

## Additional Agenda by ERLDC

### **1. Submission of Declared Capacity of Tala, Chukha and Kurichu hydro stations by Bhutan, through WBES software**

Hydro Generating stations of Bhutan viz. Tala HEP(6\*170 MW), Chukha HEP(4x84 MW) and KurichuHEP (4x15 MW) are being scheduled by ERLDC. Scheduling philosophy adopted for these generators are like ISGS generating station and scheduling process for submission of different parameters such as DC, revised DC, Requisition of beneficiaries are done as per IEGC chapter – 6 scheduling procedure. All these hydro generating station have different beneficiaries in Eastern and Northern region.

User log-in credential and password of ERLDC, WBES (Web Base Scheduling software) have been shared with NLDC, Bhutan for submission of Tala, Chukha and Kurichu declared capacity (DC) for day ahead and also to submit revised DC of its generators during real time as per change in generation pattern. Training on handling ERLDC WBES (Web Base Scheduling software) for submission of DC, change in DC of individual generator had also been demonstrated to representatives of NLDC Bhutan.

As per the recent practice, NLDC, Bhutan is sending 15 minute DC (injection schedule at Indian boundary) in MW for Tala, Chukha and Kurichu through mail for the day ahead (D day) by 10:00 Hrs of D-1 day and ERLDC filled this MW DC in each generator Declaration page for implementation in WBES.

Following are some observations/discrepancies found during real time operation:-

1. Bhutan, NLDC is not submitting block wise DC of the individual generators (Tala, Chukha & Kurichu) in ERLDC WBES.
2. NLDC, Bhutan is not revising its Individual generators DC during real time as per individual generators change in generation pattern. To avoid deviation of real time generation with respect to declared generation of respective Bhutan generators, ERLDC control room executive suo-motto changes Bhutan generators DC as per its actual generation during real time.

In view of above, NLDC, Bhutan is requested to revise DC of individual generators regularly keeping in view the change in actual generation and submit the same in ERLDC WBES during real time.

NLDC, Bhutan may comment.

### **2. Updated Operating Procedure of Eastern Region-2019**

The Operating Procedure of Eastern Regional power system, developed and maintained by ERLDC in accordance with section 5.1(f) of the IEGC, has been updated taking into consideration the developments that have taken place in the regional power system during the last one year including the amendments incorporated in the IEGC so far by Hon'ble CERC. Draft Operating procedure was circulated to the concerned for their review and suggestion via email dated 10<sup>th</sup> July 2019.

Based on comments received and other development operating procedure is finalized and same is available at ERLDC website [www.erlhc.in](http://www.erlhc.in)

Member kindly note

### **3. Operation of All generating units in automatic Voltage regulator mode:**

During disturbance at Dikchu on 30.06.19 it was observed that Teesta III units are operating their AVR in "Reactive power control mode" which led to serious voltage issue at Teesta III end.

But as per IEEE standards reactive power regulation mode of operation for grid connected generators are not allowed. Extract from the "IEEE Std 421.5™-2016" is quoted below:

***"On the other hand, large generators connected to bulk power systems are usually required to operate on automatic voltage control and the use of these power factor or reactive power controllers is forbidden, either by reliability standards (e.g., North American Electric Reliability Corporation [B45]) or grid interconnection agreements (e.g. Independent Electricity System Operator [B30])."***

In view of above, all the generating units may confirm that their units are operating "Automatic voltage regulation" mode rather than "reactive power control" mode or "power factor control mode" through mail.

### **4. Bypassing arrangement of 400 kV Kishanganj S/S due to recent flood in North Bihar area:**

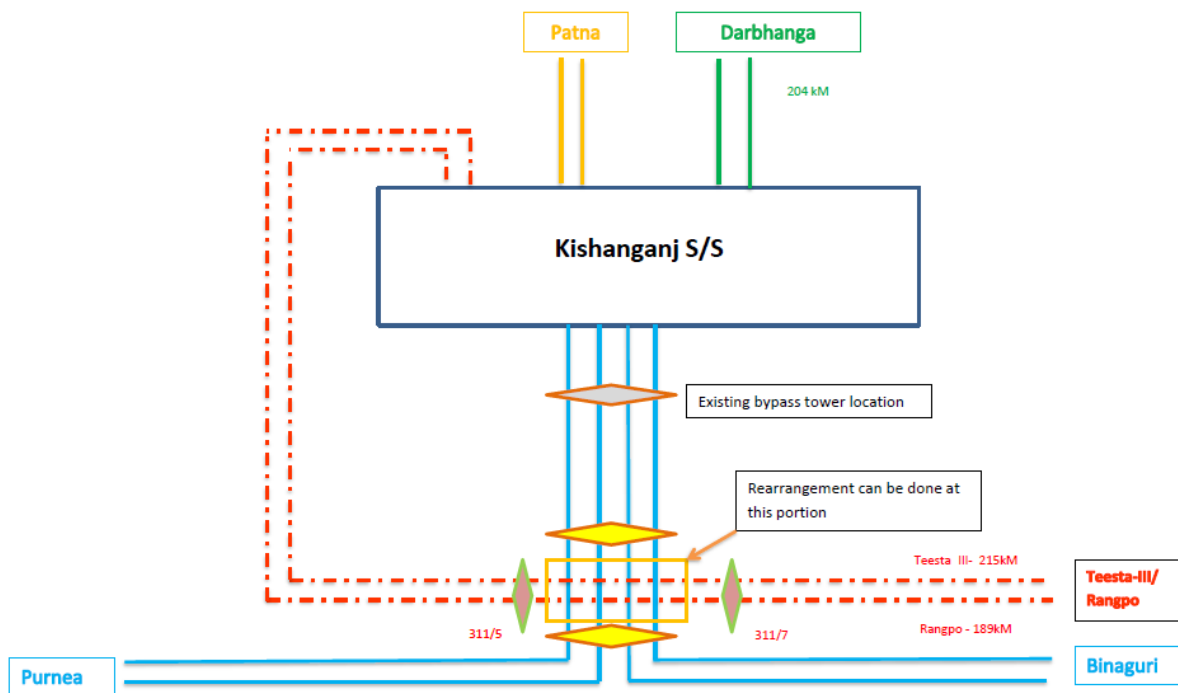
Due to heavy rain in North Bengal and North Bihar for last 2 weeks, flood like situation has arisen in different districts like Kishanganj, East Champaran, Madhubani, Sitamari, Supaul, Araria of Bihar and North Dinajpur of W. Bengal. On 13/07/19 it was gathered that water had accumulated in 400/220kV Kishanganj GIS substation & its adjacent areas had risen to alarming levels.

Earlier during 2017, Kishanganj(PG) S/Stn had to be completely shut down for a couple of days, on account of water-logging. To avoid such type of situation in future, after discussion in different OCC meetings, temporary arrangement was made to keep the major outgoing/incoming lines in service by making bypass arrangement outside of the Kishanganj S/s. Accordingly arrangement for reconfiguring 400kV Binaguri-Kishanganj D/C & 400 KV Purnea-Kishanganj D/C at Kishanganj S/S as 400 kV Binaguri –Purnea – III & IV was planned & commissioned by cross jumpering above two lines at the LILO portion during March-2018. Subsequently, 400kV Teesta\_III-Kishanganj & 400 KV Rangpo-Kishanganj were commissioned on 04/01/2019 & 11/02/2019 respectively and with their commissioning, restriction on generation by the hydro station in Sikkim was withdrawn. At present,

2300MW of Sikkim hydro generation is being evacuated through Kishanganj and Binaguri S/S. Bypassing arrangement of these lines were not envisaged during that period due to non-commissioning of these lines during that period.

In the event of recurrence of a similar emergency flood like situation, for facilitating evacuation of bulk hydro generation of Sikkim it is necessary to explore some methodology to interconnect 400kV Teesta – III – Kishanganj&Rangpo –Kishanganj lines, with other lines of adjacent S/Stns . A new re-configuration scheme needs to be explored instead of the existing Kisanganj S/S bypass scheme In the event of recurrence of a similar emergency.

For finalizing the above scheme an emergency meeting was held at ERLDC with concerned Transmission licenses on 16-07-2019. Transmission licensees viz. TPTL, ATL, ER-II (PGCIL) are present in the meeting and ER-I (PGCIL), NLDC participated the meeting through VC.



**Members may please discuss.**