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**EASTERN REGIONAL POWER COMMITTEE**  
**14, GOLF CLUB ROAD, TOLLYGUNGE,**  
**KOLKATA-700033**

No. ERPC/ COM-I/GEN/2011/5324-55

Date: 15.11.2011

To: As per list

Subject- Identification of non-ISTS lines of Eastern Region carrying more than  
50% inter state power-Reg

Sir,

A special Commercial Sub-Committee Meeting was held on 10.10.2011 at ERPC Kolkata to deliberate the issue of “Identification of non-ISTS lines of Eastern Region carrying more than 50% inter state power”.

As per the decision taken at the meeting a detailed note was sent to DGM, NLDC and Coordinator, Implementation Committee to seek clarifications and to convey the opinion of the eastern regional constituents. A copy of the same is being forwarded to you for your information and record.

Encl-as above

Sd/-

**(Subhro Paul)**

**E.E. (Commercial)**

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**Minutes of Special Commercial Sub-Committee Meeting held to discuss the issues regarding identification of non-ISTS lines of Eastern Region held on 10.10.2011 at ERPC Conference Hall, Kolkata**

Member Secretary I/C Shri A.K. Bandyopadhyaya welcomed the participants and informed the house that the Issue of identification of non-ISTS lines for Eastern Region was deliberated at length in the 19th TCC meeting and 19th ERPC meeting held on 23rd September'2011 and 24th September'2011 respectively. During deliberation, it had emerged that a number of issues needed to be resolved first before the finalizing the identification. Further, it was felt that a uniform approach should be adopted throughout the country to avoid inconsistency in this regard. To deliberate further on this, ERPC had desired that a Special Commercial Sub-Committee of the Eastern Region be held on 10.10.2011 at ERPC Kolkata to discuss the issue in detail and arrive at consensus.

- i) S.E. (Commercial), ERPC informed that for inter-state transmission of power, there are CTU owned ISTS lines, lines of ISTS licensees as well as non-CTU or state owned lines. The non-CTU lines were constructed much before the inception of IE Act 2003 and formation of Powergrid. These lines were constructed up to geographical border of the state by the concerned state and are owned by the concerned state. For example, 400 kV Kolaghat- Baripada line was constructed by West Bengal from Kolaghat upto West Bengal border by Govt. of West Bengal and thereafter by Govt. of Orissa. These lines are used also to transfer power from one state to another. The treatment of these lines as ISTS or non-ISTS and sharing of the cost of such lines needs to be clarified.

Member Secretary I/C informed that whereas, the present CERC (Sharing of Inter State Transmission Charges & Losses) Regulation, 2010 defines YTC as under-

Quote

**Yearly Transmission Charge (YTC)** means the Annual Transmission Charges for existing lines determined by the Commission in accordance with the Terms and Conditions of Tariff Regulations or adopted in the case of tariff based competitive bidding in accordance with the Transmission License Regulations as specified by the Commission and as in force from time to time and for new lines based on benchmarked capital costs.

Unquote

The principal regulation on Sharing of Inter State Transmission Charges and Losses has not defined the word "Commission". But CERC (Unscheduled Interchange charges and related matters) Regulations, 2009 defines:

Quote

'**Commission**' means the Central Electricity Regulatory Commission referred to in sub-section (1) of section 76 of the Act.

Unquote

YTC for lines like Kolaghat-Baripada cited above is not determined by the commission in accordance with the Terms & Conditions of Tariff Regulations & accordingly on the above two accounts these type of non-CTU or state owned lines may not get place in calculation of POC.

On the other hand, the principal regulation on Sharing of Inter State Transmission Charges and Losses has not defined ISTS. But IEGC defines ISTS as:

Quote

- i) Any system for the conveyance of electricity by means of a main transmission line from the territory of one State to another State
- ii) The conveyance of electricity across the territory of an intervening State as well as conveyance within the State which is incidental to such inter-state transmission of energy
- (iii) The transmission of electricity within the territory of State on a system built, owned, operated, maintained or controlled by CTU

Unquote

In addition Para 2.1.2 (g) of Annexure to the Sharing Regulations provides for the following under the head “Network Data”-

Quote

Overall charges to be allocated among nodes shall be computed by adopting the YTC of each of the lines of the ISTS licensees, and any other non-ISTS line that has been certified by the respective RPCs as being used for interstate transmission. The YTC for such lines shall be based on the YTC of the transmission licensee / SEB as approved by the Appropriate Commission.

Unquote

Members agreed that CTU owned lines as well as non-CTU or state owned lines are all falling within the purview of the above (along with the definition of ISTS as per IEGC, which is sufficiently broad so as to include nearly all state lines) and as such on this account non-CTU or state-owned lines should also be considered as ISTS and accordingly should get included in POC regime. Because, in an interconnected grid, the flows in all lines are dynamically dependent on the changing load generation scenario. So, even if a line is not carrying inter control area power in one scenario, it may do so in another scenario.

Also, if non-CTU or state-owned lines on fulfilling the ISTS definition of IEGC and para 2.1.2 (g) of the principal regulations are automatically falling under POC regime, then the present exercise may not be needed and NLDC shall automatically consider these lines for computation of POC charges for a period.

- ii) S.E.(Commercial), ERPC impressed that there is no definition for non-ISTS lines as such. Extrapolating the definition of ISTS lines as given in IEGC, can we say that non-ISTS lines are the lines which are fully embedded in a control area and not carrying inter-control area power? That is, carrying only intra-control area power. If it is so, then through the present exercise are these lines only required to be identified?

Members agreed that based on the above discussions lines may be categorized as,

1. CTU owned ISTS lines and lines of ISTS licensees
2. Non-CTU or state owned ISTS
3. Non-CTU state non-ISTS lines

and decided that there is no clarity regarding which lines are to be identified.

iii) The matter of sharing of charges based on LTA and its effect on the sharing of charges of CTU/ISTS licensee and state-state lines was thoroughly discussed. It was pointed out in the meeting that as per the sharing regulations Approved injection and Approved Withdrawal means:

**Quote**

2.1.(c)Approved Injection means the injection in MW vetted by Implementing Agency (IA) for the Designated ISTS customer for each representative block of months, peak and other than peak scenarios at the ex-bus of the generator or any other injection point of the designated ISTS customer into the ISTS, and determined based on the generation data submitted by the designated ISTS customers incorporating total injection into the grid, considering the long term and medium term contracts.

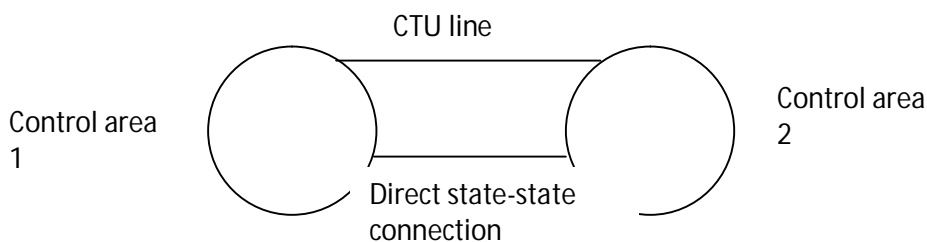
**Unquote**

**Quote**

2.1.(f)Approved withdrawal means the simultaneous withdrawal in MW vetted by Implementing Agency for any Designated ISTS customer in a control area aggregated from all nodes of ISTS to which any Designated Customer is connected for each representative block of months, peak and other than peak scenarios at the interface point with ISTS, and where the Approved Withdrawal shall be based on the demand data submitted by the Designated ISTS Customers incorporating long term and medium term transactions.

**Unquote**

The long term and medium term access is deemed to take place at present through the ISTS (CTU and lines of ISTS licensees only) network. However, part of such flows may take place through CTU-owned ISTS/lines of ISTS licensees and part through state-state ISTS lines. For example see the diagram below:



Now, if a DIC of control area 1 has made a LTA for 200 MW (say) to a DIC of control area 2 and 150 MW flows through the CTU network and 50 MW through the direct state-state connection then as per the sharing regulations the DIC of control area 1 shall be liable to share the charges of the CTU line for 200

MW utilization though the state-state line is carrying 50 MW of that power. Same is the case for the DIC of control area 2.

Actually, the DIC of control area 1 should share charges of CTU line only for 150 MW. Or, alternatively, the cost of the direct state-state line must also be shared through PoC methodology.

- iv) S.E.(Commercial), ERPC, informed that in line with definition of IEGC in respect of ISTS line a peculiar condition arises in case of Bihar. Bihar has almost no generation of its own. Therefore all its internal networks are utilized for transfer of Inter-control area power coming from different sources into Bihar. Therefore all the transmission lines of Bihar qualify to be pooled for calculating POC Charges.
  
- v) Members agreed that there is no clarity regarding inter-state power. It is not defined in IE Act,2003 or any regulation. A logical interpretation of the definition of ISTS provided in IEGC leads to the conclusion that any power flowing from one control area to another control area (inter-control area) can be called inter-state power. This issue needs to be clarified.
  
- vi) Members expressed their concern that most of the state owned lines are of 220 KV and lower voltage levels, whereas, the truncated network on which load flow for determination of PoC is to be done is of 400 KV voltage level. Thus, beneficiaries who utilize these state-owned lines will not get identified. In that case, the cost of these lines will simply increase the overall YTC and be distributed over the country without any differentiation between users and non-users. Thus, the user pays principle will be violated.

To rectify this anomaly, provision should be made to conduct load flow studies at lower voltage levels (220 KV and below) for identification and quantification of utilization of such lines by the 400 KV nodes. Then, the cost of these lines should be apportioned among those 400 KV nodes as per usage.

- vii) ERLDC informed that the utilization of a non- CTU/state owned ISTS line may be by a number of generators as well as by a number of loads. Through tracing techniques, the extent of utilization of such lines by loads and generators can be found. The problem that requires a decision is how the utilization of generators and loads can be combined to get a single of utilization factor. For example, a line might be used by 70% of the generators which are located outside the control area and the power flowing through the lines are utilized to the extent of 60% by the loads located inside the control area.

Members expressed that this issue requires clarification and any method adopted requires sufficient justification since this will determine the final percentage of line utilization for carrying inter state power.

Members expressed concern that the tracing method is based on a proportional distribution of electrical power between incoming and outgoing lines, whereas, the flow of electricity depends on laws of physics. It is well documented that the method (tracing) can neither be proved nor disproved. Members emphasized that the whole point is that since we are attempting to find out actual usage the proportional distribution or any sort of averaging distorts the very base of our calculations.

viii) Representatives from GRIDCO and WBSEDCL informed that flow through a line varies at different hours ( e.g. Peak and Off-peak), at different months (seasonality effect), different days of the week (working day and week end) etc. Taking only one set of data (annual average basis as directed by the commission vide order dated 04.04.2011) shall eat away the very essence of variation in flow and may not be representative figure at all.

Also, they stressed that while the PoC for sharing of costs for CTU lines is to be based on projected seasonal, peak-off peak demand/generation, the pooling of costs of non CTU/State owned ISTS is proposed to be based on annual average basis. This differing treatment of CTU-ISTS and non CTU-ISTS lines cannot be justified.

Members agreed that the data considered for load flows should be more representative of actual conditions rather than average values.

ix) S.E. (Commercial), ERPC opined that while making the system study, if only the long-term and medium term transactions are taken, then the real picture would not emerge as there are considerable short term transactions that are also taking place. Now STOAs are quite volatile and historical figures may not be quite reliable for future projection. This issue needs to be resolved.

Although, it may be argued that average annual values of load/generation is inclusive of short term transactions, being extremely volatile past data will not be correct. Again, commissioning of new units in the middle of the year (which will only be reflected in the annual average data to be considered for next year) may dramatically change flows in the state lines which may result in some lines which were carrying more than 50% inter state power earlier to carry less than 50 % and vice versa. Due to this the whole point of carrying out the exercise of identification of non-ISTS lines carrying inter state power may be brought to naught.

x) Representative from GRIDCO and WBSEDCL expressed that the contention that only lines carrying more than 50 % inter state power be considered for pooling of costs appears arbitrary. A line carrying 49% of such power also has sufficient claim to be considered as carrying substantial amount of inter state power.

But, since there is no clarity on what is interstate power (It is not defined in IE Act, 2003 or any regulation). Should it be taken as any power flowing from any control area to another control area can be called inter-state power or only ISGS and IPP long-term and medium term power? This needs to be clarified.

Members unanimously agreed that the costs of lines should be pooled based on the actual percentage of inter state power being carried by the line rather than an arbitrary fixed cut off of 50 %. This will also be more fairly reflective of the provisions of IE Act, 2003.

- xi) All the members present unanimously agreed that Software for system study to be used by all the regions for identification of non-ISTS lines must be identical. Different models of software are likely to give different results. It was suggested that the software being used by the Implementation Agency may be used by all.
  
- xii) All Members present expressed the apprehension that the exercise of identification of non-ISTS line will create a rush for states all over the country in trying to include as many state lines as possible. This along with the slabbing of rates may increase the drawl/injection PoC of the ER states substantially.
  
- xiii) Members expressed their apprehension that the whole exercise may generate lot of animosity /mistrust and disputes among the states which may not be good for a healthy power sector.
  
- xiv) WBSEDCL representative informed that the percentage of inter state power should be calculated based on the total capacity of the line (its SIL) rather than the actual flows. For example a line of 200 MW SIL may carry power only upto 100MW. Out of this if 51MW is inter state power then the percentage inter state power carried by the line should be 25.5% instead of 51%. Using the proposal of pooling of proportional costs only 25.5% of the costs shall be pooled.
  
- xv) Members unanimously expressed that charges for state-state lines which were being shared by more than one states before the commencement of the sharing regulations (15.06.2011) is satisfactory and may be continued. The cost of such lines need not be pooled in accordance with the new sharing regulations.
  
- xvi) Members expressed that for state lines the present system of collection of transmission charges should be continued.

xvii) Further, the Members unanimously agreed that based on the above discussions Implementing Agency may consider the following issues related to identification process for clarification before the exercise of *identification of non-ISTS lines carrying more than 50% inter state power* is carried out for Eastern Region:

a) Only **CTU lines, Deemed ISTS lines as approved by the commission and lines of ISTS licensees having valid license from the Commission** may be considered for the purpose of the sharing regulations. **The non-ISTS lines whose YTC were shared by the constituents before 15.06.2010 also should not be considered.** There should not be any further addition to this list as this would unnecessarily complicate the process and may create heart burning in some regions (those states not being able to push through more lines).

b) Before the exercise of identification *non-ISTS* lines is taken up Implementing Agency may give a clear cut guidance on the following issues:

1. Relevant provisions on Sharing of transmission charges provided in CERC (Terms and Conditions of Tariff), 2009 need to be changed.
2. Definition of inter state power
3. Definition of non-ISTS lines
4. Representative load generation balance scenario to capture the true picture
5. Adoption of common software and methodology for calculation
6. Common methodology for achieving at a single percentage of utilization after tracing(if applied).
7. Proper accounting of short term transactions

c) Also, keeping in view the above complex issues that need to be settled first, the date of submission of list of non-ISTS lines may be extended by two months at the least.

It was decided that ERPC Secretariat would convey the details of discussions and opinion of the Commercial sub-Committee to the Implementing Agency for consideration/clarification.

