Eastern Regional Power Committee, Kolkata

Minutes of Special Meeting on "Low voltage issue in West Bengal System" held at ERPC, Kolkata on 8th July 2019 at 11:00hrs

List of participants is enclosed at **Annexure-A.**

At the start of the meeting, it was informed that the issue of low voltage at 400kV Rajarhat, 400kV Subhashgram, 400kV Jeerat and 132kV Malda in West Bengal system was already highlighted in 158th OCC Meeting held on 27.06.2019. As the subject requires detailed discussion, it was decided that the issue of low voltage in West Bengal system would be discussed in a separate meeting with the concerned members from WBSETCL, WBPDCL, SLDC-WB, WBSEDCL, CESC, Powergrid ER-II, ERLDC and ERPC. In line with the 158th OCC decision, this special meeting has been called.

ERLDC informed that around 450 MW and 100 MVAR increase in demand was observed at 400kV Subhashgram, Jeerat and Rajarhat compared to last year. But sufficient network connectivity and reactive power resources were not envisaged to cater the enhanced demand. There is margin available within the capability of generating units of WBPDCL (i.e. Sagardhigi, Bakreswar and Kolaghat TPS units) and NTPC Farakka to generate more reactive power during low voltage condition. However the same is not being fully utilized. The above factors together with inadequate reactive compensation at load end within West Bengal system are causing the voltage at Rajarhat and Subhashgram to decrease below 360 kV during 14:00 hrs to 16:00 hrs. ERLDC added that HEL generating units are generating MVAR as per their capability curve.

HEL informed that sometimes they even reduce the active power generation to enhance the reactive power generation. HEL suggested that incentive to generating units for providing adequate reactive power support to the grid should be introduced to encourage the generators to participate actively in improving the voltage profile.

WBSETCL informed that the 400kV and 220kV lines were loaded beyond the SIL limit and contributing to the low voltage in West Bengal system. This needs to be addressed while planning the transmission system.

Powergrid informed that commissioning of 400kV Farakka-Rajarhat-Gokarna lines is getting delayed due to severe ROW issues and they are putting all the efforts to commission the lines within four months.

All the members agreed that increase in demand with insufficient network connectivity and reactive power support is the main reason for low voltage in West Bengal system.

After detailed discussion, it was decided to implement the following short term measures to improve the voltage profile:

- WBPDCL was advised to take necessary action to provide reactive power support by their units as per their capability curve. WBPDCL generating units (i.e. Sagardhigi, Bakreswar and

Kolaghat TPS units) were advised to maintain the generator terminal voltage at 1 p.u. so that sufficient reactive power generation can be provided during low voltage.

- SLDC, WB was advised to closely monitor the voltage of South Bengal substations and instruct the concerned generators to enhance reactive power generation up to their respective limits.
- WBPDCL was advised to submit unit wise active and reactive power generated w.r.t generator terminal voltage for the units at Sagardhigi, Bakreswar and Kolaghat TPS at intervals of 15 minutes along with date and time to SLDC, WB and ERLDC.
- It was decided to communicate the issue to Farakka, NTPC for providing MVAR during low voltage condition as per the capability curve.
- It was also decided to monitor the performance of the generators on daily basis and ERLDC was advised to present performance of the generators in 159th OCC Meeting scheduled to be held at ERPC, Kolkata on 19th July 2019.
- As already proposed in 158th OCC, SLDC, WB was advised to expedite implementation of Under-Voltage Load Shedding (UVLS) in WBSETCL system to avoid voltage instability problem and major failure in and around the metro city of Kolkata. ED, ERLDC requested SLDC WB to explore the scope of rotational shedding of non-priority loads supplied from Jeerat, Subhasgram and Rajarhat at least during 14:00 to 16:00 Hrs.

The following medium term/long term measures and action taken plans were discussed in the meeting:

- WBSETCL informed that they are installing 610 MVAR additional capacitor banks in distribution network to improve the voltage. The capacitor banks would be commissioned by December 2019
- WBSETCL added that a number of new sub-stations are coming up in South and North 24 Parganas. They are considering 10 MVAR capacitor bank against each 50 MVA transformer, if voltage is seen below desired level during planning.
- WBSETCL further informed that they have entrusted contract to PRDC for detail study of the perspective plan to identify any gaps in reactive power management.
- CESC informed that they are installing 50 MVAR capacitor at 132kV level at New Kasipur S/s. The capacitor would be commissioned by December 2019. CESC added that the reactive power demand at Subhashgram (PG) S/s is expected to reduce after commissioning of the capacitor.
- It was opined that after commissioning of 400kV Farakka-Rajarhat-Gokarna lines and 765 kV New Ranchi-Midnapur-Jeerat corridor, the voltage would be improved.
- It was informed that LILO of 400kV Subhashgram-HEL D/C line at 400kV New Laxmikantpur S/s of WBSETCL has been approved in 2nd ERSCT Meeting held on 5th July 2019. Minutes of the meeting are awaited.
- It was opined that after commissioning of the above LILO, the loading at Subhashgram(PG) S/s would decrease which in turn would improve the voltage.

- The proposal of installing Static Var Compensator (SVC) at low voltage prone area was discussed in 2nd ERSCT Meeting held on 5th July 2019. A preliminary study has been carried out by CTU considering the SVC at different 400kV buses. Minutes of the meeting are awaited.
- WBSETCL was advised to send all the future plans of reactive power compensation, transmission network, distribution network and load details in around Subhashgram, Rajarhat, Jeerat and Malda areas to CTU and CEA.

In view of significant seasonal variation in West Bengal system demand, there is a need for reviewing of voltage profile, GT and ICT taps and reactive power resources twice in a year (i.e. before Summer and Winter). Accordingly it was decided to conduct such review meetings in March and October in every year till the issues of low/high voltage in West Bengal system resolved.

Meeting ended with vote of thanks to the chair.

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Annexure -A

ERPC::KOLKATA

ATTENDANCE SHEET

SPECIAL MEETING ON LOW VOLTAGE ISSUE IN WEST BENGAL SYSTEM

VENUE: ERPC CONFERENCE ROOM,KOLKATA **TIME: 11:00 HRS** **DATE:08.07.2019 (MONDAY)**

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