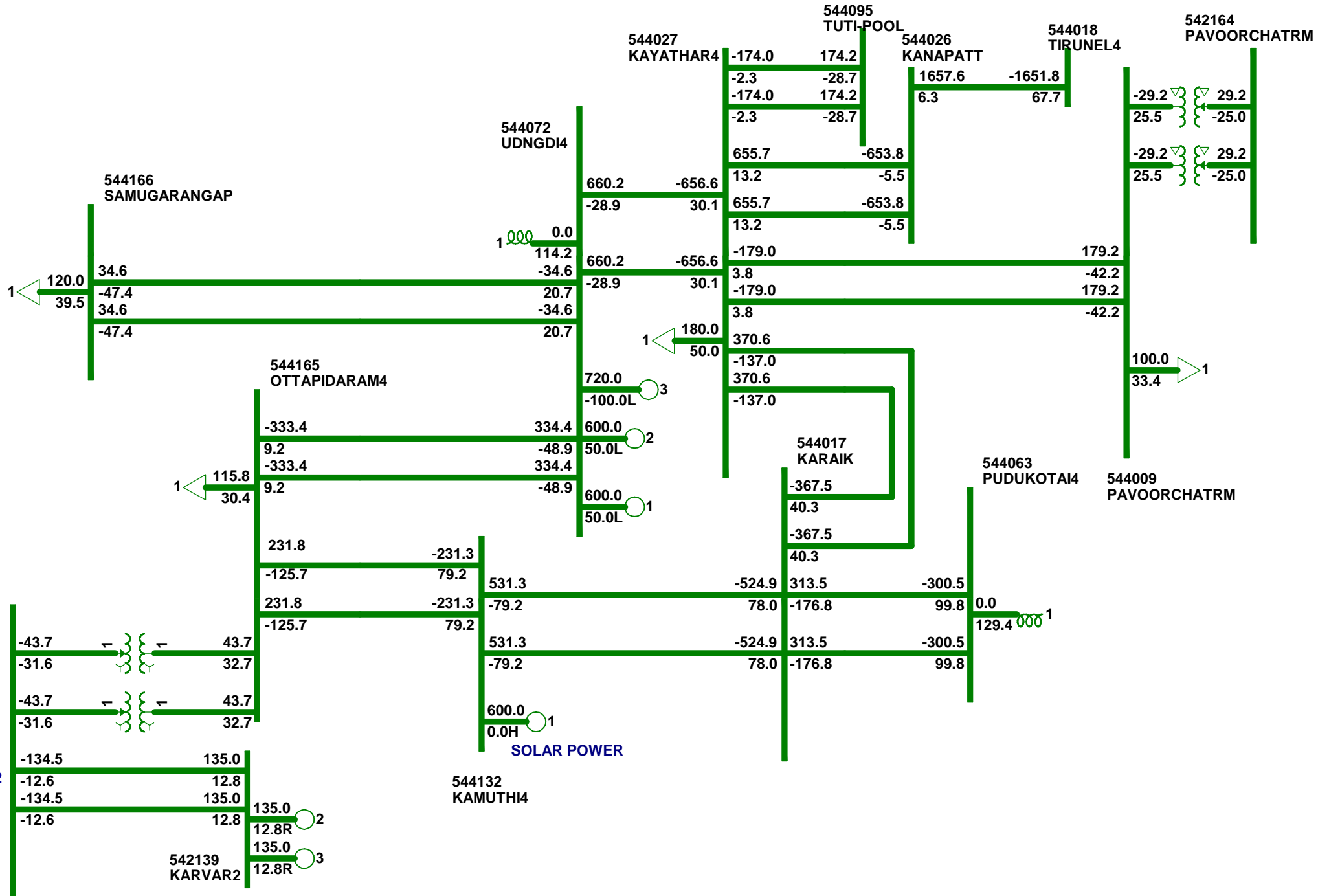
( K.Viji)  
Chief Engineer/Planning & R.C  
For Director/Transmission Projects

2/2

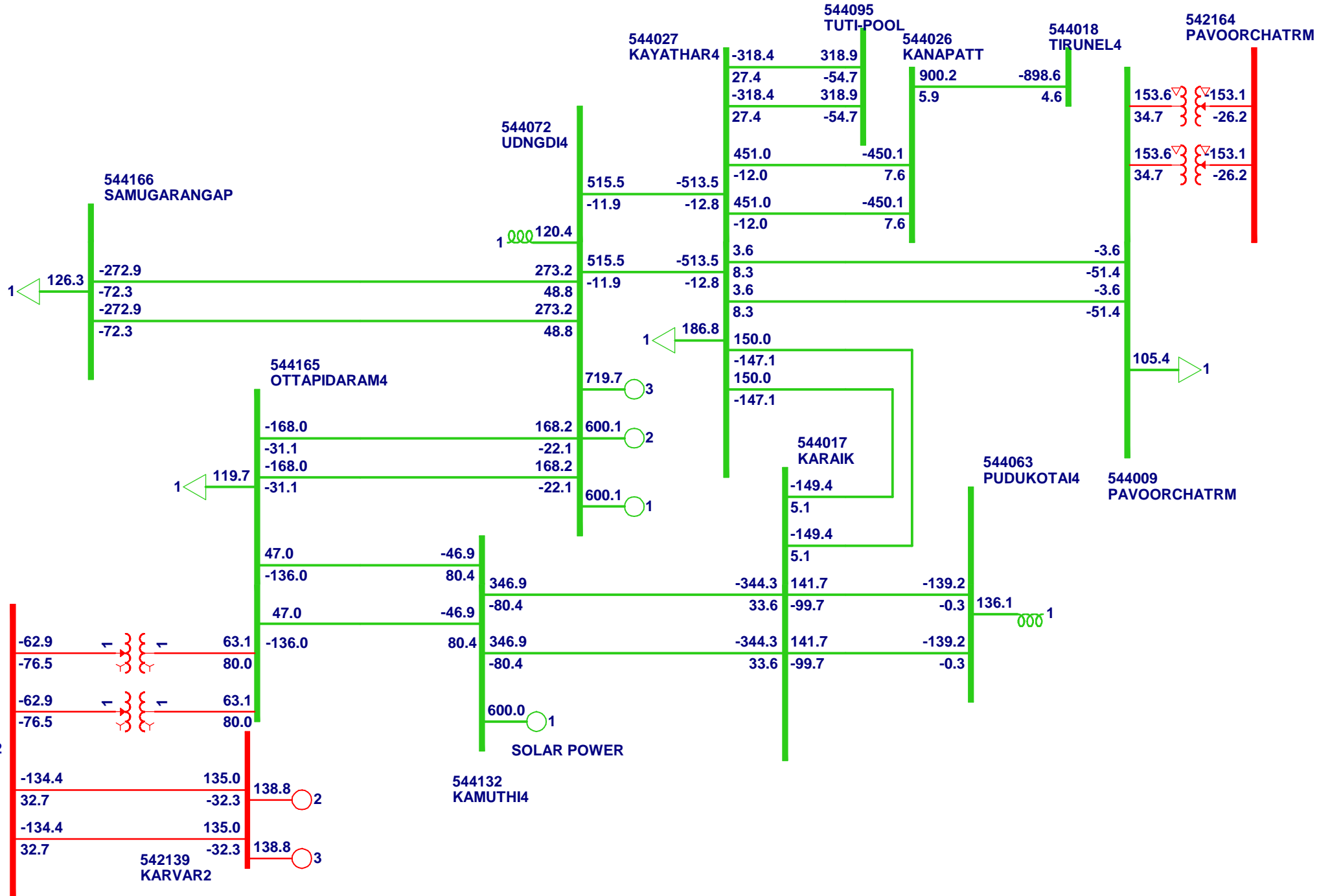
Copy to Chief Engineer/PPP



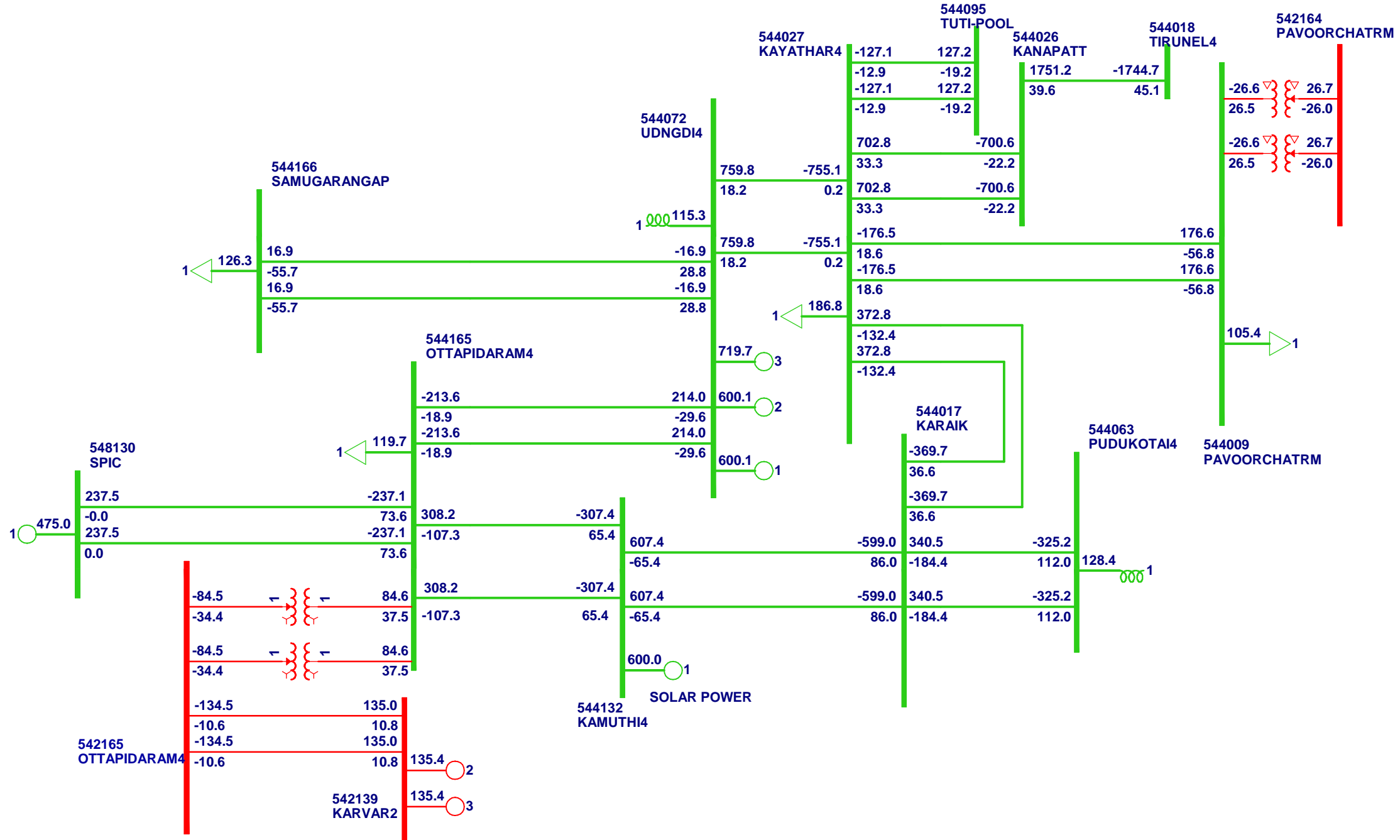
# BASECASE -FW : WITH UDANGUDI 3 UNITS + WITHOUT SPIC GENERATOR



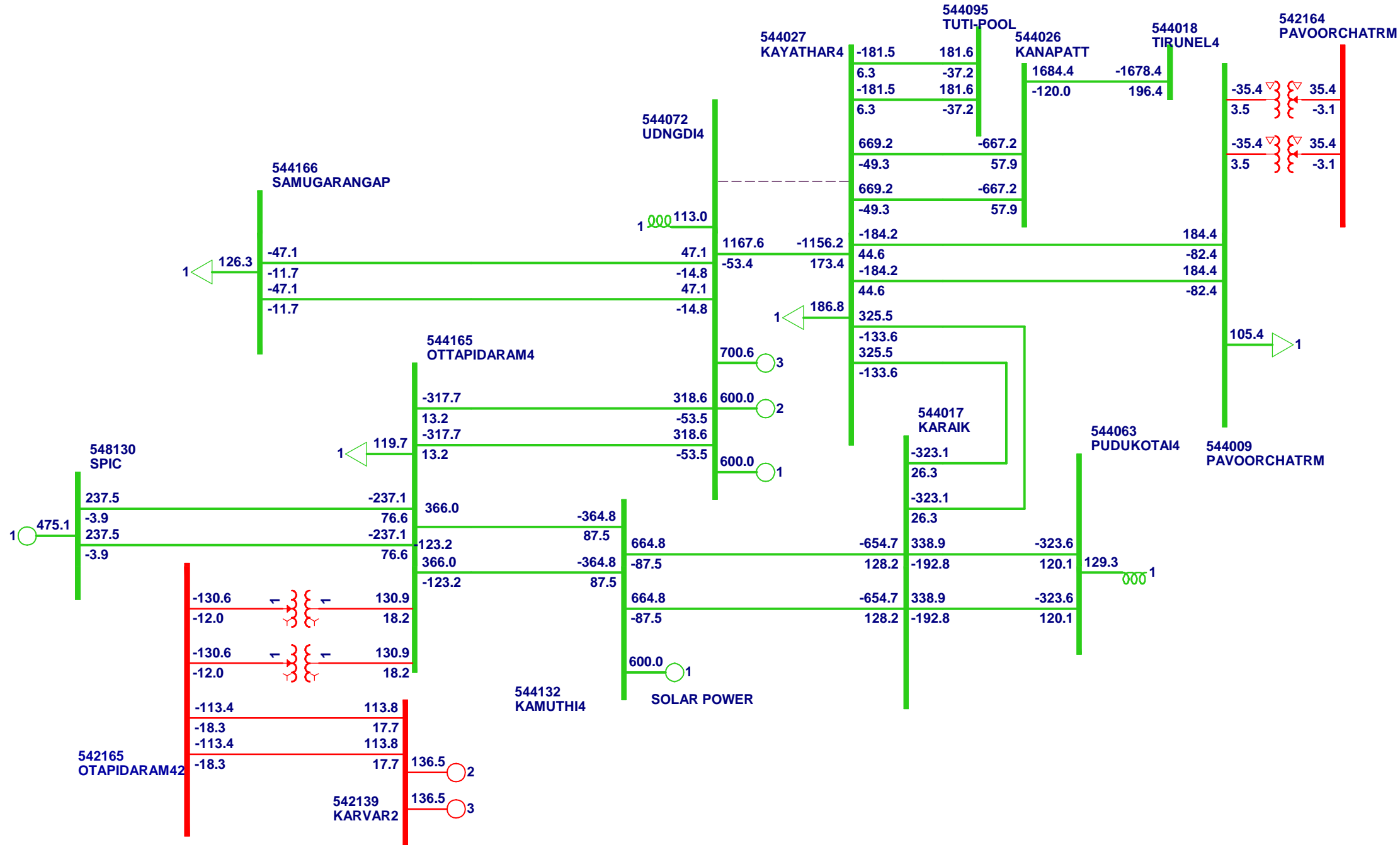
# BASE CASE-NW: WITH UDANGUDI 3 UNITS + WITHOUT SPIC GENERATOR



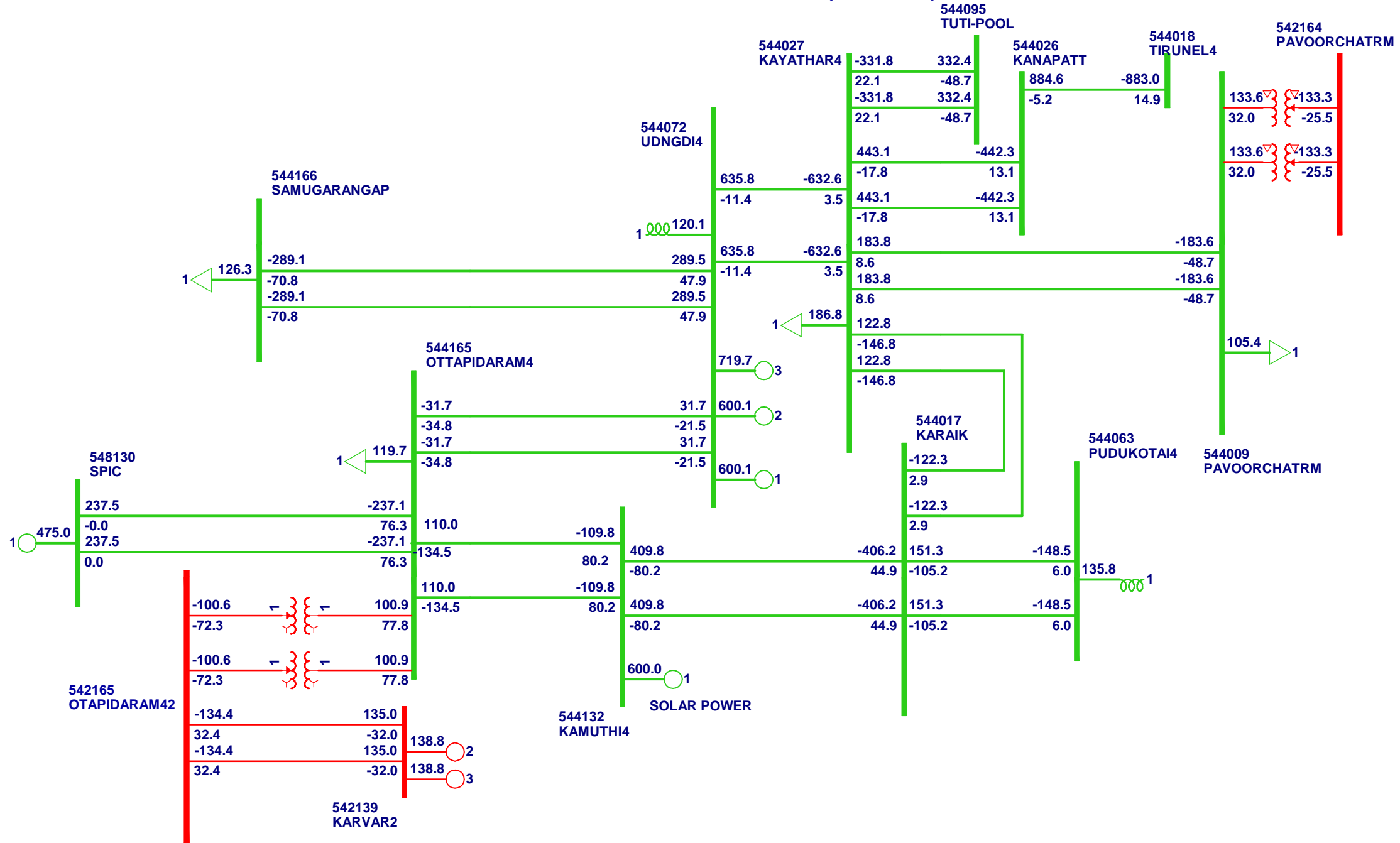
# CASE1FW : BASE CASE + WITH SPIC (1X525MW) GENERATION



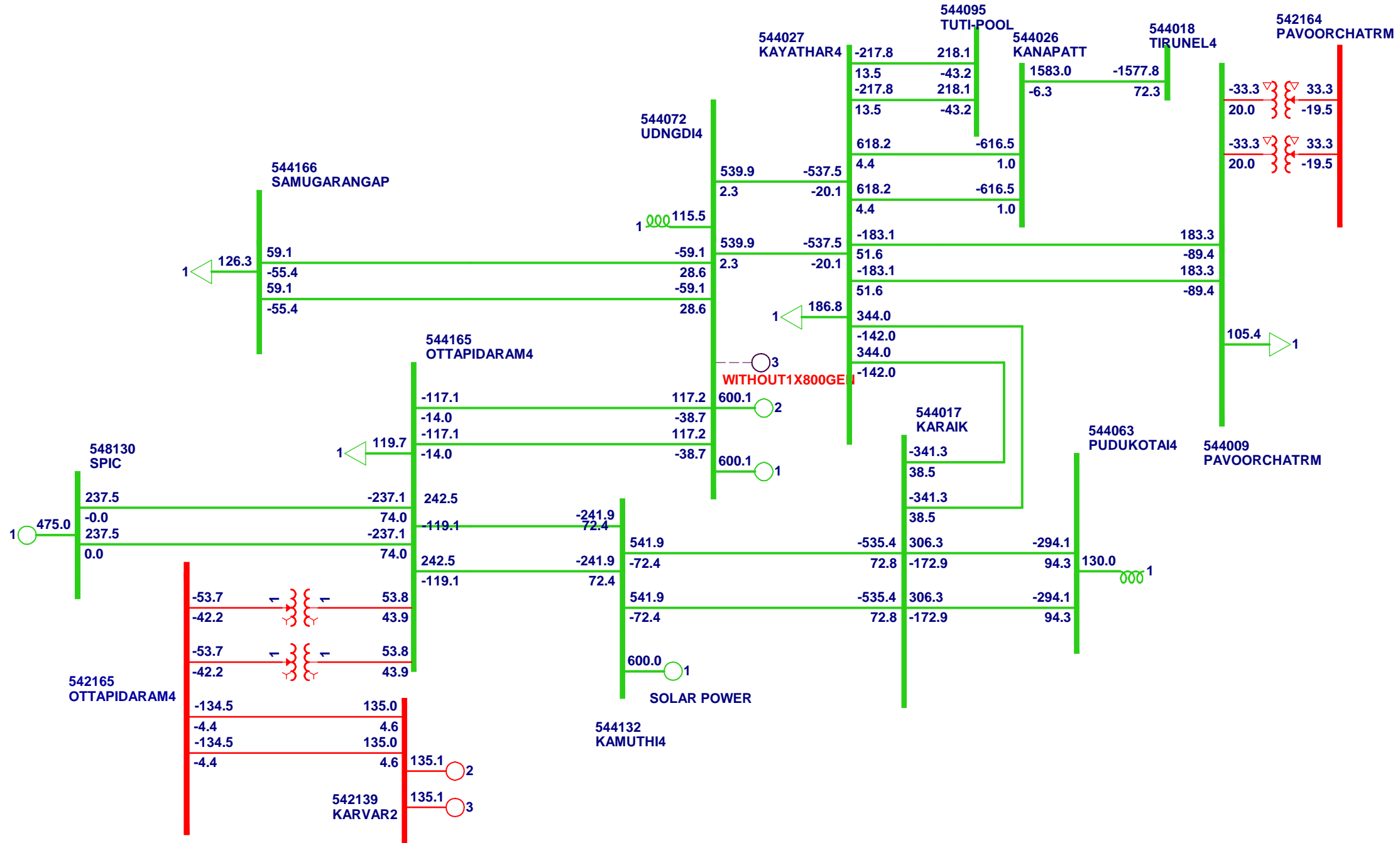
CASE1FW(N-1 CONDITION) : WITH UDANGUDI-KAYATHAR 400KV ONE CIRCUIT OPEN



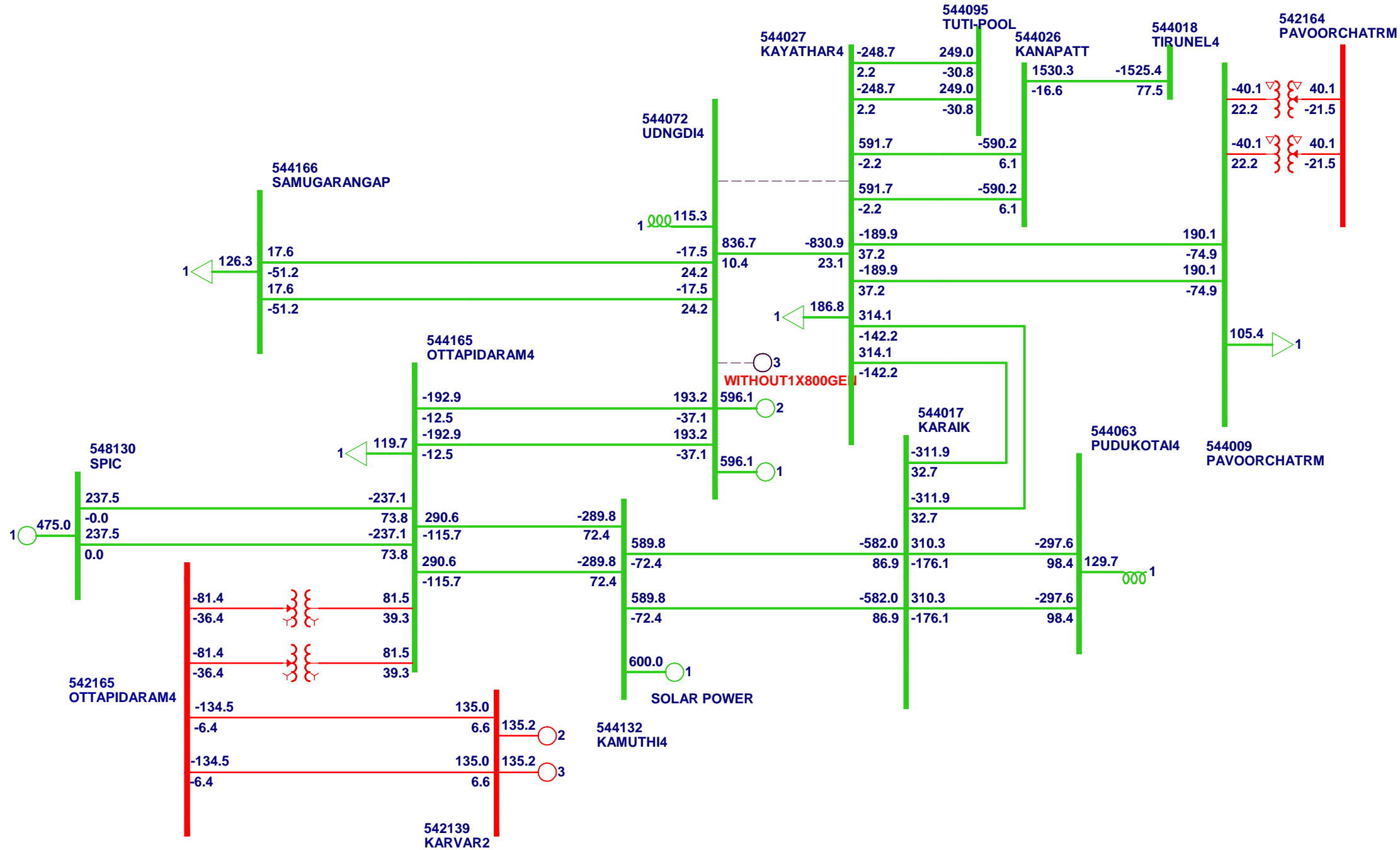
# CASE1NW : BASE CASE + WITH SPIC (1X525MW) GENERATION



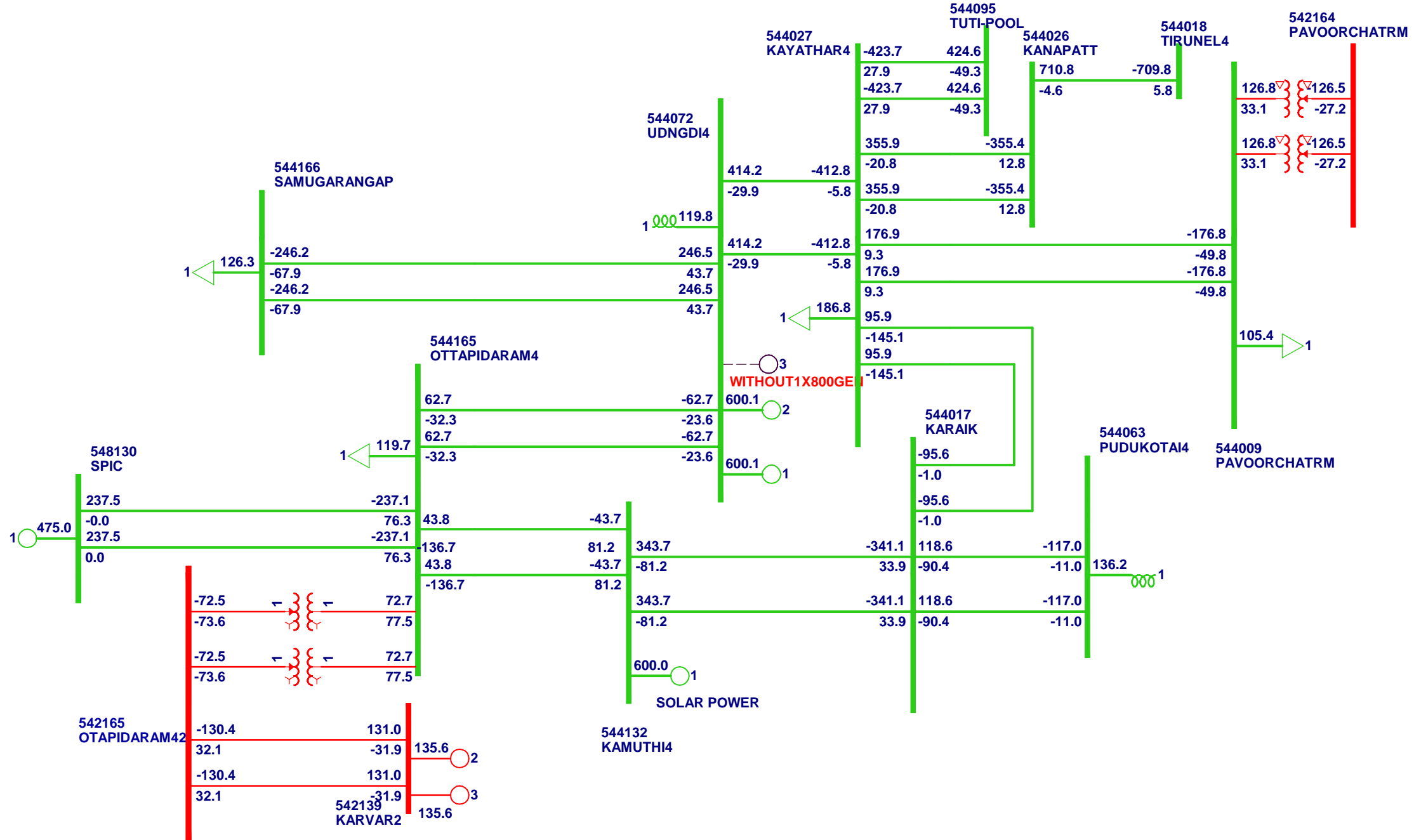
# CASE2FW: CASE 1+ WITH OUT UDANGUDI 1X800MW UNIT GENERATOR



# CASE2FW(N-I CONDITION): WITH UDANGUDI-KAYATHAR 400KV ONE CIRCUIT OPEN



# CASE2NW: CASE 1+ WITH OUT UDANGUDI 1X800MW UNIT GENERATOR





LILO of both lines (i.e., NLC TS2 – Alundur and NLC TS1 Exp – Alundur) will over load the existing 400 kV lines at Neyveli complex. Hence, it is suggested that LILO of only one circuit Neyveli – Trichy 400 kV D/C line as agreed earlier to provide start up power to the plant may be carried out. The evacuation system for the ILFS generation, Nagapattinum – Salem 765kV S/C line & Salem – Madhugiri 765kV S/c line may be speeded up to evacuate power from IL&FS.

### **3. TANGEDCO/TANTRANSCO proposals**

**3.1** Director (SP& PA) stated that joint studies were carried out at Gurgaon, with CEA and PGCIL on 05-03-2014 to 07-03-2014 and later on 11-06-2014 in Delhi, to finalize the Intra-State transmission system proposed by TANTRANSCO, for the evacuation of 4160MW (State sector – 3440MW + OPG Private power plant – 720MW) generation in Chennai Area and 2120 MW generation in Udangudi area.

**3.2** TANTRANSCO stated that based on the guidelines given by CEA, joint studies were carried out and following transmission system has been evolved to evacuate the power from above generation projects and transmitting to load centres in Tamil Nadu:

#### **I. ATS FOR ETPS EXPANSION – 1X660MW:**

- i) 400kV DC Quad connectivity from ETPS Expansion switchyard to the 765/400kV Pooling station at North Chennai. (Generation at 400kV level)
- ii) 1X125 MVAR,420kV Bus Reactor at generation switchyard.

#### **II. ATS FOR ENNORE SEZ (NCTPS Stage-IV) – 2X660MW:**

- i) 400kV DC Quad connectivity from Ennore SEZ switchyard to the 765/400kV Pooling station at North Chennai. (Generation at 400kV level)
- ii) 400kV DC Quad inter link between the ETPS Expansion and Ennore SEZ switchyard for reliability.
- iii) 2X125MVAR, 420kV Bus Reactors at generation switchyard.

#### **III. ATS FOR NCTPS Stage III – 1X800MW:**

- i) 765kV DC line from NCTPS Stage III switchyard to the North Chennai Pooling station. (Generation at 765kV level)
- ii) 1X240MVAR,765kV Bus Reactor at generation switchyard

**IV. ATS FOR ETPS Replacement – 1X660MW:**

- i) 765kV DC line from ETPS Replacement switchyard to North Chennai Pooling station. (Generation at 765kV level)
- ii) 765kV DC inter link to NCTPS Stage-III for reliability.
- iii) 1X240MVAR, 765kV Bus Reactor at generation switchyard.

**V. ATS for M/S.OPG Power generation Ltd.- 2X360MW : (By OPG)**

- i) 400kV DC line to the North Chennai Pooling station.
- ii) 2X80 MVAR ,420kV Bus Reactor at the generation switchyard.

**3.3 Common Transmission system for above generation projects in Chennai area:**

**I. Establishment of 765/400kV Pooling Station in North Chennai area:**

- i) 3X1500MVA, 765/400kV ICTs at North Chennai Pooling station.
- ii) 765kV DC connectivity from North Chennai 765kV pooling station to the proposed Ariyalur 765/400kV SS with 240 MVAR, 765kV switchable line reactors in each line at both ends. A second 765kV DC connectivity from North Chennai 765kV pooling station to the proposed Ariyalur 765/400kV SS may be reviewed at a later date depending upon commissioning of the projects.
- iii) 400kV DC line from North Chennai Pooling station to the proposed Pulianthope 400/230kV SS.
- iv) 500MVA, 400/400kV Phase Shifting transformer(PST) at the Pooling station to control the power flow on the Pooling station – Pulianthope 400KV DC line. PST to have the capability to control power flow in both the direction and provision to be made to bypass PST during maintenance if required.

**II. Establishment of 765/400kV Sub Station in Ariyalur (near Villupuram):**

- i) 2X1500MVA, 765/400kV ICTs with the following 765kV and 400kV connectivity.

- ii) 765kV DC connectivity from Ariyalur 765/400kV SS to the Thiruvallur PGCIL 765/400kV SS with 240 MVAR, 765kV switchable line reactors in each line at both ends.
- iii) LILO of both the circuits of Pugalur – Kalivantapattu 400kV DC Quad line at Ariyalur. (in lieu of the approved connectivity for the Singarapet 400/230kV SS which has been approved in the 28th Standing Committee meeting).
- iv) 2X240MVAR, 765kV Bus Reactor at 765kV bus of Ariyalur 765/400kV SS. Provision for 420kV bus reactor at 400kV bus for future requirement if needed depending on actual field condition.

### **III. Establishment of 765/400kV SS in Coimbatore Region**

- i) 2X1500MVA, 765/400kV ICTs with the following 765kV and 400kV connectivity.
- ii) 765kV DC connectivity to the proposed Ariyalur 765/400kV SS with 240 MVAR, 765kV switchable line reactors in each line at both ends.
- iii) 400kV DC connectivity to the sanctioned Edayarpalayam 400/230kV SS
- iv) 400kV DC connectivity to sanctioned Rasipalayam 400/230kV SS.
- v) 2X240 MVAR, 765kV bus Reactors at 765kV bus of Coimbatore 765/400kV SS. Provision for bus reactor at 400kV bus for future requirement if needed depending on the actual field condition.

### **3.4 ATS for proposed power plants at Udangudi (2x660 MW + 1x 800MW)**

- i) 400kV DC Quad line to the Kayathar 400kV SS.
- ii) 400kV DC line to the proposed Samugarengapuram 400/230-110 kV SS.
- iii) 400kV Quad DC line to the proposed Ottapidaram 400/230-110kV SS.
- iv) Ottapidaram 400/230-110 KV Substation with 2x 315MVA, 400/230kV ICTs and 2x200 MVA, 400/110kV ICTs with the following 400kV connectivity.
  - a. 400 KV D/C Quad line from Udangudi Switchyard.
  - b. 400 KV D/C Quad line to Kamuthi 400/230-110 KV Substation.
  - c. 230kV connectivity:
    - i. LILO of TSipcot – Kavanoor 230kV SC line

- ii. 230kV DC line from Indbharath generation switchyard of 2x150 MW.
- iii. LILO of TSipcot – Savasapuram 230kV SC feeder.
- v) Kamuthi 400/230-110 KV Substation for Solar Power injection (maximum 1000 MW) with 3x 315MVA 400/230kV ICTs and 2x200 MVA, 400/110kV ICTs with 400 KV DC Quad line from Kamuthi SS to the existing Karaikudi 400kV PGCIL Substation. This S/S would have following 230kV connectivity:
  - i. 230kV DC line to the proposed Muthuramalingapuram 230kV SS.
  - ii. 230kV DC line to the existing Kavanoor 230kV SS.

**3.5 TANTRANSCO has proposed to establish the following 400 KV Substations and transmission lines as System strengthening, throughout Tamil Nadu within the end of 13th plan**

- i) **Samugarengapuram 400/230-110 KV wind Substation** with 2x 315MVA, 400/230kV ICTs and 2x200 MVA, 400/110kV ICTs with 400 KV D/C line from Udangudi Switchyard. In Aralvaimozhi pass wind area of southern part of TN, the existing wind capacity is 1800MW and there is no 400kV substation available. To avoid the existing congestion and to accommodate the future wind addition (maximum 300 MW) and for load drawal during non wind season Samugarengapuram 400/230-110kV SS is proposed. The following 230kV connectivity is proposed:
  - i. LILO of Kudankulam – SRPudur 230kV SC line
  - ii. LILO of Udayathur – Sankaneri 230kV SC line
  - iii. 230kV DC line to proposed Muppandal 230kV SS.
- ii) **Pudukottai 400/230-110 KV Substation** for load drawal with 2x 315MVA, 400/230kV ICTs and 2x200 MVA, 400/110kV ICTs with LILO of both 400 KV Karaikudi – Pugalur TANTRANSCO DC Quad line. The following 230kV connectivity is proposed:
  - i. 230kV SC line to Karambium 230kV SS.
  - ii. 230kV SC line to Pudukottai 230kV SS.
  - iii. 230kV SC line to proposed Tuvakudi (BHEL) 230kV SS.

- iii) **Turaiyur 400/230 KV Substation** for load drawal with 2x 315MVA, 400/230kV ICTs with LILO of one of the NLC – Pugalur 400 KV PGCIL line, and 400 KV D/C line to the proposed Mangalapuram 400 KV Substation. The following 230kV connectivity is proposed:
- i. 230kV SC line to Perambalur 230kV SS.
  - ii. 230kV SC line to Samayapuram 230kV SS.
  - iii. 230kV SC line to sanctioned Jambunathapuram 230kV SS
  - iv. 230kV SC line to the sanctioned Poyyur 230kV SS
- iv) **Kolapalur 400/230-110 KV Substation** with 2x 315MVA 400/230kV ICTs and 2x200 MVA, 400/110kV ICTs with LILO of one of the 400 KV MTPS Stage III – Karamadai TANTRANSCO line, and 400 KV D/C line from Rasipalayam 400 KV Substation. The following 230kV connectivity is proposed:
- i. 230kV SC line to Thingalur 230kV SS
  - ii. 230kV SC line to Anthiyur 230kV SS
  - iii. 230kV SC line to Shenbagapudur 230kV SS
  - iv. LILO of Gobi – Pallakapalayam 230kV feeder
  - v. LILO of Karamadai – Ingur 230kV line
- v) **Mangalapuram 400/230 KV Substation** with 2x 315MVA, 400/230kV ICTs with LILO of both the Ariyalur – Pugalur 400 KV D/C Quad line. The following 230kV connectivity is proposed:
- i. LILO of Salem – Singapuram
  - ii. LILO of Deviakurichi – Valayapatty 230kV feeder.
  - iii. 230kV SC line to the proposed Thammampatty 230kV SS
  - iv. 230kV SC line to the proposed Udayapatty 230kV SS.
- vi) **Sholingur 400/230-110 KV Substation** with 2x 315MVA, 400/230kV ICTs and 2x200 MVA, 400/110kV ICTs with LILO of Sriperumbudur- Tiruvalam - Kolar 400 KV S/C PGCIL line. (In between Sriperumbudur and Tiruvalam 400 KV Substation). The following 230kV connectivity is proposed:
- i. LILO of Thiruvalam – Mosur 230kV feeder

- ii. LILO of SVChatram – Arni 230kV feeder
  - iii. 230kV DC line to the proposed Pattaraiperumbudur 230kV SS.
- vii) **Pulianthope 400/230 KV Substation** with 3x 315MVA, 400/230kV ICTs with 400kV DC Quad line from the proposed North Chennai Pooling Station and 400 kV DC line from Manali 400/230-110 KV Substation. The following 230kV connectivity is proposed:
- i. 230kv SC cable link to Tondiarpet, Basinbridge and sanctioned Vysarpadi & CMRL Central 230kV substations which are under execution.
- viii) **Mylapore 400/230 KV Substation** with 2x 315MVA, 400/230kV ICTs with 400 KV SC cable from proposed Pulianthope 400/230 KV Substation and 400 KV SC cable to Guindy 400 KV Substation. (Upgradation of existing Mylapore 230/110kV SS).
- ix) **Palavadi 400/230-110KV Substation:** For the already sanctioned Singarapet 400KV Substation, the land has now been identified at Palavadi near Salem 765/400 KV PGCIL Substation with 400 KV DC quad line from MTPS Stage III and 400KV DC quad line from Tiruvalam 400 KV Substation and 400 quad 2XDC line from Rasipalayam 400 KV Substation (One DC line via Salem 765/400 KV Substation). The following 230kV connectivity is proposed:
- i. LILO of Karimangalam - MALCO 230kV SC line
  - ii. 230kV link line to the sanctioned Gurubarahally 230kV SS.
  - iii. 230kV DC link line to the sanctioned Udanapally 230kV substation.
- x) **Kayathar – Koilpatty (Tuticorin Pooling point) 400kV DC Quad line:**
- i. Kayathar – Koilpatty (Tuticorin Pooling point) 400kV DC Quad line for additional connectivity with ISTS and increased reliability purpose
- xi) **Pavoorchatram 400kV SS (Tennampatty 400kV SS):**
- For the Thenampatty 400/230-110kV SS which has been approved in the 34th Standing committee meeting, now the land has been identified near Pavoorchatram. The 400kV connectivity is as decided in the 34th Standing committee meeting i.e. 400kV DC line to Kayathar 400kV SS. The following 230kV connectivity is proposed:

- i. LILO of Kodikurichi – Veeranam 230kV line in addition to the connectivity to new wind substations.

- 3.6 SRLDC stated that there is need to clarify that system strengthening required for evacuation of power from generating stations is necessarily a part of ATS(Associated Transmission System) and should be in place before the commissioning of generation units. In the absence of commissioning of entire transmission system required for evacuation of power from generating station and feeding into load centres, the generation leans on ISTS and leads to congestion in the network. **He also emphasized the need of commissioning of associated 220kV lines in the time frame of 400kV network as the mismatch in commissioning of these elements would lead to congestion and TNEB would need to back down their generation to contain loading. These provisions were agreed by TNEB.**
- 3.7 DGM(CTU) agreed with SRLDC view and stated that in the absence of commissioning of the proposed transmission system, generators for which transmission system has not commissioned should be backed down first and the access of other generators including ISGS generators should not be affected. **These provisions were also agreed by TNEB.**
- 3.8 TNEB stated that for the Udangudi projects, they are proposing to build an **Udangudi Pooling Station** where both the Stage-I and Stage-II would be pooled with following connectivity lines:

**Connectivity for Udangudi Power Project Stage-I (2x660MW):**

- i) 400kV DC Quad line to the Udangudi Pooling station.

**Connectivity for Udangudi Power Project Stage-II (1x800MW):**

- i) 400kV DC Quad line to the Udangudi Pooling station.
- ii) 400kV DC Quad line to the Udangudi Power Project Stage -1 -2x660MW

These lines and the Udangudi Pooling Station would be in addition to the earlier planned system. **This system for Udangudi projects was agreed provided the Udangudi Pooling Station is commissioned along with the generation project commissioned first.**

- 3.9 **Members agreed to the proposal of TANGEDCO with the above modifications and the provisions as mentioned earlier.**
4. **Constraints in 400kV bays extensions at 400kV Vemagiri S/S.**

**Annex – 13.0**

**Agenda Item # 13.0**

**“Edayarpalayam 400/230-110kV S/s under the scope of TANTRANSCO:”**

<b>1</b>	TANTRANSCO letter dated 13.1.2015	2 Pages
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**TAMILNADU TRANSMISSION CORPORATION LTD.**

(Subsidiary of TNEB Ltd.)

From

K.Rangaraj, B.E.,M.C.A.,F.I.E.,  
Managing Director/TRANSCO(i/c),  
TANTRANSCO,  
144, Anna Salai,  
Chennai -2.

To

The Member (Power System),  
Central Electricity Authority,  
Sewa Bhavan, R.K.Puram,  
New Delhi 110 066.

Lr.No. CE/Plg.&R.C/SE/SS/EE1/AEE1/F.37<sup>th</sup> SCM/D.10 /15 Dated. 13.01.15

Sir,

Sub: Edayarpalayam 400/230-110kV substation approved under HVDC system – under the scope of Tantransco - reg.

Ref: 1. 37<sup>th</sup> Standing Committee on Power System Planning of Southern Region – Minutes of the Meeting dated 22.09.2014.  
2. Lr.No.CE/Plg.&R.C/SE/SS/EE1/AEE1/F.37<sup>th</sup> SCM/D.351/14 dt.24.10.14

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1.0 In the 37<sup>th</sup> Standing Committee meeting, the following scheme has been agreed under scheme – II i.e., HVDC Bipole link between Western Region and Southern Region.

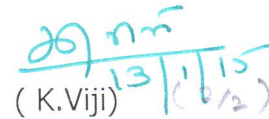
- (i) Raigarh(HVDC Stn) – Pugalur (HVDC Stn) 6000 MW HVDC bipole
- ii) Establishment of Raigarh HVDC Stn with 6000 MW HVDC terminals
- (iii) Establishment of Pugalur HVDC Stn with 6000 MW HVDC terminals  
**(or Alternatively:** (i) with Pugalur HVDC Stn with 4000 MW terminal, and (ii) Madakkathara, in Kerala HVDC Stn with 2000 MW terminal and inter-connection with existing 400kV AC S/S at Madakkathara)
- (iv) Raigarh HVDC Station – Raigarh(Existing) 400kV (quad) 2xD/c lines (or with bay extension)
- (v) Pugalur HVDC Station – Pugalur (Existing) 400kV (quad) D/c line.
- (vi) Pugalur HVDC Station – Arasur 400kV (quad) D/c line with 80 MVAR switchable line reactor at Arasur end.
- (vii) Pugalur HVDC Station – Thiruvalem 400kV (quad) D/c line with 80 MVAR switchable line reactor at both ends.
- (viii) Pugalur HVDC Station – Edayarpalayam 400 kV (quad) D/c line with 63MVAR switchable line reactor at Edayarpalayam end.

- (ix) Edayarpalayam – Udumalpet 400 kV (quad) D/c line.
- (x) Establishment of 400/220kV substation with 2x500 MVA transformers at Edayarpalayam and 2x125 MVAR bus reactors.

2.0. In this connection, TANTRANSCO has stated vide letter under ref (2) cited above that for the establishment of Edayarpalayam 400/230kV substation land has been purchased and the tendering work is under process. It is once again reiterated that establishment of Edayarpalayam 400/230-110kV SS will be under the scope of TANTRANSCO. In the Udumalpet 400kV substation, there is no space for 400kV bay extension. Hence, it is suggested that the Udumalpet – Anaikadavu 400kV SC line may be LILOed at Edayarpalayam 400kV SS and the following works will be under the scope of TANTRANSCO.

- o LILO of Udumalpet – Anaikadavu 400kV TANTRANSCO SC line may be LILOed at Edayarpalayam 400kV SS
- o Establishment of 400/230-110kV substation with 2x500 MVA transformers at Edayarpalayam and 2x125 MVAR bus reactors.

3.0 Hence, it is requested that the above modification may be put up in the next Standing Committee meeting for approval and clearance.

  
( K.Viji) 13/1/15  
(0/2)

Chief Engineer/Planning & R.C  
For Director/Transmission Projects

**Annex – 14.0**

**Agenda Item # 14.0**

**“Construction of 400kV Quad D/C line from UPCIL (Karnataka) to Kasargod( Kerala).:”**

<b>1</b>	KPTCL letter dated 06.11.2014	2 Pages
<b>2</b>	HVDC without Kasargode	1 Page
<b>3</b>	HVDC with Kasargode	1 Page
<b>4</b>	Kerala letter dated 22.06.2013	1 Page
<b>5</b>	PGCIL letter dated 05.08.2013	1 Page
<b>6</b>	LANCO letter dated 26.07.2013	1 Page

197568

**KARNATAKA POWER TRANSMISSION CORPORATION LIMITED**

Telephone: 080-22210416  
Fax : 080-22292204



Office of the  
Chief Engineer Electy.,  
Planning & Co-ordination,  
Kaveri Bhavan, Bangalore-9

No. CEE (P&amp;C)/SEE(Plg)/KCO-97/55319/2013-14

Date: 6<sup>th</sup> Nov '2014

8985-8990

17 NOV 2014

The Member (Power Systems),  
Central Electricity Authority,  
Sewa Bhavan, RK Puram,  
New Delhi-110066.

**Sub:-** Construction of 400 kV DC line with Quad from UPCL (Karnataka) to Kasargod (Kerala) - Reg.

**Ref:-** Proceedings of 35<sup>th</sup> Standing Committee Meeting for Power System Planning for Southern Region held at Gurgaon, New Delhi on 4<sup>th</sup> January, 2014.

The subject regarding UPCL – Kasargod – Kozikode link was discussed in the 35<sup>th</sup> Meeting of Standing Committee on Power System Planning held at Gurgaon on 4<sup>th</sup> January, 2014. Kerala had expressed their concern on transmission congestion in Northern part of their state, as the planned lines were getting delayed due to RoW problem.

After deliberations the following scheme was agreed.

1. Mangalore (Udupi PCL) – Kasargod, 400 kV DC Quad line
2. Kasargod – Kozhikode (Areacode), 400 kV DC Quad line
3. Establishment of 2X500 MVA, 400/220 kV GIS sub-station at Kasargod

The load flow studies are exhibited at annexure-III of the minutes of the meeting.

As seen from the power flow plots at annexure KK(1) , without UPCL-Kasargod link, the power flows on 400 kV kV DC Quad line between UPCL and Hassan (Shantigrama) is 572 MW. The flows on Mysore (Karnataka) to Kozikode(Kerala) is 481 MW.

After establishing UPCL-Kasargod-Kozikod link, as shown in annexure KK(3), it is observed that there is power flow from UPCL towards Kasargod (Kerala) to an extent of 439 MW . It may also be seen from the plot at annexure KK(3) that the power flows on Mysore-Kozikode line is reduced to an extent of 254 MW.

In this scenario the power flow from UPCL to Hassan (Shantigrama) is reduced to an extent of 226 MW and step down of power from 400 kV to 220 kV at UPCL is to an extent of 431 MW. Since UPCL is an ISGS with 90% share to Karnataka, with the construction of 400 kV DC line between UPCL and Kasargod, the 400 kV DC line from UPCL to Hassan will be

CE (P&C)  
MSL 21/11

Shri PJ  
Director  
21/11

1460SP & PA  
20.11.14

A211M/PS1114  
21/11/2014

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under-utilized. The proposed 400 kV link between UPCL and Kasargod will not strengthen S1 and S2 corridor since the upstream 400 kV lines beyond Hassan are not having capacity.

Further 400 kV DC line between 765/400 kV Madhugiri New and 400/220 kV Bastipura (Mysore) is approved in the evacuation scheme of Yermarus and Edlapur TPS and this line will strengthen S1 and S2 corridor.

Hence, the proposed 400 kV DC line to link UPCL and Kasargod may not serve the purpose. The investment will not justify benefits derived for other constituents to share the cost. It is strongly requested that this aspect may be revisited.

Yours faithfully

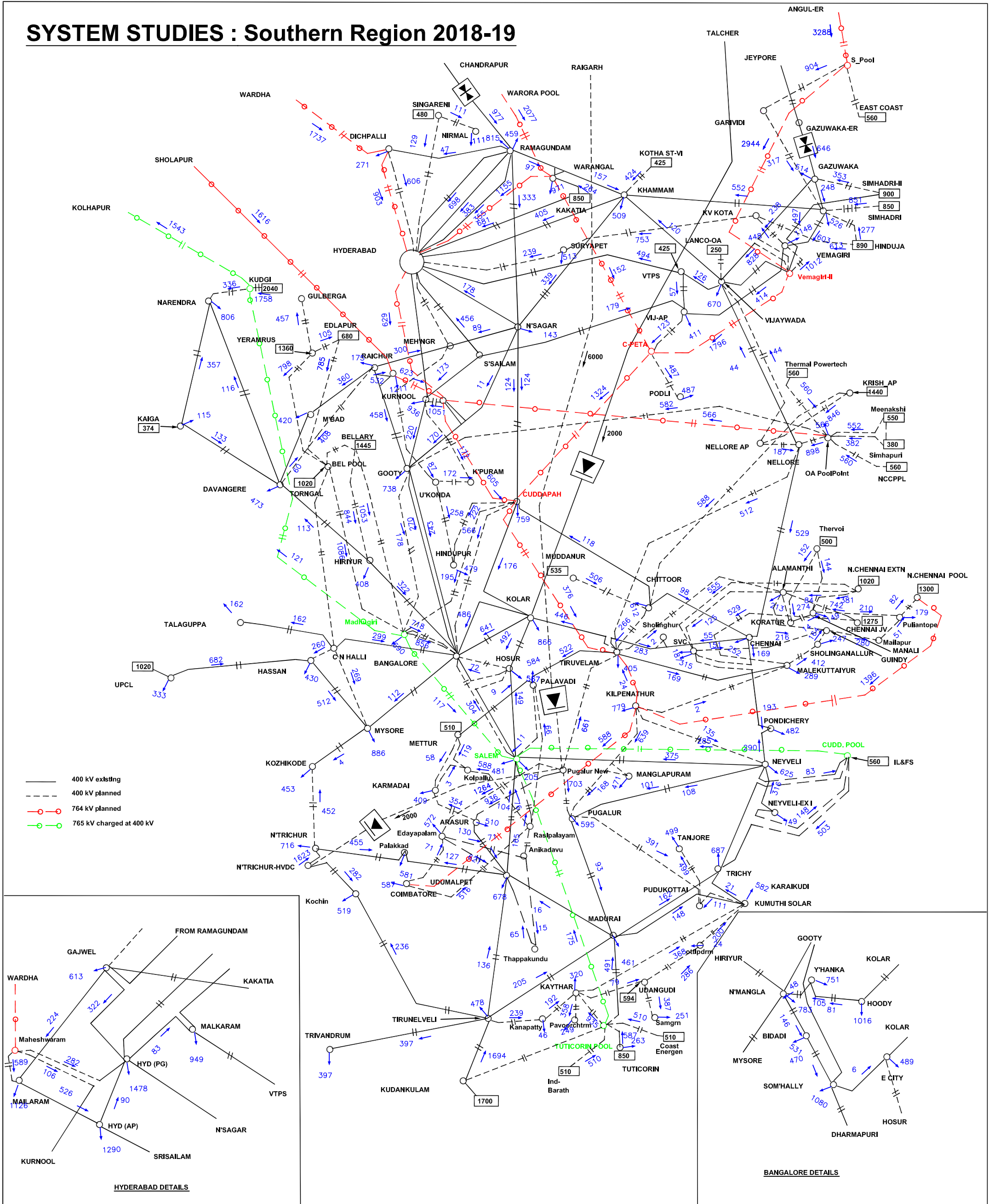
  
Chief Engineer Electy.,

(Planning & Co-ordination)

Copy to:

1. The Director (SP&PA), Central Electricity Authority, Sewa Bhavan, RK Puram, New Delhi-110066.
2. The Cheief Engineer Electy. (SP&PA), Central Electricity Authority, Sewa Bhavan, RK Puram, New Delhi-110066.
3. E.A to Director (Transmission), K.P.T.C.L., Kaveri Bhavan, Bangalore to place it before The Director (Transmission).
4. P.S to Managing Director, KPTCL. Kaveri Bhavan, Bangalore to place it before The Managing Director.
5. P.S to Additional Chief Secretary to Government, Energy Department, GoK , Vikas Soudha, Bangalore to place it before The Additional Chief Secretary to Government.

# SYSTEM STUDIES : Southern Region 2018-19





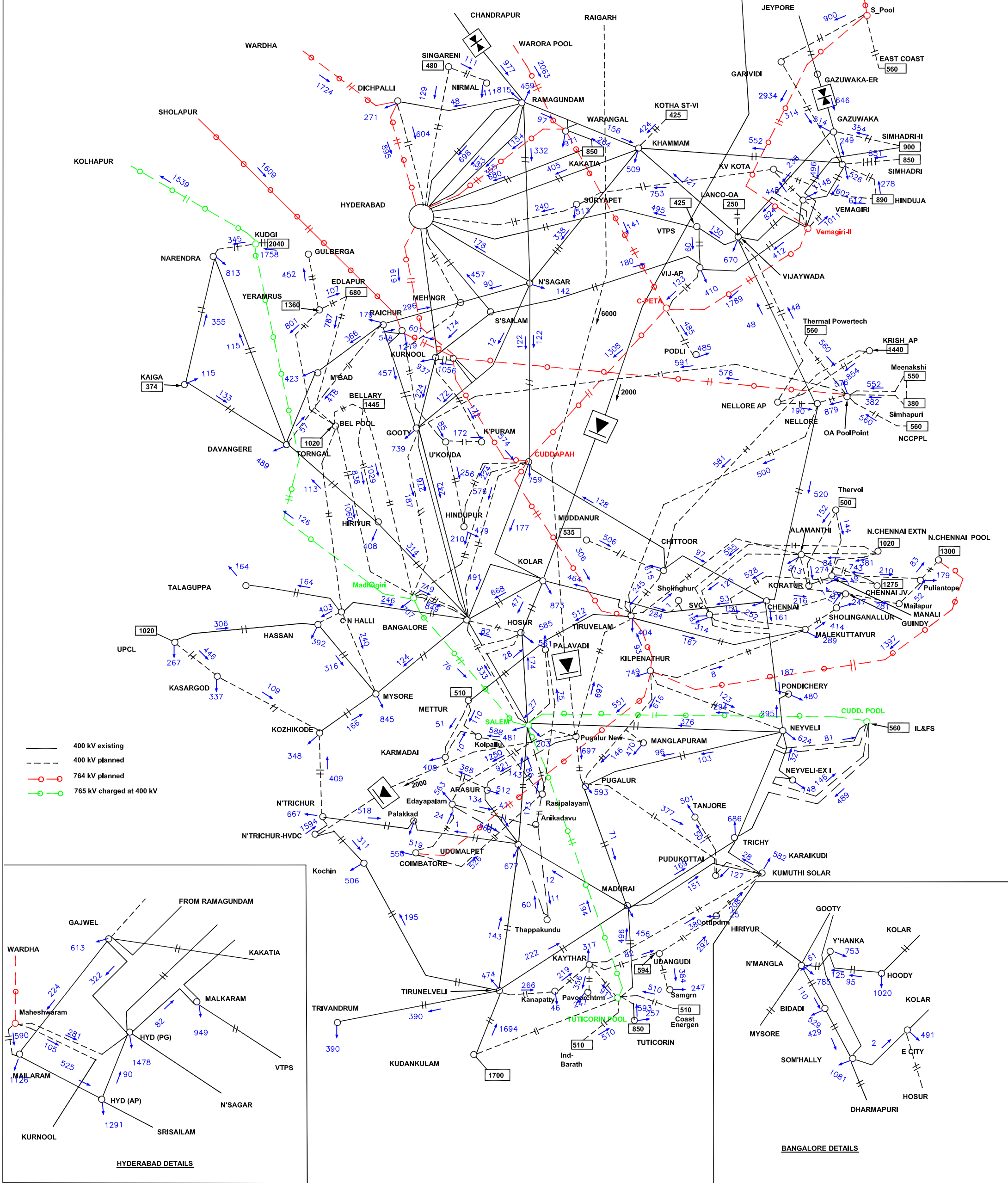






# Exhibit -

## SYSTEM STUDIES : Southern Region 2018-19



- 400 kV existing
- - - 400 kV planned
- 764 kV planned
- 765 kV charged at 400 kV

HYDERABAD DETAILS

BANGALORE DETAILS