

**Thiagarajan V {वी. त्यागराजन}**

**From:** Thiagarajan V {वी. त्यागराजन}  
**Sent:** 15-Nov-2015 18:19  
**To:** jindal\_pardeep@yahoo.co.in; jindal\_plan@hotmail.com  
**Cc:** Mukesh Khanna {मुकेश खन्ना}; Seema Gupta {सीमा गुप्ता}  
**Subject:** Grant of LTA to Telangana State Southern power Distribution Company Ltd. (TSSPDCL) for 2000 MW from Chhattisgarh to Telangana State DISCOMs

Sir,

Telangana State Southern power Distribution Company Ltd. (TSSPDCL) has applied for LTA of 2000 MW in the month of February, 2015 for evacuation of 1000 MW power from Marwa Thermal power Station (Marwa TPS) and another 1000 MW power from other generating stations in Chhattisgarh i.e. total 2000 MW to the DISCOMs of Telangana namely Southern Power Distribution Company of Telangana Ltd. (TSSPDCL) & Northern Power Distribution Company of Telangana Limited (TSNPDCCL). Details of application is as below.

Sl. No	Applicant	Location	Date of Application	Start Date of LTA	LTA Sought (MW)
1.	Telangana State Southern Power Distribution Company Ltd. (TSSPDCL)	1000 MW at Marwa STPP connected to STU & 1000 MW CSDCL, Chattisgarh	Feb, 2015	01.03.2015	2000

For grant of this LTA no additional transmission system is envisaged. The same may be granted on the existing/under construction and already planned transmission system. The detailed discussion on the subject matter will be taken up during LTA meeting. It is requested to take up the same in the next SCM

Regards,  
V. Thiagarajan

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

From:  
Chief Engineer/IPC & Power Systems  
APTRANSCO,  
Vidyut Soudha,  
Hyderabad – 500 082

To  
The Chief Engineer (SP & PA),  
Central Electricity Authority,  
Seva Bhavan, R.K.Puram,  
NEW DELHI – 110 066

Lr. No. CE(PS) / SE(SP)/DE(SS)/ADE-2/F. VTS-V & Inavolu/D. No.79 /2015, Dt. 08.05.2015.

Sir,

Sub: Transmission system for power evacuation from proposed 1 x 800 MW power plant of APGENCO at Dr. NTTPS, Vijayawada, 400kV ring around capital city and proposed 400 kV SS at Thullur/Inavolu along with associated 220kV & 132 kV Lines and substations – Request to include as agenda item for discussion in the forthcoming Standing Committee meeting - Reg.

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It is to submit that APGENCO has proposed 1 x 800 MW power plant at Dr. NTTPS, Vijayawada. It is also submit that GoAP has announced a new Capital City is coming in and around Thullur area.

In this regard APTRANSCO has proposed the scheme for power evacuation from proposed 1 x 800 MW power plant of APGENCO at Dr. NTTPS, Vijayawada and also to meet the up-coming loads, a 400kV ring around capital city and proposed 400 kV SS at Thullur/Inavolu, 400 kV Gudiwada and 400 kV Chilakaluripet along with associated 220kV & 132 kV Lines and substations in a phased manner.

Accordingly System Studies were carried out by considering the field feasibility and Transmission requirement works for the year 2018-19, Hinduja evacuation scheme, Krishnapatnam evacuation scheme and wind & solar to be come up in the Ananthapur and Kurnool districts. The total generation is considered as 21917 MW and load is 11837 MW. The following dedicated Transmission scheme approved by APTRANSCO for power evacuation from proposed 1 x 800 MW power plant of APGENCO at Dr. NTTPS, Vijayawada, 400kV ring around capital city and proposed 400 kV SS at Thullur/Inavolu along with associated 220kV & 132 kV Lines and substations is as follows:

- I. Scheme for evacuation of 1 x 800 MW power plant of APGENCO at Dr. NTTPS, Vijayawada.
  - i. Proposed 400 kV VTS – Sattenapalli Quad Moose DC line (60 KM approx.).

- II. Scheme for 400kV ring around capital city and proposed 400 kV SS at Thullur/Inavolu, 400 kV Gudiwada and 400 kV Chilakaluripet along with associated 220kV & 132 kV Lines and substations in a phased manner**
- ii. Erection of 400/220/132 kV Gudiwada SS with 2 x 315 MVA PTRs.
  - iii. 400 kV LILO (10.5 KM approx.) of existing 400 kV Vemagiri – Sattenapalli DC line at proposed 400/220 kV Gudiwada SS.
  - iv. 400 kV Bus extension at proposed 765/400 kV Chilakaluripet (PGCIL) SS for erection of 400/220 kV Chilakaluripet SS with 2 x 315 MVA PTRs after the construction of proposed 765/400 kV Chilakaluripet (PGCIL) SS.
  - v. Erection of 400/220 kV Inavolu/Thullur SS with 2 x 315 MVA PTRs.
  - vi. 400 kV LILO (1.5 KM approx.) of existing 400 kV VTS – Sattenapalli DC line at proposed 400/220 kV Inavolu/Thullur SS.
  - vii. 400 kV QM DC line (90 KM) from proposed 400kV Chilakaluripet SS to 400kV Podili SS after the construction of proposed 765/400 kV Chilakaluripet (PGCIL) SS.
  - viii. 400 kV QM DC line (103 KM) from proposed 400kV Chilakaluripet SS to 400kV Gudiwada SS.
  - ix. Erection of 220/132 kV Chilakaluripet SS with 2 x 100 MVA PTRs.
  - x. 220 kV DC line (20 KM approx.) from proposed 220/132 kV Chilakaluripet SS to 400/220 kV Chilakaluripet SS.
  - xi. Up-gradation of existing 132/33 kV Tadepalli SS to 220/132/33 kV Tadepalli SS with 2 x 100 MVA PTRs.
  - xii. 220 kV DC line (11 KM approx.) from proposed 220/132 kV Tadepalli SS to 400/220 kV Inavolu/Thullur SS.
  - xiii. 220 kV DC LILO (3 KM approx.) of existing 220 kV Nunna – Gudivada DC line at proposed 400/220/132 kV Gudivada SS.
  - xiv. 132 kV LILO (4 KM approx.) of existing 132 kV Kanumolu-Pamarru at proposed 400/220/132 kV Gudivada SS.
  - xv. 132 kV LILO (10.5 KM approx.) of existing 132 kV Chilakaluripeta – Nallapadu at proposed 220/132 kV Chilakaluripet SS
  - xvi. 132 kV LILO (10.5 KM approx.) of existing 132 kV Chilakaluripeta – Marripalem at proposed 220/132 kV Chilakaluripet SS.

The Load flow results in the Normal conditions as well as Contingency conditions are herewith enclosed. The same is sent through e-mail also.

It is requested to include the above proposal as an agenda item for discussion in the forthcoming 39<sup>th</sup> Standing Committee meeting.

Yours faithfully,

Encl: - As above

*Sanjay*  
8/5/15  
Chief Engineer (IPC & Power Systems)

4/7

Copy to:

✓ Sri Pardeep Jindal  
Director (SP&PA)  
Central Electricity Authority,  
Seva Bhavan R.K.Puram,  
NEW DELHI - 110066

Sri Dilip Rozekar, DGM(SEF)  
PGCIL,  
'Saudamini' Plot NO.2 Sector-29,  
GURGAON - 122001, Haryana.

LINE FLOWS WITH EVACUATION OF VTS-V STAGE 1 X 800 MW, PROPOSED 400/220 KV INAVOLU/THULLUR SS, CAPITAL CITY RING ALONG WITH ASSOCIATED 220 KV & 132 KV LINES AND SUBSTATIONS									
SL. No.	Description	with wind, solar & with Capital City Ring	Without wind & with Capital City Ring & No Gen at SLB	Without wind & with Capital City Ring outage of VTS-STNPL	Without wind & with Capital City Ring outage of 1 ckt of VTS-STNPL & VTS-Inavolu	Without wind & with Capital City Ring & outage of 400 kV CH. Peta	Without wind & with Capital City Ring & No Gen at VTS-V Stage (800MW)	Without wind & with Capital City Ring outage of Vemagiri-Gidiwada	Without wind & with Capital City Ring outage of VTS-STNPL & VTS-MLK
		MW	MW	MW	MW	MW	MW	MW	MW
1	400 kV VTS-IV - Sattenapally	2 x 250.0	2 x 269.9	324.3	395.2	2 x 181.5	2 x 139.3	2 x 269.4	362.3
2	400 kV VTS-IV - Nunna	2 x -46.6	2 x -76.1	2 x -15.2	2 x 15	2 x 33.0	2 x -192.9	2 x -77.7	2 x 35.4
3	400 kV VTS-IV - Malkaram	2 x 225.1	2 x 221.9	2 x 231.00	2 x 236.6	2 x 256.1	2 x 185	2 x 223.7	270.1
4	ICT loadings at 400/220 kV Sattenapalli	3 x 133.1	3 x 127.5	3 x 130.9	3 x 128.9	3 x 159.8	3 x 125	3 x 132.5	3 x 133.4
6	400 kV Sattenapalli - Podili	2 x 123.3	2 x 98.5	2 x 117.7	2 x 112.5	2 x 199	2 x 90.9	2 x 125.2	2 x 124
7	400 kV Sattenapalli - 765/400 kV Chilakaluripet	2 x 225.1	2 x 154.2	2 x 214.5	2 x 204.8	-	2 x 142.7	2 x 244.5	2 x 227.6
8	400 kV Sattenapalli - Srisailam	2 x 58.4	2 x 223.3	2 x 53.1	2 x 48.2	2 x 112.4	2 x 28.5	2 x 54.3	2 x 66.8
9	ICT loadings at 400/220 kV K V Kota	2 x 137.1	2 x 137.1	2 x 137.2	2 x 137.4	2 x 137.3	2 x 137.7	2 x 142.1	2 x 136.8
10	400 kV KV Kota - Hinduja	2 x -222.8	2 x -225.2	2 x -223.2	2 x -223.5	2 x -219.1	2 x -223.2	2 x -222.0	2 x -224.2
11	400 kV KV Kota - Suryapet	2 x 299.2	2 x 298.9	2 x 298.9	2 x 298.7	2 x 331.4	2 x 281.2	2 x 314.9	2 x 310.1
12	400 kV KV Kota - Vemagiri	2 x -213.4	2 x -210.7	2 x -213.00	2 x -212.6	2 x -249.6	2 x -195.6	2 x -235.0	2 x -222.7
13	ICT loadings at 400/220 kV Vemagiri	2 x 120.8	2 x 119.6	2 x 120.7	2 x 120.7	2 x 127.7	2 x 117.6	2 x 128.2	2 x 122.1
14	400kV Vemagiri - Vizag	2 x -216.8	2 x -221.3	2 x -217.5	2 x -218.2	2 x -197.4	2 x -224.3	2 x -207.3	2 x -215.3
15	400kV Vemagiri - Simhadri -I	2 x -177.9	2 x -181.4	2 x -178.4	2 x -178.9	2 x -162.6	2 x -183.7	2 x -170.3	2 x -176.8
16	400kV Vemagiri - Konaseema	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4
17	400kV Vemagiri - Gouatami	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4
18	400kV Vemagiri - Nunna	2 x 262.4	2 x 266.6	2 x 252.4	2 x 242.8	2 x 276.5	2 x 293.5	2 x 299.0	2 x 241.1
19	400kV Vemagiri - GVK -II	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4
20	400kV Vemagiri - GMR	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8
21	ICT loadings at 400/220 kV Podili	3 x 126.9	3 x 126.1	3 x 126.1	3 x 125.3	3 x 129.4	3 x 126.4	3 x 125.2	3 x 127.4
22	400 kV Podili - 765/400 kV Chilakaluripet	2 x -25.8	2 x -37.4	2 x -24.9	2 x -23.9	-	2 x -34.5	2 x -15.9	2 x -25.2
23	ICT loadings at proposed 400/220 kV Inavolu/Thullur	2 x 41.2	2 x 40	2 x 41.00	2 x 39.7	2 x 48.7	2 x 38.5	2 x 41.1	2 x 42.1
24	400kV Inavolu/Thullur - Sattenapalli	2 x 137.4	2 x 151.4	2 x 188	2 x 118	2 x 88	2 x 63.9	2 x 150.6	2 x 213.1
25	400kV Inavolu/Thullur - VTS-IV	2 x -178.7	2 x -191.4	2 x -229	-315.4	2 x -136.8	2 x -102.4	2 x -191.8	2 x -255.2
26	ICT loadings at proposed 400/220 kV Gudiwada	2 x 60.7	2 x 61.2	2 x 57.6	2 x 54.7	2 x 105.4	2 x 62.4	2 x 42.4	2 x 58.7
27	400kV Gudiwada - 765/400kV CH.Pet	2 x 197.9	2 x 178	2 x 200.1	2 x 202.2	-	2 x 172.4	2 x 149.8	2 x 202.3
28	400kV Gudiwada - Sattenapalli	2 x 30.2	2 x 49	2 x 36.5	2 x 42.4	2 x 104.8	2 x 50.4	2 x -11.2	2 x 32.1
29	400kV Gudiwada - Vemagiri	2 x -288.9	2 x -288.2	2 x -294.2	2 x -299.3	2 x -210.3	2 x -285.2	-362	2 x -293.1
30	ICT loadings at 400/220 kV Kurnool	3 x 137.6	3 x 134.6	3 x 137.4	3 x 137.3	3 x 135.5	3 x 139.1	3 x 137.3	3 x 137.3

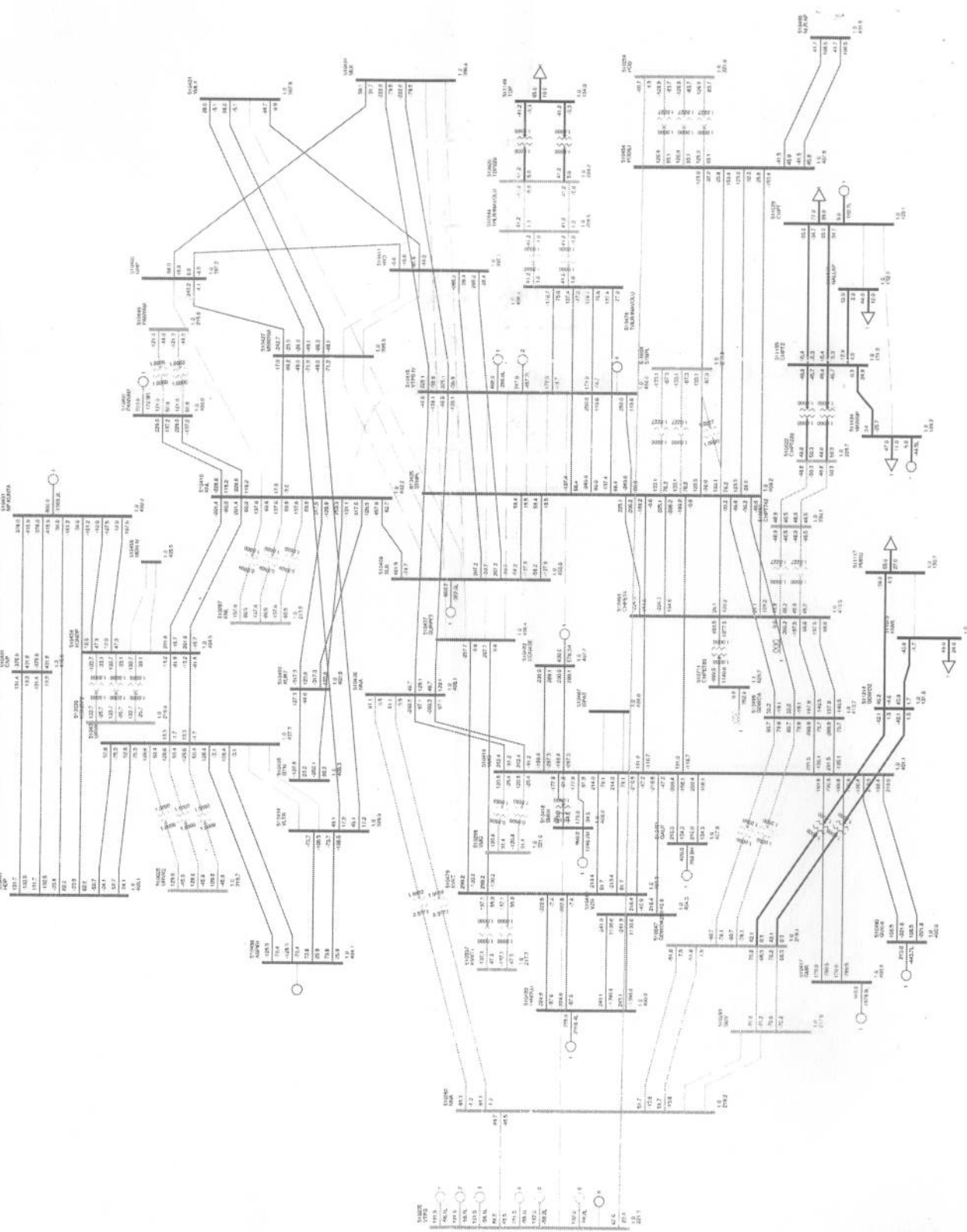
## ANNEXURE

LINE FLOWS WITH EVACUATION OF VTS-V STAGE 1 X 800 MW, PROPOSED 400/220 KV INAVOLU/THULLUR SS, CAPITAL CITY RING ALONG WITH ASSOCIATED 220 KV & 132 KV LINES AND SUBSTATIONS									
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		MW	MW	MW	MW	MW	MW	MW	MW
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3	400 kV VTS-IV - Malkaram	2 x 225.1	2 x 221.9	2 x 231.00	2 x 236.6	2 x 256.1	2 x 185	2 x 223.7	270.1
4	ICT loadings at 400/220 kV Sattenapalli	3 x 133.1	3 x 127.5	3 x 130.9	3 x 128.9	3 x 159.8	3 x 125	3 x 132.5	3 x 133.4
6	400 kV Sattenapalli - Podili	2 x 123.3	2 x 98.5	2 x 117.7	2 x 112.5	2 x 199	2 x 90.9	2 x 125.2	2 x 124
7	400 kV Sattenapalli - 765/400 kV Chilakaluripet	2 x 225.1	2 x 154.2	2 x 214.5	2 x 204.8	-	2 x 142.7	2 x 244.5	2 x 227.6
8	400 kV Sattenapalli - Srisailam	2 x 58.4	2 x 223.3	2 x 53.1	2 x 48.2	2 x 112.4	2 x 28.5	2 x 54.3	2 x 66.8
9	ICT loadings at 400/220 kV K V Kota	2 x 137.1	2 x 137.1	2 x 137.2	2 x 137.4	2 x 137.3	2 x 137.7	2 x 142.1	2 x 136.8
10	400 kV KV Kota - Hinduja	2 x -222.8	2 x -225.2	2 x -223.2	2 x -223.5	2 x -219.1	2 x -223.2	2 x -222.0	2 x -224.2
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12	400 kV KV Kota - Vemagiri	2 x -213.4	2 x -210.7	2 x -213.00	2 x -212.6	2 x -249.6	2 x -195.6	2 x -235.0	2 x -222.7
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16	400kV Vemagiri - Konaseema	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4	2 x -199.4
17	400kV Vemagiri - Gouatami	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4	2 x -209.4
18	400kV Vemagiri - Nunna	2 x 262.4	2 x 266.6	2 x 252.4	2 x 242.8	2 x 276.5	2 x 293.5	2 x 299.0	2 x 241.1
19	400kV Vemagiri - GVK -II	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4	2 x -106.4
20	400kV Vemagiri - GMR	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8	2 x -169.8
21	ICT loadings at 400/220 kV Podili	3 x 126.9	3 x 126.1	3 x 126.1	3 x 125.3	3 x 129.4	3 x 126.4	3 x 125.2	3 x 127.4
22	400 kV Podili - 765/400 kV Chilakaluripet	2 x -25.8	2 x -37.4	2 x -24.9	2 x -23.9	-	2 x -34.5	2 x -15.9	2 x -25.2
23	ICT loadings at proposed 400/220 kV Inavolu/Thullur	2 x 41.2	2 x 40	2 x 41.00	2 x 39.7	2 x 48.7	2 x 38.5	2 x 41.1	2 x 42.1
24	400kV Inavolu/Thullur - Sattenapalli	2 x 137.4	2 x 151.4	2 x 188	2 x 118	2 x 88	2 x 63.9	2 x 150.6	2 x 213.1
25	400kV Inavolu/Thullur - VTS-IV	2 x -178.7	2 x -191.4	2 x -229	-315.4	2 x -136.8	2 x -102.4	2 x -191.8	2 x -255.2
26	ICT loadings at proposed 400/220 kV Gudiwada	2 x 60.7	2 x 61.2	2 x 57.6	2 x 54.7	2 x 105.4	2 x 62.4	2 x 42.4	2 x 58.7
27	400kV Gudiwada - 765/400kV CH.Pet	2 x 197.9	2 x 178	2 x 200.1	2 x 202.2	-	2 x 172.4	2 x 149.8	2 x 202.3
28	400kV Gudiwada - Sattenapalli	2 x 30.2	2 x 49	2 x 36.5	2 x 42.4	2 x 104.8	2 x 50.4	2 x -11.2	2 x 32.1
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30	ICT loadings at 400/220 kV Kurnool	3 x 137.6	3 x 134.6	3 x 137.4	3 x 137.3	3 x 135.5	3 x 139.1	3 x 137.3	3 x 138.2
31	400kV Kurnool - Srisailam	-457.6	-200.5	-454.3	-451.2	-532	-420.6	-457.3	-455.7
32	400kV Kurnool - Gooty	253.3	216.5	253.3	253.2	272	247.6	254.5	249.8
33	400kV Kurnool - Kurnool	2 x 317.5	2 x 242.5	2 x 316.5	2 x 315.7	2 x 323.8	2 x 298.5	2 x 317.5	2 x 313.4
34	400kV Kurnool - Panyam	2 x -228.8	2 x -230.7	2 x -228.9	2 x -228.9	2 x -229.8	2 x -227.3	2 x -228.9	2 x -228.7



SL. No.	Description	with wind, solar & with Capital City Ring	Without wind & with Capital City Ring & No Gen at SLB	Without wind & with Capital City Ring outage of VTS-STNPL	Without wind & with Capital City Ring outage of 1 ckt of VTS-STNPL & VTS-Inavolu	Without wind & with Capital City Ring & outage of 400 kV CH. Peta	Without wind & with Capital City Ring & No Gen at VTS-V Stage (800MW)	Without wind & with Capital City Ring outage of Vemagiri-Gidiwada	Without wind & with Capital City Ring outage of VTS-STNPL & VTS-MLK
		MW	MW	MW	MW	MW	MW	MW	MW
35	ICT loadings at 400/220 kV Panyam	2 x 121.0	2 x 119.1	2 x 120.9	2 x 120.9	2 x 120	2 x 122.0	2 x 120.9	2 x 121.1
36	ICT loadings at 400/220 kV Kondapuram	3 x -133.7	3 x -134.5	3 x -133.7	3 x -133.7	3 x -134.3	3 x -133.8	3 x -133.7	3 x -133.8
37	400kV Kondapuram - Uravakonda	2 x -13.2	2 x -19.1	2 x -13.6	2 x -13.8	2 x -15	2 x -12.4	2 x -13.8	2 x -11.9
38	400kV Kondapuram - N.P.Kunta	2 x 12.0	2 x -2.4	2 x 12.5	2 x 13.0	2 x 48.8	2 x 12.9	2 x 13.6	2 x 10.0
39	400kV Kondapuram - Kurnool	2 x 201.8	2 x 223.1	2 x 201.6	2 x 201.4	2 x 168.1	2 x 200.3	2 x 200.8	2 x 202.6
40	ICT loadings at 400/220 kV Uravakonda	3 x -129.6	3 x -130.1	3 x -129.6	3 x -129.6	3 x -129.2	3 x -129.7	3 x -129.5	3 x -129.9
41	400kV Uravakonda - Hindupur	2 x 52.8	2 x 47.3	2 x 53.3	2 x 53.7	2 x 76	2 x 52.9	2 x 54.1	2 x 50.7
42	400kV Uravakonda - Aspiri	2 x 128.4	2 x 128.8	2 x 127.6	2 x 126.8	2 x 102.7	2 x 129.2	2 x 126.4	2 x 132.3
43	400kV N.P.Kunta - Hindupur	2 x 34.0	2 x 33.9	2 x 33.8	2 x 33.7	2 x 28.8	2 x 34.1	2 x 33.6	2 x 34.5
44	400kV N.P.Kunta - Chinakampalli	2 x 378.00	2 x 363.7	2 x 378.6	2 x 379.2	2 x 419.6	2 x 378.7	2 x 379.9	2 x 375.5
45	400kV Chinakampalli - Hindupur	2 x -131.40	2 x -125.6	2 x -131.8	2 x -132.2	2 x -153.2	2 x -131.6	2 x -132.5	2 x -130.0
46	400kV Aspiri - Veltoor	2 x 73.8	2 x 73.5	2 x 72.9	2 x 72.1	2 x 48.6	2 x 74.5	2 x 71.3	2 x 77.8
47	400kV Veltoor - Maheswaram	2 x 49.1	2 x 45.5	2 x 48.5	2 x 47.8	2 x 35.3	2 x 41	2 x 47.3	2 x 58.4
48	PTR Loadings at 220/132 kV Gudivada	2 x 42.1	2 x 42.00	2 x 42	2 x 42	2 x 43.8	2 x 41.9	2 x 39.9	2 x 42.2
49	400/200 kV Gudivada - 220kV Nunna	2 x -51.6	2 x -51.00	2 x -54.5	2 x -57.3	2 x -10.8	2 x -49.3	2 x -85.0	2 x -53.8
50	400/200 kV Gudivada - 220kV Gudivada	2 x 70.2	2 x 70.1	2 x 70.1	2 x 70	2 x 72.5	2 x 89.9	2 x 67.5	2 x 70.3
51	ICT Loadings at proposed 400/220 kV Chilakaluripet	2 x 48.9	2 x 50.8	2 x 48.7	2 x 48.5	-	2 x 50.8	2 x 47.7	2 x 48.8
52	PTR Loadings at proposed 220/132 kV Chilakaluripet	2 x 48.8	2 x 50.7	2 x 48.5	2 x 48.4	-	2 x 50.7	2 x 47.6	2 x 48.6
53	220 kV CH. Pet - 400/220 kV CH.Pet	2 x -48.8	2 x -50.7	2 x -48.5	2 x -48.4	-	2 x -50.7	2 x -47.6	2 x -48.6
54	PTR Loadings at proposed 220/132 kV Tadeapalli (Up-gradation of existing 132 kV Tadeapalli SS)	2 x 41.2	2 x 40.00	2 x 41.00	2 x 39.7	2 x 48.7	2 x 38.4	2 x 41.1	2 x 42.0
55	220 kV Tadeapalli - 400/220 kV Inavolu/Thullur	2 x -41.2	2 x -40	2 x -41.00	2 x -39.7	2 x -48.7	2 x -38.4	2 x -41.1	2 x -42.0
56	132 kV Kanumolu - 400/220/132 kV Gudivada	-43.6	-43.5	-43.5	-43.4	-47	-43.2	-39.4	-43
57	132 kV Pamarru - 400/220/132 kV Gudivada	-39.9	-39.9	-39.9	-39.9	-39.8	-39.9	-39.8	-39.9
58	132 kV Nallapadu - 220/132 kV CH. Pet	12.4	12.4	13.4	13.7	30.6	12.3	13.6	13.2
59	132 kV CH. Pet - 220/132 kV CH. Pet	2 x -55.0	2 x -56.3	2 x -55.2	2 x -55.3	2 x -24.1	2 x -56.2	2 x -54.5	2 x -55.1
60	132 kV Marrisalem - 220/132 kV CH. Pet	0.4	-0.1	0.9	1.2	18.2	-0.2	1.1	0.7
<b>EHT system losses</b>		<b>432.830</b>	<b>425.360</b>	<b>433.820</b>	<b>434.520</b>	<b>443.280</b>	<b>423.240</b>	<b>434.510</b>	<b>434.000</b>

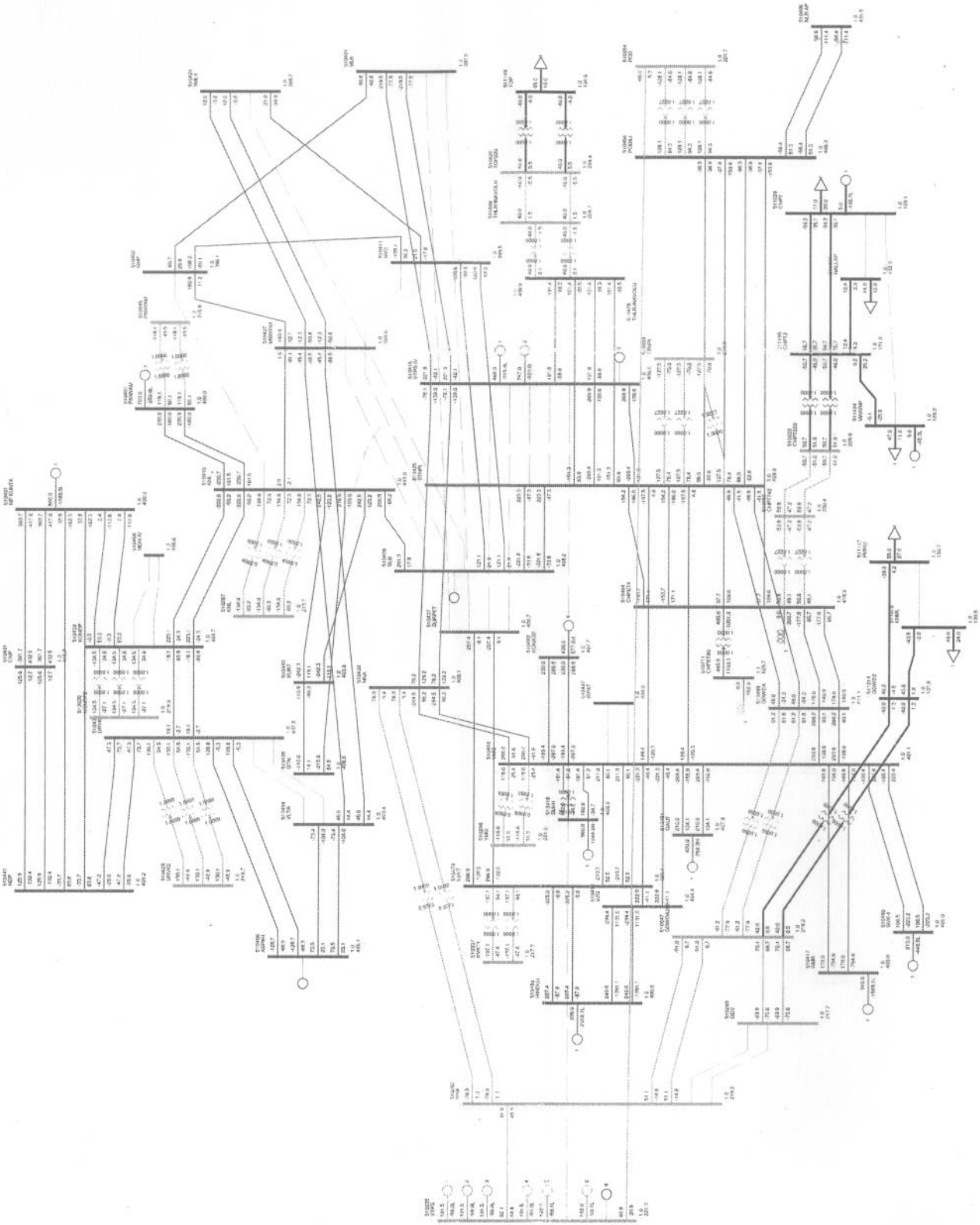
400KV INAVOLUTHULUR, CAPITAL CITY RING WITH VTPS-V STAGE 800MW EVACUATION



WITH NORMAL CONDITION  
EHT LOSSES: 432.80 MW



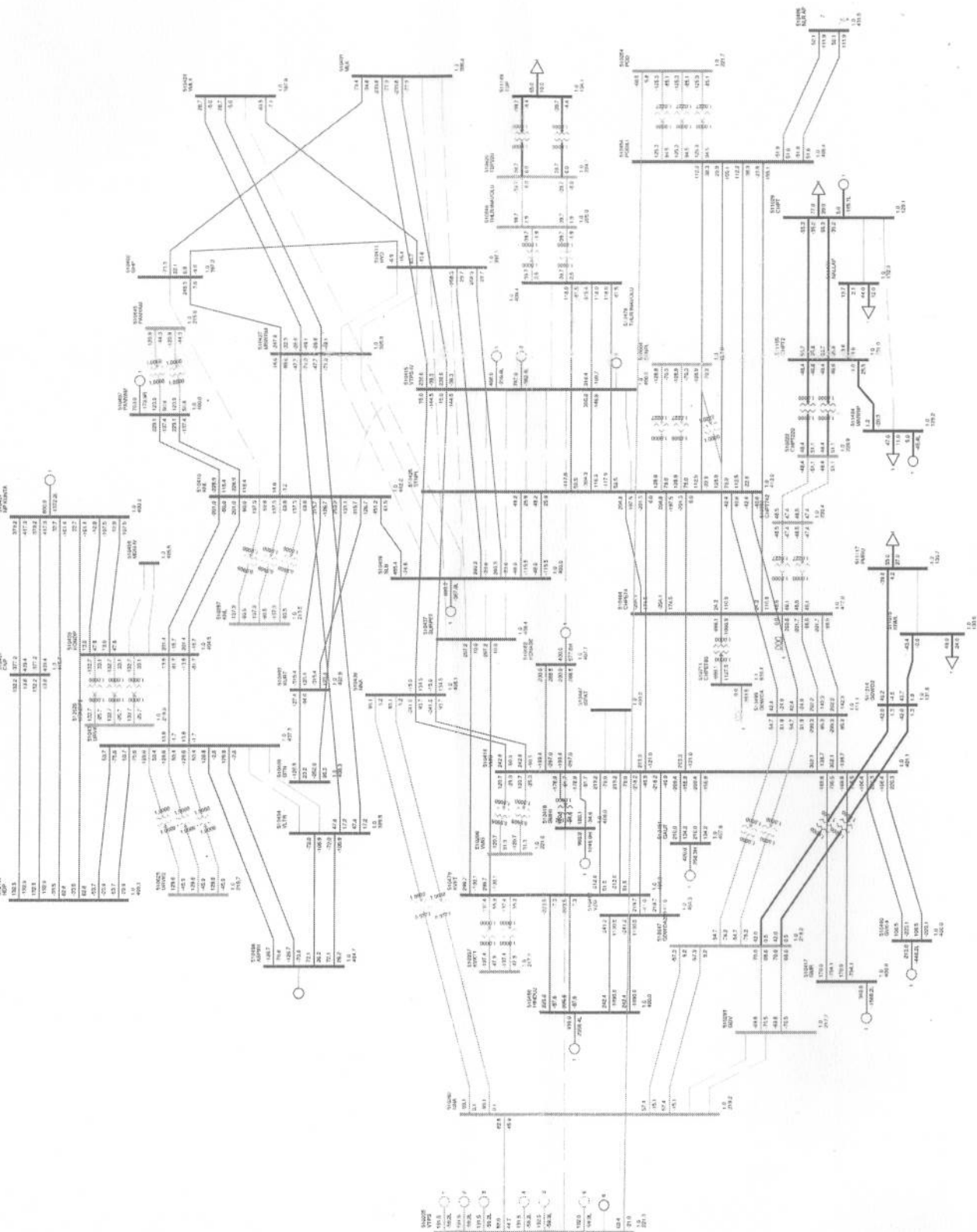
400KV INAVOLU/THULLUR, CAPITAL CITY RING WITH VTIPS-V STAGE 8000MW EVACUATION



WITHOUT GENERATION AT SLB  
EHT LOSSES:425.380 MW



400KV INAVOLU/HULLUR, CAPITAL CITY RING WITH VTIPS-V STAGE 800MW EVACUATION

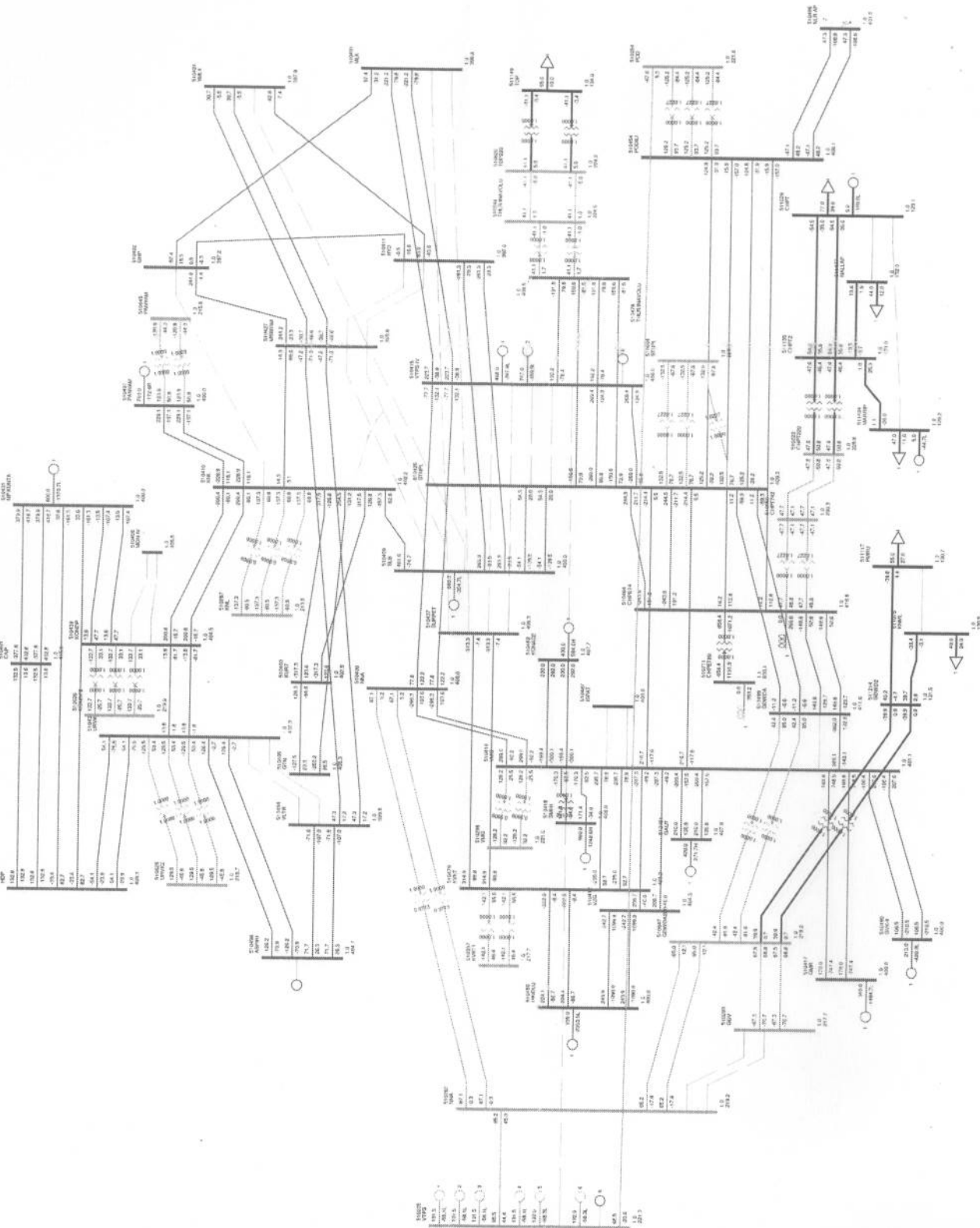


OUTFACE OF VTS-STRIP & VTS-NAVOLLU  
ENTRANCES-454-520 MM





400KV INAVOLU/THULLUR, CAPITAL CITY RING WITH VTPS-V STAGE 800MW EVACUATION



OUTAGE OF VMG-GUDWADA 400KV SC LINE  
EHT LOSSES:434.510 MW





Annex 14.1

TRANSMISSION CORPO ANDHRA PRADESH LIMITED

From:  
Chief Engineer/IPC & Power Systems  
APTRANSCO,  
Vidyut Soudha,  
Hyderabad – 500 082

To  
The Chief Engineer (SP & PA),  
Central Electricity Authority,  
Seva Bhavan, R.K.Puram,  
NEW DELHI – 110 066

Lr. No. CE(PS) / SE(SP)/DE(LTSS)/F. Pudimadaka & Polaki/D. No. 155/2015, Dt. 8.06.2015.

Sir,

Sub: Transmission system for power evacuation from proposed 4000 MW power plant of APGENCO at Polaki Srikakulam district., 4000MW Power plant by NTPC at Pudimadaka.-Request to conduct joint studies with CEA and PGCIL - Reg.

\*\*\*

It is to submit that NTPC has proposed 4X1000MW super critical TPS at Pudimadaka (V),Atchuthapuram(M) in Visakhapatnam district. 85% share may be allocated to Andhra Pradesh from this project and APGENCO has proposed 4 x 1000 MW power plant at Polaki, Srikakulam district.

In this regard APTRANSCO has carried out system studies for the year 2019-20 duly taking inputs from Resource plan of APTransco submitted to APERC.

The following scheme is proposed from Polaki (4000MW) to Vizag and from Vizag to Eluru as Eluru is near to New capital City . On 400KV side Eluru will be connected to K V Kota 400 KV SS and Gudivada 400KV SS through 400 KV quad moose lines hence power will be supplied to capital city via Gudivada 400 KV SS as Gudivada 400KV is planned to connect with Sattenapalli 400KVSS by making LILO of Vemagiri-Sattenapalli at Gudivada. Supply from Eluru 400 KV will also reach Sattenapalli 400 KV SS Via Gudivada-Chilakaluripeta-Sattenapalli 400KV quad moose ring main.

- 1) 765/400 KV Substation at Polaki ,Srikakulam Dt.
- 2) Laying of 765 kV Hexa zebra S/c line from Polaki 765 SS to Srikakulam 765/400KV SS of PGCIL
- 3) Laying of 765 kV Hexa zebra DC line from Polaki 765 SS to Pudimadaka 765/400KV SS.
- 4) Laying of 400KV Quad moose D/c line from Polaki 765 KVSS to Tekkali 400/220 KV SS.
- 5) Laying of 400 KV Quad moose D/c line from Polaki 765 KVSS to Garividi 400/220 KV SS.
- 6) Laying of 400 KV Twin moose D/c line from Palasa 765 KVSS to Tekkali 400/220 KV SS.
- 7) 765/400 KV substation at Pudimadaka ,Visakhapatnam Dt.
- 8) 400/220 K SS at Korupolu/Pudimadaka ,Vizag.

sk P  
Director  
17/6

- 9) Laying of 400 KV Quad moose D/c line from Pudimadaka 765 KVSS to Koruprolu/Pudimadaka 400/220 KV SS.
- 10) 765/400 KV substation at Eluru ,West Godavari Dt .
- 11) Laying of 765 kV Hexa zebra DC line from Pudimadaka 765 SS to Eluru 765/400KV SS.
- 12) Laying of 765 kV Hexa zebra DC line from Eluru 765 SS to Nellore 765/400KV SS of PGCIL.
- 13) Laying of 765 kV Hexa zebra S/C line from Eluru 765 SS to Chilakaluripeta 765/400KV SS of PGCIL.
  
- 14) Laying of 400KV Quad moose D/c line from Eluru 765 KVSS to KV Kota 400/220 KV SS.
- 15) Laying of 400KV Quad moose D/c line from Eluru 765 KVSS to Gudivada 400/220 KV SS

In this regard it is to submit that System Studies were carried out by considering the Transmission network proposed in the Resource plan and ARR up to 2018-19, taking into account Hinduja evacuation scheme, Krishnapatnam evacuation scheme and wind & solar to be come up in the Ananthapur,kadapa and Kurnool districts. The load flow is conducted for the FY2019-20 .The total generation is considered as 15262 MW and load is 12500 MW the total losses of AP network is 518 MW.

The Load flow results are emailed.

It is requested to conduct joint studies with CEA , PGCIL and APTransco at the earliest for the above two projects.

Yours faithfully,

  
Chief Engineer (IPC & Power Systems)

Copy to:

Sri Pardeep Jindal,  
Director (SP&PA)  
Central Electricity Authority,  
Seva Bhavan, R.K.Puram,  
NEW DELHI - 110066

Sri Mukesh Khanna, DGM(SEF)  
PGCIL,  
'Saudamini' Plot NO.2 Sector-29,  
GURGAON - 122001, Haryana.



(भारत सरकार का उद्यम)

(A Govt. of India Enterprise)  
(Formerly National Thermal Power Corporation Ltd.)केन्द्रीय कार्यालय नोएडा  
Corporate Centre NOIDA

Ref. No.: CC: PEE: 9591/ ATS/

Date: 01-05-2015

To  
Chairman and Managing Director  
APTRANSCO  
Vidyut Soudha  
Hyderabad-5000802  
Fax -040-66665137

Subject: Finalization of power evacuation scheme –Associated Transmission System for Pudimadaka (4x 1000 MW)

Dear Sir,

As you are aware, NTPC is implementing Pudimadaka STPP having capacity of 4000 MW (4x 1000 MW) in Visakhapatnam district of Andhra Pradesh.

The Land for the project has been handed over to NTPC and NIT (Notice Inviting Tender) for Main Plant packages (Turbine Generator & Steam Generator packages) published on 23/03/2015 and bid opening is scheduled in May -2015.

Government of Andhra Pradesh have already approached Ministry of Power, Government of India for allocation of 85% power to Andhra Pradesh and same is in the process of approval.

It is understood that APTRANSCO is intending to execute the Associated Transmission System of the project and studies are being undertaken.

In order to import power from Eastern Region to Southern Region, 765 kV Bulk Transmission system corridor interlinking Eastern Region-Southern Region with major 400/765 kV pooling substation at Srikakulam, Vemagiri, Chilkaluripeta, Cuddapah, Salem are already under implementation under Inter State Transmission Systems (ISTS). Two major ISTS 400/765 kV pooling substations i.e. Srikakulam and Vemagiri-II is located approximately 150 km away from Pudimadaka Project.

In the preliminary discussion with APTRANSCO, it is understood that 765 kV system is being thought by APTRANSCO for evacuation of Power and further integration with ISTS.

In this regard we would like to state that as Pudimadaka is a coastal project & fall in the cyclone prone area, Gas Insulated type generating switchyard (GIS type) is to be considered for the project.

Considering high cost of 765 kV GIS switchyard & 765 kV class Transformer and 85% of power envisaged to be absorbed by Andhra Pradesh, you may like to review some of the possible power evacuation options indicated below with power evacuation from the project with 400 kV step up system at Pudimadaka STPP (Block diagram attached at Annexure-I);

- i) 400 kV step-up switchyard at Pudimadaka with 400 kV high capacity quad lines to various load centers of AP/ISTS points (i.e. Vemagiri, K.V.Kota, Garivadi etc.)



ENGINEERING OFFICE COMPLEX, Plot No A-8A, Sector-24, Post Box No. 13, Noida  
(UP), Pin-201 307  
Telephone No: 0120-2410333, 2410116 Fax-0120-2410136, 2410137  
Registered Office: NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road,  
New Delhi-110 003  
Telephone No: 011-24360100 Fax-011-24361018, Website: www.ntpc.co.in



(भारत सरकार का उद्यम)

**NTPC Limited**  
(A Govt. of India Enterprise)  
(Formerly National Thermal Power Corporation Ltd.)

केन्द्रीय कार्यालय नोएडा  
Corporate Centre NOIDA

- ii) In case APTRANSCO plans to have 765 kV system, power from Pudimadaka may be pooled through 400 kV quad lines to 400/765 kV conventional Air Insulated substation (AIS) at suitable location (could be near Tuni) and further integrated to other APTRANSCO system as well. Integration with ISTS can be done at 765 kV level through nearby upcoming ISTS lines/substations. Provision of 400/765 kV pooling substation near Vizag (Tuni) would also ease out present congestion in the area.

We would also like to mention that the additional cost implication on account of 765 kV GIS at generation switchyard vis-a-vis 400 kV GIS generating switchyard works out to be approximately Rs. 560 Cr. The overall transmission cost scenario with various options along with block diagram is enclosed at **Annexure-I & II**.

You would appreciate that since 85% power is envisaged to be absorbed by Andhra Pradesh, power evacuation scheme indicated with option i) or ii) above would be beneficial to end consumers.

In view of above techno economic considerations, APTRANSCO is requested to carry out a study considering various power evacuation options, and a meeting may be called in association with CEA/CTU for finalization of power evacuation scheme/step up voltage of Pudimadaka STPP.

Since, NTPC has already gone ahead with tendering for various packages, finalization of power evacuation scheme has become essential. In this regard, we would also like to meet APTRANSCO official at the earliest (preferably 1<sup>st</sup> week of May 2015) as per convenience of APTRANSCO.

Thanking You,

Yours faithfully,

  
A. K. Gupta  
Executive Director (Engg)



ENGINEERING OFFICE COMPLEX, Plot No: A-8A, Sector-24, Post Box No: 13, NoIDA  
(C.P), Pin-201 307

Telephone No: 0120-2410333, 2410116 Fax: 0120-2410136, 2410137

Registered Office: NTPC Bhawan, Scope Complex, 7 Institutional Area, Lodhi Road,  
New Delhi-110 003

Telephone No: 011-24360100 Fax: 011-24361018, Website: www.ntpc.co.in

**Overall Cost Scenario with various power evacuation options for Pudimadaka STPP (4000MW)**

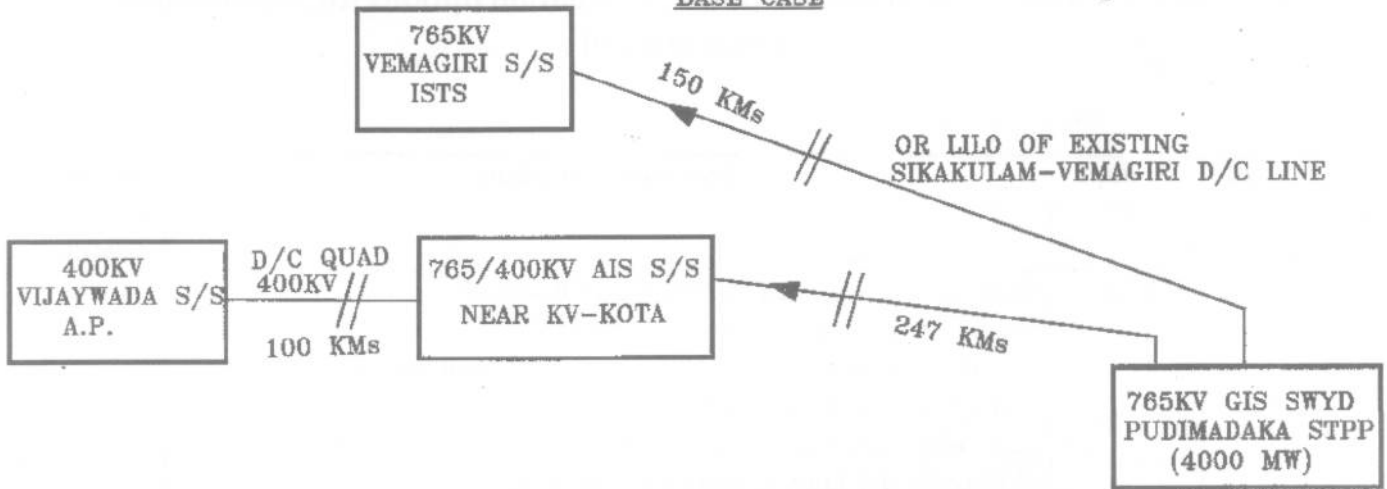
SLNo.	Options	Scheme Description	Overall Cost in Crores
01.	Base	<p><b>Step up &amp; evacuation at 765KV Voltage level;</b></p> <ul style="list-style-type: none"> <li>-Pudimadaka step up voltage- 765 kV,</li> <li>-Creation of new 400/765 kV pooling substation near KV-Kota &amp; integration to existing 400KV KV-Kota s/s.</li> <li>- 1X 765KV D/C lines to APTRANSCO KV-Kota S/S</li> <li>-1X 765KV D/C lines to Vemagiri-II ISTS S/S.</li> <li>- 1X 400KV D/C quad lines to APTRANSCO S/S Pool near KV Kota to Vijayawada.</li> <li>- Cost includes overall cost of APTRANSCO Transmission systems (lines &amp; S/S) and 765KV GIS generation switchyard</li> </ul>	4686
02.	Option-I	<p><b>Step –up &amp; evacuation voltage at 400 kV;</b></p> <ul style="list-style-type: none"> <li>-Pudimadaka step up voltage- 400 KV,</li> <li>- 2X 400KV D/C quad lines to APTRANSCO S/S Gariwadi &amp; KV Kota.</li> <li>- 1x400KV quad line to ISTS Vemagiri-II S/S</li> <li>- Cost includes overall cost of APTRANSCO Transmission systems (lines &amp; S/S) and 400 KV GIS generation switchyard</li> </ul>	2482
03.	Option-II	<p><b>Step up/evacuation voltage at 400/765 KV Voltage level;</b></p> <ul style="list-style-type: none"> <li>-Pudimadaka step up voltage- 400 kV,</li> <li>-Creation of new 400/765 kV pooling AIS substation near Tuni</li> <li>- 2X 400KV D/C quad lines to APTRANSCO S/S Gariwadi &amp; KV- Kota (through Tuni pool s/s).</li> <li>-Integration with ISTS at 765 KV Vemagiri-II either through LILO of Vemagiri-Srikakulam(50kms) 765 kV line or through 765KV D/C Tuni-Vemagiri line(100kms).</li> <li>- Cost includes overall cost of APTRANSCO Transmission systems (lines &amp; S/S) and 400KV GIS generation switchyard.</li> </ul>	2870



**765KV POWER EVACUATION SCHEME-PUDIMADAKA STPP (4000MW)**

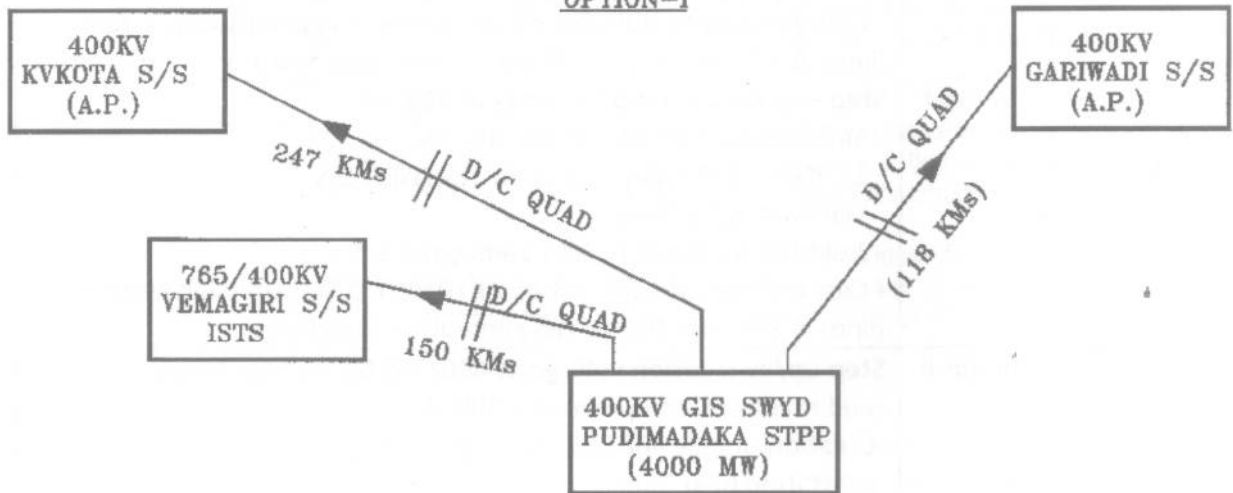
**ANNEXURE-I**

**BASE CASE**



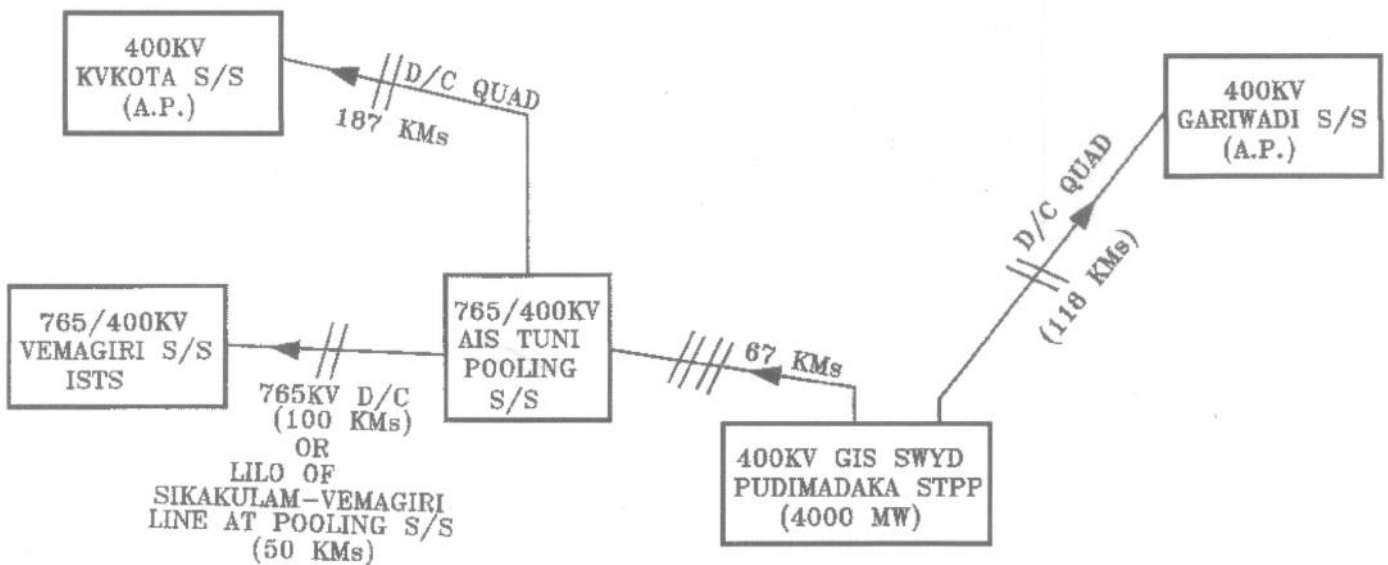
**400KV POWER EVACUATION SCHEME-PUDIMADAKA STPP (4000MW)**

**OPTION-I**



**400KV/765KV POWER EVACUATION SCHEME-PUDIMADAKA STPP (4000MW)**

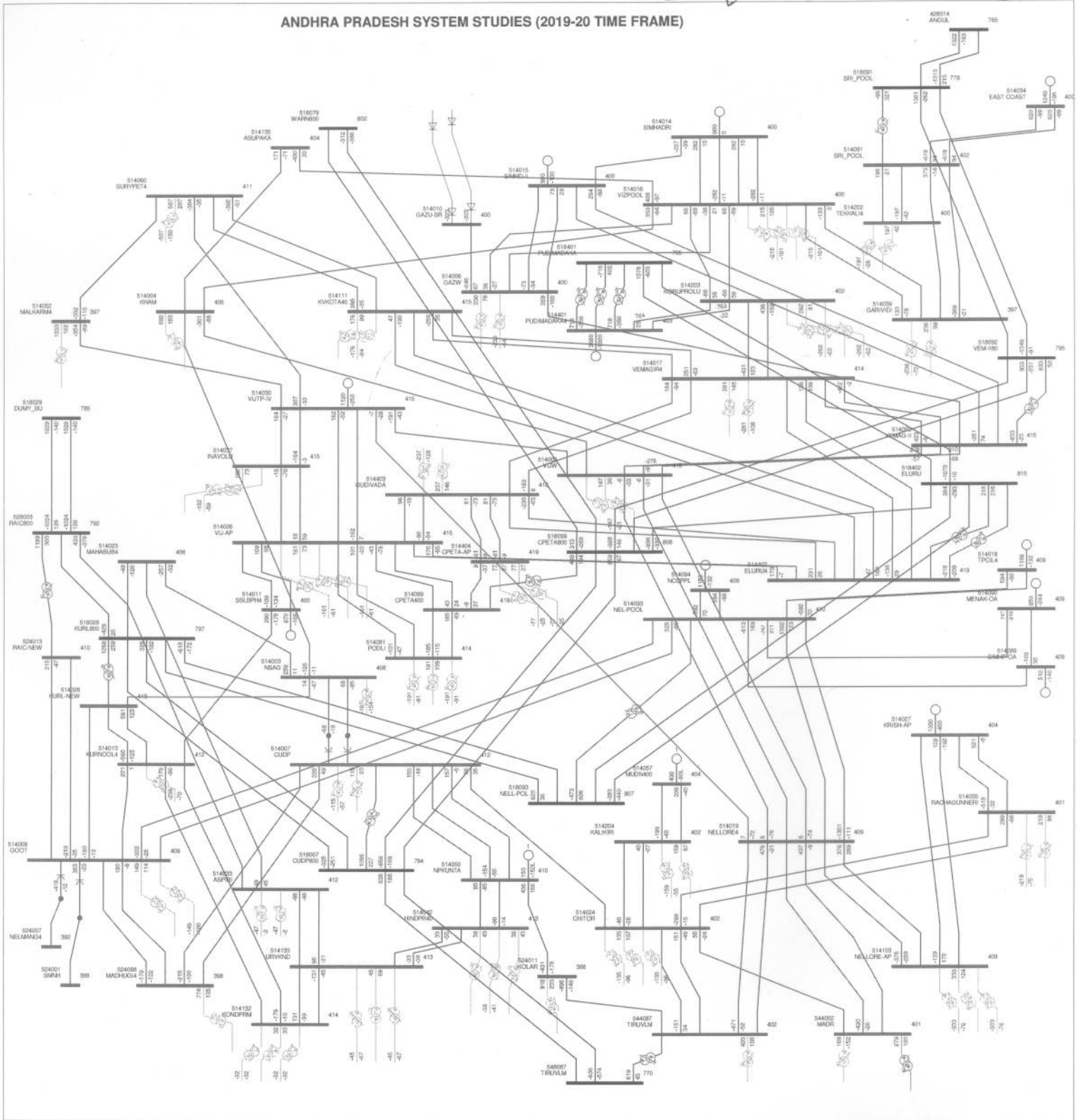
**OPTION-II**



Exhibits - AP studies

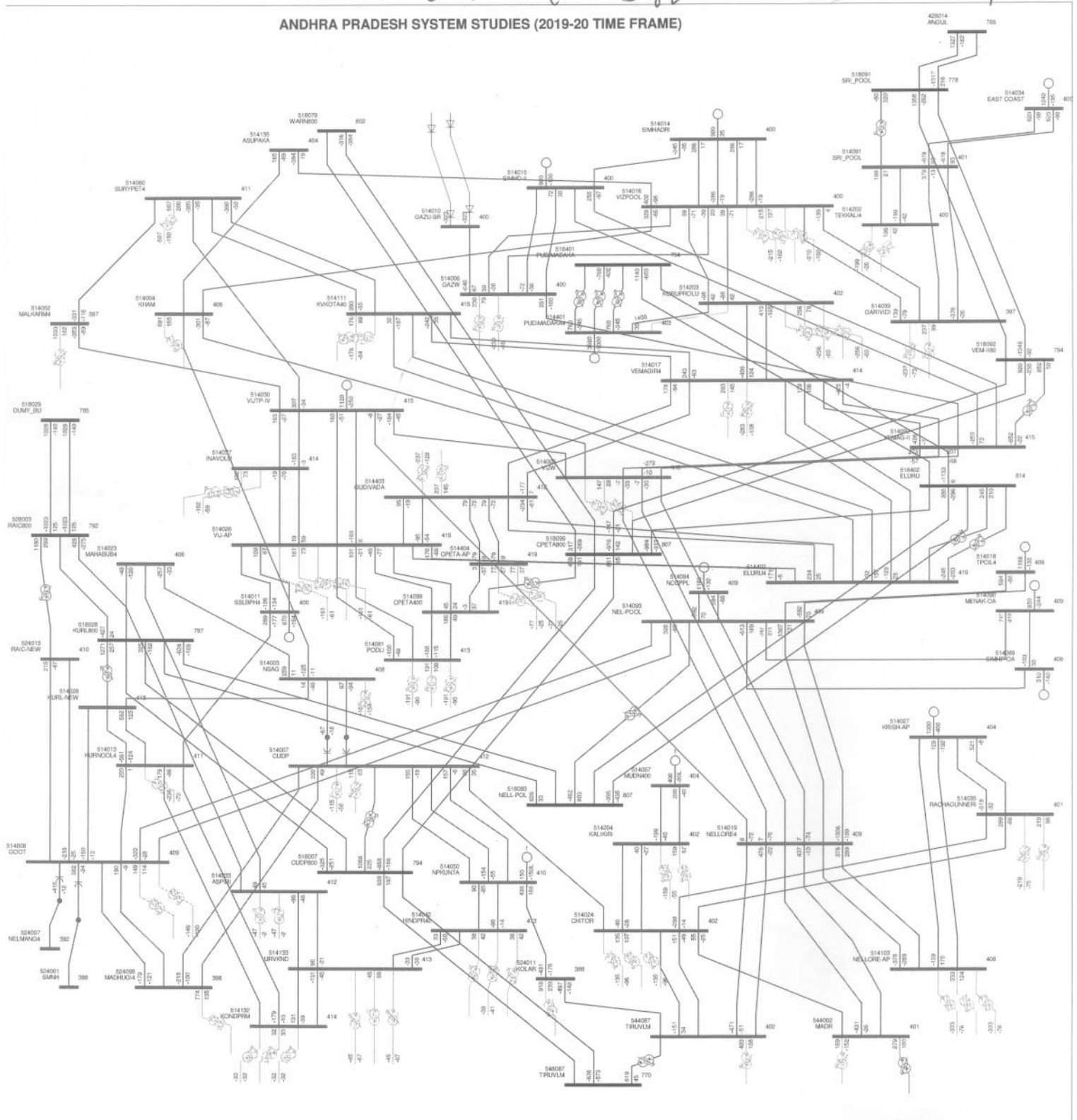
Case 1 [with Pudi n VTS]

ANDHRA PRADESH SYSTEM STUDIES (2019-20 TIME FRAME)



Case 1 (N-1) of Puducherry - Komprolu

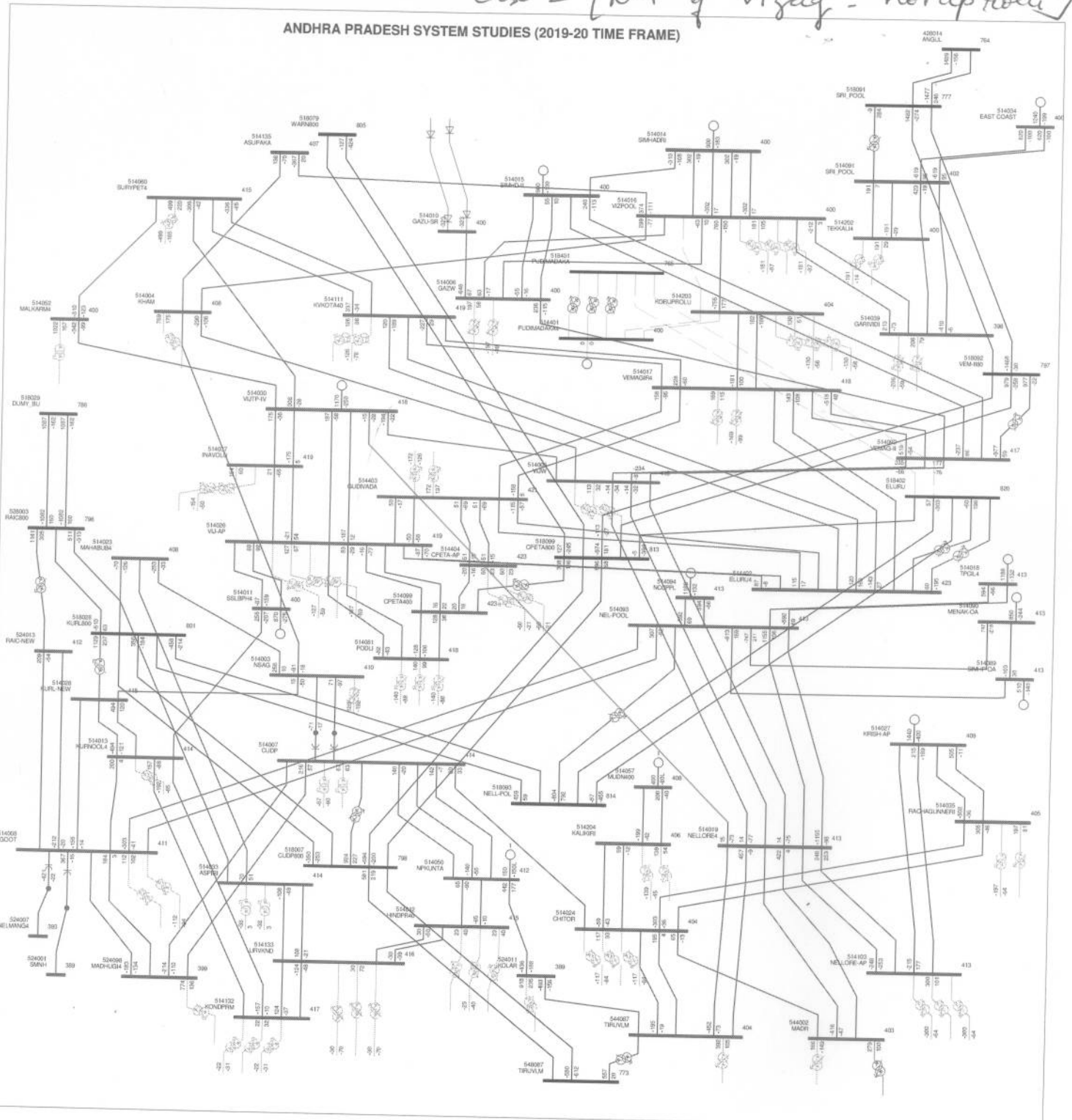
ANDHRA PRADESH SYSTEM STUDIES (2019-20 TIME FRAME)





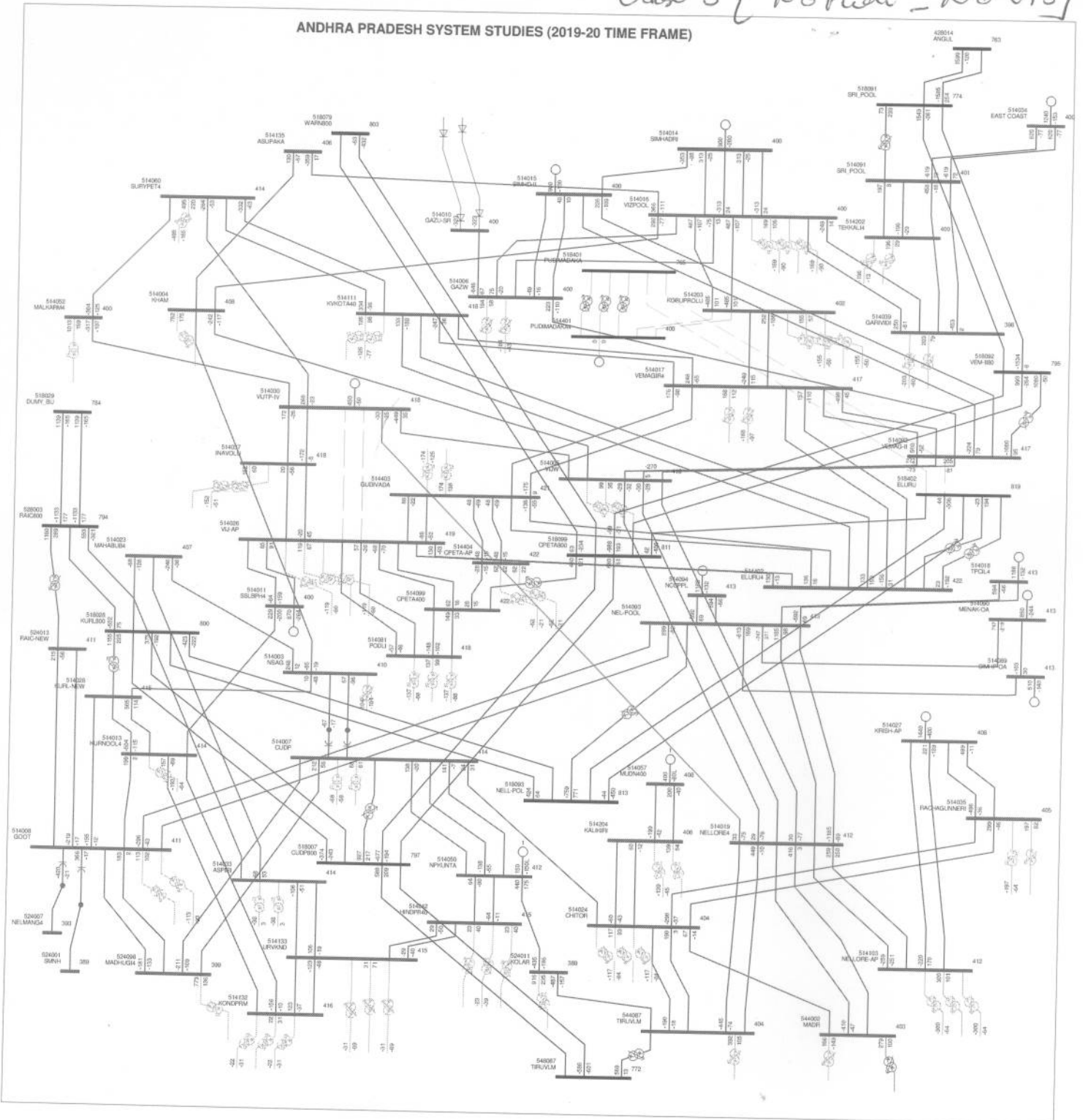
Case 2 [N-1 of Vizag - Korupolu]

ANDHRA PRADESH SYSTEM STUDIES (2019-20 TIME FRAME)



Case 3 [ No Pueli - No UTS ]

ANDHRA PRADESH SYSTEM STUDIES (2019-20 TIME FRAME)





Case 3 - (N-1 of Vizag - Korupolu)

ANDHRA PRADESH SYSTEM STUDIES (2019-20 TIME FRAME)

