

**MINUTES OF SYSTEM STUDIES (SS) MEETING**

**Date** : 06/08/2015 (Thursday)

**Time** : 14:00 hrs

**Venue** : "Hotel Nandan", Guwahati.

The List of Participants in the Meeting is attached at **Annexure – I**

Shri P.K. Mishra, Member Secretary, NERPC requested Shri B. Lyngkhoi, Director/SE(O) to continue & take up the System Studies Agenda.

**1. Review of SPS I, II, III & SPS IV related to Palatana GBPP, OTPC after commissioning of Palatana Module II**

Out of the four (4) System Protection Scheme (SPS) associated with generating Unit-1 (363.3MW) of OTPC at Palatana, three (3) SPS have already been implemented:

**SPS II (implemented w.e.f 23.02.15):**

In case of tripping of 400 kV Palatana- Silchar D/C lines (with Module I & II generation of Palatana, OTPC), load will be disconnected by tripping of the following elements:

132 kV Silchar - Srikona D/C

132 kV Silchar - Panchgram

132 kV Badarpur - Panchgram

132 kV Silchar - Dullavcherra - Dharmanagar

And Generation of Palatana, OTPC will be reduced to around 20 MW excluding their auxiliary consumption.

During 5th SS meeting, OTPC representative informed that they are planning different scheme in place of SPS-II above, since reduction of generation to 20 MW is not possible.

NERLDC stated that 400/132 kV, 125 MVA ICT at Palatana should be tripped under this SPS II for safe, secure & reliable operation of the grid.

During 111st OCC meeting, DGM, OTPC informed that the new scheme planned by them would be sent to NERLDC/NERPC by 31.07.2015.

**Deliberation of the sub-Committee**

DGM, (SO-II), NERLDC informed that till date they have not received the new scheme planned by them.

***After detailed deliberation, the Sub-committee directed OTPC to send the schematic details of the new scheme planned by them to NERLDC/NERPC by 16.08.2015.***

***Action: OTPC***

NERLDC informed that since Palatana is now generating more than 500 MW, SPS I, & SPS IV associated with Palatana, OTPC are to be renewed & redesigned:-

**SPS I (implemented w.e.f 14.09.13):**

In case of tripping of Module I & II of Palatana, OTPC, load disconnection is to be enhanced.

**SPS IV (implemented w.e.f 23.02.15):**

In case of tripping of 400 kV Silchar – Byrnihat & 400 kV Silchar- Azra lines (without generation of Palatana, OTPC), load disconnection is to be enhanced.

Study results carried out by NERLDC is attached in ***Annexure -1 (a, b, c & d)***.

During 7<sup>th</sup> SS meeting, SE(O) informed that present load disconnection is around 80MW during off-peak and 130MW during peak. He enquired from NERLDC the new quantum load disconnection proposed by them.

DGM (SO-II), NERLDC informed that the new enhanced load is around 180 MW/130 MW in both peak/off-peak which is required for safety, secure & reliable operation of the grid.

NERLDC gave presentation on enhancement of load shedding through SPS I/SPS IV related to tripping of Palatana machines. DGM (SO-II), NERLDC informed that Palatana is generating more than 550 MW. In case of tripping of Palatana machine with more than 550 MW generation, SPS I / SPS IV related load disconnection amount is not sufficient for safe, secure & reliable grid operation. It is required to enhance SPS I / SPS IV related load disconnection. SPS I / SPS IV related load disconnection may be enhanced if 132/33 kV, 2x50 MVA transformers at Silchar & 132 kV Aizwal – Lungmual line also disconnected through these SPS.

P&E, Mizoram informed that 132 kV Aizwal – Lungmual line may be opened through SPS I / SPS IV in case of tripping of Palatana machines.

MSPCL is requested to connect radial load of around 35 MW at 132/33 kV, 2x50 MVA transformers at Imphal. NERTS, POWERGRID was requested to explore the implementation of SPS I / SPS IV based load disconnection through these elements also.

AGM, LDC, AEGCL suggested to disconnect the ICT at Silchar instead of increasing the number of feeders to be disconnected and this requires many wiring activities and the scheme may not work properly during real time contingency.

All members agreed to the proposal of Assam and members requested NERLDC to carry out the system study for above proposal. Members also requested NERTS to check the alternate feasibility for additional wiring in case load enhancement by disconnecting at Imphal S/S & Luangmual S/S of POWERGRID is required.

DGM (AM) stated that feasibility report above will be sent shortly to NERLDC/NERPC.

**Deliberation of the sub-Committee**

DGM (AM) stated that tripping of ICT at Imphal is not feasible and the possibility is only at Silchar.

GM (AM) added that unless all the links are covered by OPGW it would not be possible to implement SPS through PLCC.

DGM (SOII), NERLDC informed that OPGW work of 400 kV Silchar – Imphal D/C lines (Charged at 132 kV) is under progress.

***The Sub-committee requested NERTS to check the feasibility at Silchar so that the scheme can be implemented at the earliest.***

***Action: NERTS, POWERGRID***

**2. SPS based generation reduction of AGTPP in case of tripping of 132 kV**

**AGTPP – Kumarghat line**

It has been observed from study results that after commissioning of Palatana 2nd Module, Monarchak Unit I & II and AGTPP Unit 5 & 6, 132 kV AGTPP – Kumarghat, 132 kV Monarchak – Udaipur, 132 kV Baramura – Teliamura & 132 kV Teliamura-Ambassa lines will be highly loaded.

In case of tripping of 132 kV AGTPP - Kumarghat line, following lines will be overloaded:-

1. 132 kV Monarchak - Udaipur : 72 MW
2. 132 kV Dhalabil - Agartala : 84 MW
3. 132 kV Dhalabil - Kamalpur : 79 MW
4. 132 kV Baramura - Teliamura : 88 MW
5. 132 kV Teliamura - Ambassa : 86 MW
6. 132 kV PK Bari - Kumarghat : 92 MW
7. 132 kV PK Bari - Ambassa : 81 MW
8. 132 kV PK Bari - Kamalpur : 76 MW

During 7<sup>th</sup> SS Meeting, NEEPCO once again informed that that SPS related generation reduction of AGTPP would be implemented by them before trial operation of STG II of AGTPP.

**Deliberation of the sub-Committee**

NEEPCO informed that SPS at AGTPP was completed on 22.07.2015.

***The Sub-committee noted as above and appreciated NEEPCO.***

**3. Assessment of Inter State Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) by SLDC on respective Inter-State Transmission Corridor:**

As per Clause No. 4.1 of 'Detailed Procedure for Relieving Congestion in Real Time Operation', SLDC shall assess TTC, TRM and ATC on it's inter-state transmission corridor considering a mesh intra-state corridor for import or export of power with the Inter-state Transmission system (ISTS).

SLDCs of NER are requested to assess the above on monthly basis, 5 months in advance (eg: TTC/TRM/ATC for the month of November to be calculated by 15th of July), for further assessment of TTC, ATC and TRM of NER -ER corridor by NERLDC and for assessment of TTC / ATC for a group of control areas, individual control areas with the region and state-control-area to state-control-area by NERLDC, if required.

During 111st OCC meeting, NERLDC requested SLDCs of NER once again for submission of study results of peak & off peak scenarios related to assessment of TTC, TRM & ATC on respective Inter State Transmission Corridor on monthly basis

for 5th month by 15th of the month by them. NERLDC requested to identify the persons of each SLDC of NER who will conduct system study of their system.

The names of following officers who are carrying out the system studies were furnished by the constituents.

Constituent	Name of Nodal Officer	Contact No	Email id:
Ar. Pradesh	Domo Kamduk	09707380294	sldcitnagar@gmail. com
Assam	Navojit Patir	09612950771	
Manipur	S.J. Kumar Sharma	09436144113	sldcmanipur@gmail.com
Mizoram	Zoramdina	09774285158	sldc_mizoram@rediffmail.com
Meghalaya	D.J. Lyngdoh	09863063375	davidjeremy123@yahoo.co.in
Nagaland			
Tripura	Mrinal Paul	09436137022	mrinalpaulnit@gmail.com

***The Sub-committee requested Nagaland to nominate the concerned officer at the earliest.***

**Deliberation of the Sub-Committee**

Since there was no representative from Nagaland, the status could not be updated.

***The Sub-committee noted as above.***

***Action: Nagaland***

**4. Implementation of islanding scheme in NER**

During the 94thOCC meeting, the committee had decided the following islanding scheme and associated frequencies levels for creation of islands in NER:

SN	Islanding Scheme	Lines required to be opened	UFR Location	Implementing Agency
1	<b><u>ISLAND AT 48.80 Hz with 500 ms delay:</u></b> Island comprising of generating units of AGBPP (Gas), NTPS (Gas) & LTPS (Gas) and loads of Upper Assam system & Deomali area (Ar. Pradesh)	(a) 220 kV New Mariani (PG) – AGBPP	UFR-1 [At New Mariani (PG)]	<b>PGCIL</b>
		(b) 220 kV Mariani – Misa	UFR-2 [At Mariani, Samaguri of AEGCL]	<b>AEGCL</b>
		(c) 220 kV Mariani – Samaguri		
		(d) 132 kV Mokukchung – Mariani		

	[Total Generation: 380-400MW and load: 200MW (off peak)-300MW (peak)]	(e) 132 kV Dimapur (PG) – Bokajan	UFR-3 [At Dimapur (PG)]	PGCIL
		(f) Generators to be desynchronized for reduction of generation [if Generation > Load in the islanded pocket]		
		(g) De-synchronization / isolation of one GT and one ST from each of two modules of AGBPP, which are in operation, leading to reduction of generation of about 80-90 MW [i.e each module will contribute to reduction of about 40-45 MW (GT:30MW+ST:15MW)].	At AGBPP [UFRs of line bays & Generator to be used]	NEEPCO
		(h) Lines required to be opened for load shedding of 30MW (off-peak) and 50MW (peak) [if load > generation in the islanded pocket]		
		(i) 132kV Tinsukia – Ledo S/C line (at 48.7Hz instantaneous).	UFR [At Tinsukia]	AEGCL
		(j) 66kV Tinsukia – Rupai S/C line (at 48.6Hz instantaneous)		AEGCL
		(k) 132kV Jorhat – Bokakhat line (at 48.5Hz instantaneous)	UFR [At Jorhat / Bokakhat]	AEGCL
2	<b>ISLAND AT 48.80 Hz with 500 ms delay :</b> Island comprising of generating units of AGTPP (Gas), generating units at Baramura (Gas), Rokhia (Gas) & Gumati (Hydro) and loads of Tripura system & Dullavcherra area (Assam)	132 kV Palatana – Udaipur	UFR-1 [At Palatana]	OTPC
		132 kV Palatana – Surjamani Nagar		
		132 kV Silchar – Dullavcherra	UFR-2 [At Silchar]	PGCIL
		132 kV AGTPP – Kumarghat	UFR-3 [At Kumarghat]	PGCIL
		132 kV P K Bari – Kumarghat		
3	<b>ISLAND AT 47.90 Hz:</b>	To be decided after system study		

	Isolation of NER from NEW grid at ER-NER boundary with rest of the generation and load of NER	
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After detailed deliberation, the 4<sup>th</sup> SS Sub-committee decided to set both the Islanding Scheme I & II at 48.80 Hz. Necessary action has to be carried out by concerned utilities at the earliest.

During 5<sup>th</sup> SS meeting, Manager (AM), NERTS informed that resetting of frequency from 48.5 Hz to 48.8 Hz with 500 ms delay in Islanding Scheme – II have been completed by them.

OTPC informed that that resetting of frequency from 48.5 Hz to 48.8 Hz with 500 ms delay in Islanding Scheme – II will be completed by May, 2015. The status will be intimated in next meeting.

**Deliberation of the sub-Committee**

OTPC informed that the scheme has already been implemented by them on 04.08.15.

***The Sub-committee noted as above and appreciated OTPC. The Islanding Scheme in NER is now completed in all respect.***

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**List of Participants in the 8<sup>th</sup> System Studies Meeting on 06/08/2015**

SN	Name & Designation	Organization	Contact No.
1.	Sh. Nangkong Perme, EE, SLDC	Ar. Pradesh	09436288643
2.	Sh. M.K. Bordoloi, CGM, SLDC	Assam	09435203996
3.	Sh. J.K. Baishya, AGM	Assam	09435041494
4.	Sh. Karuna Sarma, Asst. Mgr	Assam	09435013532
5.	Sh. A. Bhattacharya, Dy. Mgr.	Assam	09435332928
6.	Sh. J.P. Choudhury, AGM	Assam	09954055295
7.	Sh. A.N. Dev Choudhury, AGM	Assam	09854120791
8.	Sh. Laishram Ritu, Manager	Manipur	09612882984
9.	Sh. Khoisnam Steela, Manager	Manipur	08730831103
10.	Sh. T. Gidon, EE, SLDC	Meghalaya	09774479956
11.	Sh. Javed M. Warjri, AEE ,SLDC	Meghalaya	09856012700
12.	Sh. S. Saha. AE (SP)	Meghalaya	09436112798
13.	Sh. A.G. Tham, AE (SP)	Meghalaya	09774664034
14.	Sh. Lalduhawma, EE (SLDC)	Mizoram	09436144113
	<b>No Representative</b>	<b>Nagaland</b>	
15.	Sh. U. Debbarma, DGM	Tripura	09436462842
16.	Sh. D. Pal, Sr. Manager	Tripura	09436500244
17.	Sh. T.S. Singh, GM	NERLDC	09436302717
18.	Sh. A. Mallick, DGM (SO-II)	NERLDC	09436302720
19.	Sh. S. Konar, Ch. Manager	NERLDC	
20.	Sh. B. Medhi, Manager	NERLDC	0943635376
21.	Sh. A. Patir, GM (AM)	PGCIL	09436302529
22.	Sh. P. Kanungo, DGM (AM)	PGCIL	09436302823
23.	Sh. Suranjan Sarkar, Sr. Manager	NEEPCO	08974009294
24.	Sh. Bhaskar Goswami, Sr. Manager	NEEPCO	09436163981
25.	Sh. Narendra Kr Gupta, Manager	OTPC	09774233426
26.	Sh. T. Karmakar, Asst. Manager (E)	OTPC	09435239314
	<b>No Representative</b>	<b>NHPC</b>	
	<b>No Representative</b>	<b>NTPC</b>	
27.	Sh. P.K. Mishra, MS	NERPC	09968380242
28.	Sh. B.Lyngkhoi, Director/S.E (O)	NERPC	09436163419
29.	Sh. S.M. Jha, E.E	NERPC	08731845175
30.	Sh. S. Mukherjee, AEE	NERPC	08794277306
31.	Sh. Shaishav Ranjan, A.E	NERPC	08794276168