A.1 Implementation of revised SPS-3 scheme
As per the Minutes of 20th TCC & 20th NER Power Committee Meetings held at Guwahati on 12th Sept., 2019 (Agenda No. D 20), the said SPS is to be discussed again in OCC and it is to be put up in the 21st TCC/RPC Meeting.
In 162nd OCCM Director, NERPC recounted the deliberations of the 20th TCC/NERPC meeting, wherein it was decided that the scheme of SPS-3 with generation reduction for Palatana to be reviewed in OCC forum.

OTPC representative stated that 400kV corridor is tripping prone and this triggers SPS-3 condition frequently. Due to this machines come under tremendous stress and their health is affected.

ED, NERLDC stated SPS-3 is necessary for secure operation of the NER Grid. As the generation in the southern NER pocket remains high for most of the time of the day, generation reduction is the only option for successful operation of SPS 3. He stressed upon the forum to implement revised SPS-3 scheme based on flow based scheme at the earliest to ensure reliable and secure operation of NER Grid. Until the implementation of revised scheme, existing SPS-3 to be kept in service as per the real time requirements.

As per deliberations in the previous meeting(s), NERTS updated the following status w.r.t. implementation of revised SPS-3:
- Budgetary offer received from M/s GE, amount approximately Rs 1 Cr.
- Detailed breakup yet to be submitted by M/s GE.

Members may please discuss

A.2 Mock Test for SPS in NER
Decision as per previous meeting(s):

(i) Periodic Mock test (frequency once in six months) to be conducted for all SPS. However, the scope would not cover physical tripping of elements/generating units. Prior to a Mock Test the modalities and objectives for testing to be determined by Sub-group.

(ii) Mock Test to be conducted in Feb’20 after finalisation of modalities in the Special Meeting to be held on Feb’20.

Members may please discuss

AGENDA ITEMS FROM NERLDC:
A.3 Review of existing SPS-5 to SPS-9:
Due to the recent developments in the NER power system, following 5 nos. of existing Special Protection Schemes needs to be reviewed:

<table>
<thead>
<tr>
<th>SPS No.</th>
<th>SPS Logic</th>
<th>Stations Involved</th>
<th>SPS Signals Involved</th>
<th>Remarks</th>
<th>Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPS-5</td>
<td><strong>Input</strong></td>
<td><strong>Output</strong></td>
<td><strong>Additional Information</strong></td>
<td><strong>Responsible Party</strong></td>
<td></td>
</tr>
<tr>
<td>-------</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Power flow reaches 60 MW from 220 kV to 400 kV side through 400/220 kV, 2x315 MVA ICTs at Azara (PG)</td>
<td>Tripping of 400/220 kV, 2x315 MVA ICTs at Azara (AEGCL)</td>
<td>Logic configured at Azara</td>
<td>AEGCL</td>
<td></td>
</tr>
<tr>
<td>SPS-6</td>
<td>Tripping of both 132 kV Umiam Stg-I to Umiam Stg-III D/C lines</td>
<td>Load reduction (Mawphlang area)</td>
<td>Signal from Umiam Stage III to stage I power station; &amp; load reduction by tripping of Mawphlang feeder- 1 &amp; 2 at Stage-I power station</td>
<td>MePTCL</td>
<td></td>
</tr>
<tr>
<td>SPS-7</td>
<td>Overloading of 220 kV Salakati – BTPS D/C lines (more than 600 Ampere current per circuit) in Salakati – BTPS direction</td>
<td>Tripping of 132 kV BTPS – Dhaligaon I &amp; II lines</td>
<td>Logic configured at 220 kV BTPS(AEGCL)</td>
<td>AEGCL</td>
<td></td>
</tr>
<tr>
<td>SPS-8</td>
<td>Tripping of any one of 400/132 kV, 2x200 MVA ICTs at Silchar (PG)</td>
<td>Load reduction of South Assam area</td>
<td>Logic locally configured at Silchar</td>
<td>POWERGRID</td>
<td></td>
</tr>
</tbody>
</table>
NERLDC may please deliberate.

A.4 Implementation of New SPS for reliable & secure operation of Generators:

a. SPS related to secure & reliable operation of BgTPP

At present, BgTPP is connected to rest of NER Grid through 400 kV BgTPP - Bongaigaon I & II lines and 400/220 kV, 2x315 MVA ICTs at BgTPP. After commissioning of 3rd Unit of BgTPP

- For the safe and secure operation of BgTPP, SPS related to generation reduction to 600 MW is to be designed & implemented in case of tripping of 400 kV BgTPP – Bongaigaon I & II lines.

b. SPS related to secure & reliable operation of Monarchak

- At present, Monarchak is connected to rest of NER Grid through 132 kV Monarchak – Rokhia line & 132kV Monarchak- Udaipur line.
- Allowable line loading of these evacuation lines as per TSECL: 65 MW
- In case of tripping of 132 kV Monarchak – Rokhia line or 132kV Monarchak-Udaipur line, other line will be overloaded.
- Under this scenario, SPS related to generation reduction to 65 MW is to be designed & implemented.

NERLDC may please deliberate.

| SPS -9 N-1 contingency of 132 kV AGTCCPP – Kumargha S/C (kept in service, if generation is more than 84 MW) | Tripping of GTG-3 at AGTCCPP | AGTCCPP (NEEPCO) | Logic locally configured at AGTCCPP | AGTCCPP - Agartala D/C reconductoring done. Scheme needs review | NEEPCO |

NERLDC may please deliberate.

B.1 Implementation of SPS schemes w.r.t transfer of power to Bangladesh:

In the 8th OCC meeting of India –Bangladesh Interconnection held on 23.01.20, it was agreed to implement 4 nos. of SPSs to ensure reliable power supply to South Comilla and Tripura by Mar’20.

Agreed brief details of the scheme is given below:
Agenda for Special Meeting to be held on 20th February, 2020

1. Outage of one ICT out of 400/132 kV, 2x125 MVA ICTs at Palatana
   - 60 MW Load disconnection at South Comilla area of Bangladesh.
   - Followed by shifting of 60 MW load to main Grid of Bangladesh Grid till restoration of the element.

2. Outage of 400 kV Palatana – Surajmani Nagar line (Charged at 132 kV)
   - Entire load disconnection of South Comilla area of Bangladesh.
   - Followed by shifting of entire load of South Comilla area to main Grid of Bangladesh Grid till restoration of the element.

3. Outage of one circuit of 400 kV Surajmani Nagar - South Comilla line (Charged at 132 kV)
   - 30 MW Load disconnection at South Comilla area of Bangladesh.
   - Followed by shifting of 30 MW load to main Grid of Bangladesh Grid till restoration of the element.

4. Outage of both 400/132 kV, 2x125 MVA ICTs at Palatana
   - Entire load disconnection of South Comilla area of Bangladesh. Followed by shifting of entire load of South Comilla area to main Grid of Bangladesh Grid till restoration of the element.

The detailed schematic for implementation of the SPS is attached at Annexure-B.1.

**NERTS & OTPC may kindly intimate the latest status.**

**B.2 Installation of additional UFRs under Islanding Scheme-II:**

Decisions as per previous meeting(s):
- Additional UFR based shedding of 100MW required under this scheme.
- Identification of feeders done as per recommendations of Joint Committee visit as under:

<table>
<thead>
<tr>
<th>Name of Substation</th>
<th>Feeders identified</th>
<th>Load Relief</th>
<th>Recommended UFR settings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Peak</td>
<td>Off Peak</td>
</tr>
<tr>
<td>132/33/11 kV Ambassa</td>
<td>1. 33 kV Gandacherra</td>
<td>3.48</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2. 33 kV Salema</td>
<td>2.2</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>3. 33 kV Manu</td>
<td>6.2</td>
<td>5.5</td>
</tr>
<tr>
<td></td>
<td>4. 7.5 MVA, 132/33/11 kV Transformer</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>132/33/11 kV P.K Bari</td>
<td>1. 132 kV Silchar(PG) - P.K Bari D/C at Silchar(PG)</td>
<td>48.8 Hz, 500 msec</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. 33 kV Kanchanpur</td>
<td>3.1</td>
<td>2.1</td>
</tr>
<tr>
<td></td>
<td>3. 11 kV Darchawi</td>
<td>2.3</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>4. 11 kV Fatikroy</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>5. 11 kV kanchanbari</td>
<td>1.1</td>
<td>0.89</td>
</tr>
<tr>
<td>132/33/11 kV Dhalabil</td>
<td>1. 33 kV kalyanpur</td>
<td>2.6</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>2. 33 kV Tulashikar</td>
<td>2.6</td>
<td>2.3</td>
</tr>
<tr>
<td></td>
<td>3. 33 kV Ampura</td>
<td>1.09</td>
<td>1.35</td>
</tr>
</tbody>
</table>
NERPC vide letter dated 11.10.2019 has written to CMD, TSECL for procurement & installation of UFRs.

**TSECL may please intimate the latest status.**

**B.3 Reactivation of SPS -1**

The SPS-1 associated with tripping of generation of both Modules of Palatana CCGT (2 x 363.3 MW) is deactivated at present. The same needs to be activated to Avoid Violation of ATC of NER-ER Corridor.

Status as per previous meeting(s):
- SPS-1 is already turned ON at Silchar
- Scheme at Silchar shared with OTPC by NERTS
- OTPC to turn ON by Jan'20

**OTPC/NERTS may please intimate the status.**

**B.4 SPS for RHEP-Pare:**

As per discussions in previous OCC meetings the following SPS scheme was approved for RHEP-Pare:

<table>
<thead>
<tr>
<th>SPS Triggering condition</th>
<th>SPS Action when all three units at RHEP in service</th>
<th>SPS Action when all three units at RHEP in service and both units at Pare in service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tripping of any one 400/132 kV 360 MVA ICT at RHEP</td>
<td>One unit of RHEP to be tripped.</td>
<td>One unit of RHEP to be tripped and one unit of Pare to be tripped.</td>
</tr>
</tbody>
</table>

In 54th PCCM NEEPCO informed the forum regarding the SPS scheme for RHEP-Pare:
1. When all three units at RHEP in service, one unit of RHEP to be tripped with time delay, same will be confirmed by OEM.
2. When all three units at RHEP and both units at Pare in service, tripping of ICT one unit of RHEP and one unit of Pare with time delay, same will be confirmed by OEM.

**NEEPCO may please intimate the status.**

**Any other item:**

**Date and Venue of next meeting**
Condition: When one ICT at Pallatana trips

- Switch K1 at Pallatana shall be kept closed to keep the SPS in service.

- When ICT-1/ICT-2 at Pallatana trips, the trip relay NO contact 86-1/86-2 will make and extend the DC + to Carrier send relay CS of protection coupler as well as to the newly installed High Speed trip relay C through it’s own NC contact C-2.

- CS will send a code through PLCC to Surjamaninagar.

- Relay C will operate and it’s NC contact C-2 will open there by preventing continuous operation of CS.
• NO contact C-1 shall be wired to one binary input of one BCU at Pallatana to log the event with time stamping.

• At Surjamaninagar, the carrier receive contact of Pallatana protection coupler will be used to operate the carrier send relay of the protection coupler for South Comilla direction. Thus the code will be transferred to South Comilla.

• At South Comilla, the Carrier receive contact CR will make and this contact will be used to operate a newly installed High Speed Trip Relay D at South Comilla.

• NO contacts D-1 and D-2 of relay D shall be used to shed 60 MW of load at South Comilla.

• NO contact D-3 shall be wired to one binary input of one BCU at South Comilla to log the event with time stamping.
Switch K2 at Pallatana shall be kept closed to keep the SPS in service.

When Surjamaninagar line at Pallatana trips, its trip relay NO contact 86-a will make and extend the DC + to Carrier send relay CS of protection coupler as well as to the newly installed High Speed trip relay A through its own NC contact A-2.

CS will send a code through PLCC to Surjamaninagar. Relay A will operate and its NC contact A-2 will open thereby preventing continuous operation of CS.

NO contact A-1 shall be wired to one binary input of one BCU at Pallatana to log the event with time stamping.

Condition: When both 400/132kV ICTs trip at Pallatana OR

Condition: When Pallatana-Surjamaninagar trips
At Surjamaninagar, the carrier receive contact of Pallatana protection coupler CR will be made parallel with one NO contact 86-b of the trip relay for Pallatana Feeder and shall be used to operate a newly installed High Speed Trip Relay B at Surjamaninagar.

NO contacts B-1 and B-2 of relay B shall be used to trip South Comilla-1 and South Comilla-2 feeders.

NO contact B-3 shall be wired to one binary input of one BCU at Surjamaninagar to log the event with time stamping.
Switch K3 at Surjamaninagar shall be kept closed to keep the SPS in service.

When South Comilla-1/2 line at Surjamaninagar trips, it’s trip relay NO contact 86-1/86-2 will make and extend the DC + to Carrier send relay CS of protection coupler as well as to the newly installed High Speed trip relay E through it’s own NC contact E-2.

CS will send a code through PLCC/OPG to South Comilla. Relay E will operate and it’s NC contact E-2 will open there by preventing continuous operation of CS.
• NO contact E-1 shall be wired to one binary input of one BCU at Surjamaninagar to log the event with time stamping.

• At South Comilla, the carrier receive contact of Surjamaninagar protection coupler CR will be made parallel with one NO contact 86-3 and 86-4 of the trip relays for Surjamaninagar – 1 & 2 Feeder and shall be used to operate a newly installed High Speed Trip Relay F at South Comilla.

• NO contacts F-1 and F-2-2 of relay F shall be used to shed 30 MW of load at Comilla.

• NO contact F-3 shall be wired to one binary input of one BCU at South Comilla to log the event with time stamping.