

Minutes of the Meeting held on 2nd December 2019 at National Load Despatch Centre (NLDC) regarding automatic generation control (AGC) of power plants as per CERC Order 319/RC/2018 dated 28th August 2019

1. NLDC vide communication dated 17th September 2019 notified the minimum requirements for AGC connecting equipment at power plants based on the experience of the AGC Pilot Project. The same is uploaded on the NLDC, POSOCO website at <https://posoco.in/download/communication-to-power-plants-regarding-agc/?wpdmdl=24784>
2. In this regard, a meeting was organised at NLDC on 3rd October 2019 from 1100hrs to 1700hrs for discussion on the requirements for AGC to be implemented at generator ends by the generators and activities to be undertaken by them for speedy implementation of AGC. Minutes of that meeting is available on NLDC website at <https://posoco.in/download/minutes-of-meeting-with-agc-power-plants-03rd-october-2019/?wpdmdl=25216>
3. Following that second meeting with generators was organised at NLDC on 02nd December 2019. Representatives from NTPC, NHPC, NSPCL, CGPL, THDC, BBMB, NEEPCO, SJVNL and MPL participated in the meeting along with POSOCO. List of participants is attached as **Annexe-I**.
4. Director (System Operation), POSOCO and Executive Director, NLDC welcomed the participants and the importance of Automatic Generation Control (AGC) was briefly explained and informed that CERC Order 319/RC has to be implemented at the earliest.
5. All the power plant representatives have updated their status about the implementation of the AGC pilot project. Some queries were raised by the power plants, which were addressed suitably.

a) NTPC

Management approval is being processed centrally at Corporate level for all plants, is expected by second week of Dec'19 and the tendering process for AGC connecting equipment would be done by the end of Dec'19. Award is expected to be given by January 2020 end to the L1 bidder by the Corporate Center on behalf of all the power plants and execution and payment shall be done by individual power plant. Four

months' time would be given for implementation. RGPPL power plant is not considered under AGC for now because of non-availability of optical fibre communication path till the power plant.

b) NHPC

NHPC will float open tender for works at the 11 power plants. BHEL has given the budgetary offer and offer from other vendors is awaited. Supply, installation and commissioning are expected within 2-3 months after the order. Tender is expected to be floated by 15th Dec'19 for giving the award by Jan'20. Modifications required in DCS system would also be done simultaneously by the respective OEMs. NLDC suggested the laying of cable from switchyard to power house shall be done in parallel to expedite the work excluding this activity from the scope of work for which tender is being floated.

c) CGPL

AGC equipment at CGPL is being contemplated to be procured from prospective vendors. Soft communication with the digital control system is being thought to be used through field bus module to avoid hard wiring. Suitable firewalls would be used for cyber security. On enquiry of usage of layer 2 or layer 3 switch, NLDC informed that layer 3 switch is preferred. NLDC agreed that the same is acceptable as long as all the signals are being transferred to/from NLDC ensuring cyber security. CGPL assured that supply and installation of AGC hardware and software at power plant will be completed before February 2020. It was also mentioned that presently only one link is available. The other link is faulty and needs to be taken up with POWERGRID.

d) THDC

Tehri power plant is planning to place the order with the control system manufacturer ABB by the end of Dec'19. Koteswar power plant has finalised the specifications to be implemented by BHEL. NLDC requested THDC to expedite the implementation of the project to meet the time lines given by CERC and avoid delay on account of contract level hurdles.

e) BBMB

BBMB informed that the present mechanical hydraulic governors at Bhakra right bank and left bank are scheduled to be replaced by digital governors by 2023-24. This may

take some time. Pong and Dehar have digital control system for governors, hence are being considered under AGC. BBMB progress is still at a preliminary stage on AGC. Relevant material is provided to BBMB and NLDC requested BBMB to expedite the work on AGC.

f) NEEPCO

For AGBPP Kathalguri, budgetary offer to be finalised by the end of this month. Since Kathalguri is a gas-based plant, GT would be provided the set point, for which ST would also respond. The GT-ST relationship would be factored by the plant operator while distributing the Delta P amongst the online gas turbines. For Kathalguri tender will be floated by end of Dec'19. For hydro stations of NEEPCO, DPR has been submitted for renovation & modernization work. NLDC requested NEEPCO to send a communication regarding implementation of AGC in Hydro stations would be done after R&M works completion.

g) Sasan

Sasan has communicated that they have received the technical offer from various vendors and that further proposal preparation is under progress.

h) SJVNL

For Naptha Jhakri, contract for procurement would be awarded by the end of this month. Rampur expressed the view that being a tandem hydro, their power plant is not suited for AGC as the output power of Rampur is dependent on Jhakri outflow. So, Rampur would not be considered under AGC. Deviation of Rampur from NRLDC schedule because of Jhakri generating under AGC would be suitably factored in the accounts that would be sent to NRPC.

i) NSPCL

NSPCL is awarding the contract together with NTPC using the same specifications and vendor.

j) MPL

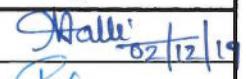
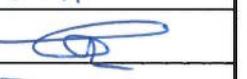
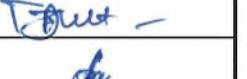
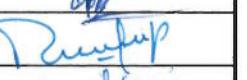
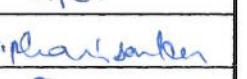
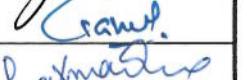
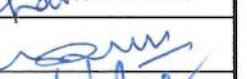
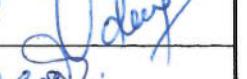
MPL placed the order on Siemens on 21st Nov 2019. Likely completion of the project is expected by Feb 2019. NLDC suggested that the signal list given by NLDC is ensured by making available the points in digital control system.

k) NLC

NLC has sent a communication to NLDC informing that AGC project at all their plants will be executed through express LTE. Single PO would be awarded to all the plants under NLC. Detailed discussions are being conducted with prospective vendors.

6. NLDC informed that they are parallelly taking up the aspect of communication between the nearest wide band node of the power plant to NLDC with Central Transmission Utility (CTU). Minutes of the meeting held in this regard with CTU on 27th September 2019 are available at <https://posoco.in/download/minutes-of-the-meeting-with-ctu-regarding-agc-communication/?wpdmdl=25491>
7. Based on the discussion with CTU/POWERGRID, NLDC informed the power plants that two ethernet ports would be provided at the nearest POWERGRID wide band node for the power plant. If spare ports are not available at the POWERGRID switchyard, then power plants have to make a provision for the interfacing and terminal equipment in consultation with POWERGRID and RLDC/NLDC.
8. NLDC also advised the powerplants that wherever spare ports are available and communication till NLDC is made ready by CTU, power plants may plan for testing the communication link in coordination with NLDC as early as possible.
9. All the power plants shall email the contacts of the nodal officers (Main and Backup) designated for establishing communication and also overall coordination to NLDC to agcnldc@posoco.in.
10. Director (System Operation), NLDC urged all the power plants for speedy completion of the works as per the CERC Order 319/RC/2018 notwithstanding the contractual delays.
11. ED, NLDC and SGM, NLDC thanked the participants for their active participation and requested power plants to freely communicate with RLDCs/NLDC in case of any queries. Next meeting is tentatively scheduled on 20th January 2020 at NLDC.

Meeting on Automatic Generation Control (2nd December-2019)

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