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To

The Secretary,
Central Electricity Regulatory Commission, Third Floor,
Chandralok Building, 36, Janpath, New Delhi - 110001
Email: secy@cercind.gov.in.

Sub : Additional Views of GRIDCO on Draft CERC (Transmission Planning and other related matters) Regulations 2017.

Ref : This office letter no. Sr.GM-(PP)-07/2017/4008(6) dt 28.06.2017

Sir,

Inviting reference to the above, it is to submit that the views of GRIDCO on Draft CERC (Transmission Planning and other related matters) Regulations 2017 has been submitted vide referred letter dated 28.06.2017. However in continuation to that, some additional observations are enclosed here with for necessary consideration of Hon'ble CERC, while taking up the finalisation of aforesaid Transmission Planning Regulations 2017.

This is for your information and necessary action please.

Yours faithfully,

Encl: Additional Views of GRIDCO in 18 pages

Director (Commercial)

C.C to:-

1. Director (F & CA), GRIDCO, Bhubaneswar for information.
2. CGM (RT&C), OPTCL, Bhubaneswar for information.
3. CGM (Construction), OPTCL, Bhubaneswar for information.
4. Sr.GM(Planning), OPTCL, Bhubaneswar for information.
5. E.A. to CMD, GRIDCO for kind appraisal of CMD.

Views of GRIDCO on CERC Draft (Transmission Planning and other related matters) Regulations 2017

CERC has notified CERC Draft (Transmission Planning and other related matters) Regulations, on 26th April 2017 & has sought views on it from stake holders. Tr planning is being one of the measure & important aspect of power sector as it is the efficacy of this Transmission planning which will shape the future of power sector in many profound ways. GRIDCO here by offers its considered views on the aforesaid draft regulations :

PREAMBLE:

Existing provision

xxx Since, the transmission charges for inter-State Transmission System (ISTS) to be executed on the basis of transmission planning have to be recovered from the users in accordance the Sharing Regulations of this Commission, a need has been felt to specify regulations on transmission planning to ensure that planning is carried out in consultation with all concerned agencies & stakeholders in *a transparent manner*. The Regulations on Transmission Planning shall cover the governance aspects of transmission planning. Xxxx

Gridco's view :

In Gridco's point of view the following should be inserted in the preamble:
Since the proposed CERC transmission planning regulation is going to cover the governance aspects of transmission planning, rather than only including the transparency as the single aimed objective of the Tr planning regulation,

the efficiency & effectiveness of the planning process should also be equally considered as general goal in the preamble.

{Effectiveness : to the extent the planning is achieving the benefits they are suppose to achieve .

Efficiency : extent to which the proposed planning is meeting the acceptable social costs (i.e. benefits > cost)

Evaluation of these efficiency & effectiveness should be on periodic basis (periodicity may be biannual or yearly)

Scope of Regulations:

Existing provision :

As per the existing provision of draft regulation "these Regulations shall be applicable to CEA, CTU, Inter State Transmission Licensees, SEBs/STUs, SLDC, RLDCs, NLDC, RPCs, NPC, DICs and other utilities involved in the transmission planning process".

Gridco's view :

As per the Monthly progress Report of Transmission Projects awarded through Tariff Based Competitive Bidding (TBCB) Route As on 31.05.2017 total 37 no of projects have been awarded through TBCB. Since a major chunk of upcoming transmission system is being developed in TBCB route , the Transmission service provider (other than CTU) should also come under the purview of this Transmission regulations.

Again as per Regulation 13 of this Transmission planning regulations " DISCOMs / Bulk Consumers/ Transmission Licensees shall be responsible for providing data as per format specified by Central and Regional Study Committees". That means other transmission licensees are also well within

the scope of this Transmission planning regulations. But the clause 2.2 of the draft regulation does not specifically include Transmission Licensees within the scope.

In view of the above, it is suggested that the scope of Regulations may be accordingly be amended to include participation of other transmission licensees as well.

3.0 Definitions

Existing provision :

3.2. Central Study Committee: A standing Committee constituted by CEA comprising of members from CEA in the lead role, CTU, Member Secretary of State Power Commitees, NLDC, RPCs as its members and shall be responsible for compiling data and studies received from Regional study Committees and conduct studies at National level for discussion in Standing Committee.Till such time a State Power Committee is formed, STUs shall be member of this Committee.

3.4. Regional Study Committee: A standing Commi ttee constituted under RPC comprising of members from CEA, STUs in the region, RLDC, SLDCs, DISCOMs in the region, RPC, as its members and CTU as coordinator. One of the STUs on rotational basis shall take the lead role among STUs and represent in the Central Study Committee and shall be responsible for collecting data (as defined in Detailed Procedure) and conducting studies at regional level for recommending to Central Study Committee.

Gridco's view :

(i) Constitution of CSC & RSC :

As suggested above in scope of the regulation, to ensure participation of TSP other than CTU, necessary amendment may be made in the constitution, either in the Central Study Committee (CSC) level or in the Regional Study Committee(RSC) level.

(ii) Constitution of State Power committee:

Power being a concurrent subject, for constitution of State Power committee necessary direction/ views of State Govt would be mandatory in this regard. Hence the legal response of respective State Govt is binding towards establishment of State Power committee & necessary framework/governance mechanism need to be put in place for obtaining direction from State Govt towards such direction of CERC.

7. Role and Responsibility of CTU

Existing provision :

7.1.(b) Ensuring development of an efficient, co-ordinated and economical system of ISTS for smooth flow of electricity from generating stations to the load centres.

Gridco's view :

The parameters for measuring the degree of efficiency & economy of the ISTS need to be objectively specified.

Existing provision :

7.2.(d) To carry out studies for evolving transmission system by the Central Study Committee and share the base case file with Regional Study Committee.

Gridco's view :

The base case file & the study result for evolving Transmission system should also be shared with state Power committee for effective decision making at

state level & to reinforce appropriate performance measures towards such proposed changes in Inter state transmission as per the requirement of state for smooth flow of electricity as part of Coordinated planning.

8. Role and Responsibility of STU:

Existing provision :

8.2.(d) To furnish drawal GNA to CTU from time to time.

Gridco's view :

As long as regulation on GNA has not yet been finalised STU should not be endorse with such responsibilities.

9. Role of National Load Despatch Centre:

Existing provision :

(1) National Load Despatch Centre (NLDC) shall be responsible for providing periodic operational statistics and feedback to CTU and CEA for factoring in planning of ISTS and associated intra-state transmission system.

(2) To refer the operational issues to the Central Study Committee.

Gridco's view :

operational statistics & the operational issues which are referred to the Central Study Committee should also be uploaded in the NLDC website to maintain transparency.

12. Role of Generators:

Existing provision :

12.(1) Generating station connected/likely to be connected to ISTS or intra-state transmission system at 132 kV and above shall be responsible for providing technical data as per the format specified by Central and Regional Study Committees. At the planning stage, the Generators seeking

connectivity shall submit the requisite details including injection LTA/GNA granted by CTU for consideration in simulation studies.

Gridco's view :

There is a shift in energy market economics due to proliferation of RE sources. Penetration of zero-marginal-cost resources, such as wind and solar, has increased significantly and will continue to increase in future. Hence it is suggested that instead of limiting the technical data provision of Generating stations upto 132 kV level , it should be considered upto 33 kV level.

14. Role of the Standing Committee(s) for Power System Planning (SCPSP):

Existing provision :

The SCPSP constituted by CEA firms up and reviews the transmission plans based on the proposals received from CTU, STUs, constraints in the system and growth in power system.

Gridco's view :

The transmission plans proposals are to be finalised at the CSC & RSC level . so the SCPSP should scrutiny the proposals received from CSC & RSC after prudent cost benefit analysis of the proposed scheme .

Accordingly the regulation para should be amended as below:

The SCPSP constituted by CEA firms up and reviews the transmission plans based on the proposals received from CSC & RSC, constraints in the system and growth in power system after prudent cost benefit analysis of the proposed scheme .

More over out of total 4 nos. of standing committee which have been proposed / considered in this draft regulation as mentioned below,

{ i) Central Study Committee ,

ii) Regional Study Committee ,

iii) Standing committee for Power System Planning (SCPSP)

iv) Standing Committee for Transmission Planning (SCTP). }

although the role of CSC & RSC have been stated but their exist ambiguity in role & responsibility between *Standing committee for Power System Planning* & *Standing Committee for Transmission Planning.*

Hence the purview , work jurisdiction / role & responsibility of this 2 Standing committees SCPSP & SCTP need to be clearly enumerated.

15. Role of Central Study Committee:

Gridco's view :

For better clarity the work flow & the detail role & responsibilities of various parties involved in the Transmission planning should be properly specified in a frame work of flow chart diagram of the transmission planning process , role & responsibilities including the periodicity of assigned job.

16. Role of Regional Study Committee:

Existing provision :

(a) To coordinate with the STUs in the region in preparation of their data base and system study files in each region. STUs to finalise drawal LTA/GNA data and submit to Central study Committee.

(b) To prepare transmission planning alternatives and refer the same to the Central Study Committee.

(c) CTU will provide the data and alternatives along with recommended alternative concluded in Regional Study Committee to Central Study Committee.

(d) Monitor implementation of matching intra-state system periodically with period to be specified by CEA in the separate procedure to be notified under these Regulations.

Gridco's view :

Apart from the above ,the part of explanatory memorandum as mentioned below (in para 3.1.1 of explanatory memorandum) wherein the details of RSC along with its functional role, constituting members have been articulated elaborately, should be made part of regulation 16 to bring more clarity.

3.1.1(a) The Regional Study Committee shall be constituted in each region comprising of members from CEA, all STUs, DISCOMs, SLDCs, RLDC and RPC in the region. The Regional Study Committee shall be headed by CEA and CTU shall be coordinator. Further, one STU of the region shall take the lead role among STUs on rotational basis and represent the Regional Study Committee in the Central Study Committee and shall also be responsible for collecting data, as defined in the Detailed Procedure to be formulated by CTU and conducting studies at regional level for recommending to the Central Study Committee.

(b) The data to be compiled by Regional study Committee may consist of anticipated load and generation addition within the state, existing / planned transmission network within the state, status of planned transmission system within the State.

Further RSC should not only monitor the implementation of matching downstream project , it should also monitor the upstream coordination when the transmission system is associated with generation evacuation. In case of mismatch RSC should report the same to the standing committee for taking further necessary action / decision so that optimum utilisation of inter-state system can be done.

18. Transparency in the planning process:

Existing provision

18.1. For the sake of transparency following is required to be ensured by the CEA, CTU & STU while carrying out planning of transmission system in the Country:

(a) Transmission planning meetings must be open to all affected parties including, but not limited to, all transmission and interconnection customers and other stakeholders.

(b) To disclose to all customers and other stakeholders the basic criteria, assumptions, and data that underlie their transmission system plans.

(c) To provide in writing and make available the basic methodology, criteria, and processes they use to develop their transmission plans.

(d) The stakeholders themselves or through their an independent third party can replicate the results of transmission planning studies and discrepancies/comments can be furnished to Central Study Committee, Regional Study Committee or CTU or STU.

(e) Disclosure of critical infrastructure information and commercially sensitive data with regard to transmission planning shall be governed by the provisions of Section 8 of the Right to Information Act, 2005.

Gridco's view :

(i)The basic criteria, assumptions, and data including methodology involved, processes & the rationality of the final decision taken in CSC , RSC & CEA level (along with reason of non acceptability of any proposed transmission scheme) need to be uploaded in website.

20. Transmission Planning Criteria:

Existing provision

Under the Act, CEA is responsible to specify Transmission Planning Criteria and as per regulation 20.2, while specifying the Planning Criteria, CEA shall also consider the following broad principles

(a) The Dynamic Stability Studies of heavily loaded transmission system with High Gain Static Excitation system along with PSS and Limiters in action should be carried out.

(b) Voltage Stability Studies including development of VQ curves under the worst contingency.

(c) Evaluate the impact of SCR and Inertia Constants of large size generators in the Public and Private Sectors on load-ability of lines.

(d) Application of reactive sources on the lines in the form of shunt reactors, passive and dynamic compensation and in special cases use of Phase Angle Regulators at strategic nodes to control the loop power flows and optimize the loadings on lines shall be done.

(e) Besides the passive shunt reactors provided in the system, dynamic support in the form of SVC or STATCOM should be provided to take care of post-fault developments. The quantum of dynamic resources in the form of SVC and STATCOM would be over and above the quantum of passive

compensation provided and as a thumb rule it could be around 50 % of passive capacitive resources.

Gridco's view :

(i) Reliability assessment including both capacity adequacy and a system security assessment is definitely a key part of the planning process. In Gridco's view the planning criteria should also be driven by commercial impact to the end use customer i.e apart from aforesaid technical aspects towards conformity of reliability assessment & system security assessment, CEA should also have pragmatic consideration towards the cost economy involved.

(ii) Since the Transmission planning horizon usually covers a long time period, for instance, 5, 10 or 20 years into the future, CTU/ CEA/MOP (the Planners) should make a decision based on social costs (sum of operation costs, investment costs, sunk cost due to uncertainty involved) rather than only taking technical requirement into considerations.

21. Standing Committee for Transmission Planning

Existing provision

21.1. National Standing Committee on Transmission Planning under the CEA shall be responsible for taking all decision with regard to the planning of ISTS after considering the inputs received from Central Study Committee and Regional Study Committee in accordance with the timelines specified in Regulations 26 of these Regulations.

21.2. The National Standing Committee on Transmission Planning shall be guided by the Rules of Procedure as may be decided by CEA with regard to

the manner of conducting the proceedings, quorum, consultation with stakeholders and basis for decisions.

Gridco's view :

Presently there exist standing committee for Power System Planning (SCPSP) for respective region which meets on annual basis . In this draft Transmission planning regulations, total 4 nos. of standing committee have been proposed / considered.

i) Central Study Committee ,

ii) Regional Study Committee ,

iii) Standing committee for Power System Planning (SCPSP)

iv) Standing Committee for Transmission Planning (SCTP).

Although the role of CSC & RSC have been stated but their exist ambiguity in role & responsibility between *Standing committee for Power System Planning* & *Standing Committee for Transmission Planning.*

Hence the purview , work jurisdiction / role & responsibility of this 2 Standing committees SCPSP & SCTP need to be clearly enumerated.

22. Classification of Transmission Plans:

Existing provision

22.The transmission plans shall be classified under following categories:

(a) Reliability Upgrade: These are the transmission plans which shall make the system compliant to transmission planning criteria. This shall be done for older systems. New systems shall be planned as per Transmission planning criterion.

(b) Economic Upgrade: These are the transmission plans which shall relieve congestion to avoid market splitting in power exchanges or decrease transmission losses.

(c) Interconnection Upgrade: These are the transmission plans which shall be planned to interconnect new generating station with the grid. The new connection should not adversely affect the existing grid.

(d) International Interconnections: These are the transmission plans which shall be planned for international interconnections.

(e) Public policy Upgrade: These are the transmission plans which are planned as public policy assets.

priority of implementation may be decided depending on type of upgrade.

Gridco's view :

Transmission plan should generally cast as a technological and financial struggle to maintain balance between Optimum use of resources & standards of grid stability, cum flexibility. So apart from these, in the name of public policy upgrade, stranded asset should not be created & loaded on the public. In any long term planning within a regulated environment, the investors are ensured of their return on investment but the interest of end use customers should also be equally ascertained in terms of reasonableness of the investment.

Limited consideration should not be given to the economic viability of new projects being considered under public policy upgrade categories. However the assets to be covered under public policy upgrade may be specifically defined

Moreover the priority of implementation should be clearly specified in this regulation instead of proposing that the priority of implementation may be decided depending on type of upgrade.

Cost bearing mechanism of different type of transmission planning should be as per the economic benefit received by beneficiaries. e.g. for the public policy upgrade necessary funding may be provided from PSDF fund/ central grant.

Hence benefits may be quantified to ensure that the cost allocation is also consistent with transmission planning categories, because at the end of the day its not the planner who pay , rather it's the end use customer who pay the price.

Existing provision

22.3. CEA, while proposing plans in Central Study Committee may go for alternatives recommended by Regional Study Committee or may choose another alternative as per the results of studies at national level.

Gridco's view :

The other alternatives if considered by CEA has to be adopted after detailed deliberation with all stake holders in transparent manner.

23. Procedure for Transmission Planning:

Existing provision

23.1. The following procedure shall be complied with all entities involved in the transmission planning of ISTS:

(a) The inputs regarding the generating stations which are likely to come up would become available to the transmission planners from the Central Repository of generation projects, applications for GNA and STUs.

Gridco's view :

GNA has not been commenced yet in India. Gridco in capacity of DIC has given its reservations about GNA. Unless the modalities of GNA along with execution details are not finalised by the Hon'ble commission, GNA should not be considered in the Transmission planning. Just like PoC, the concept of GNA will be an immutable fact for the indian power sector for years to come. Because of such change in transmission-planning design decisions from LTA to GNA , prior awareness / deliberation / analysis on such change of approach is highly essential before its inclusion in planning regulations. Hence Gridco's sincere submission before Hon'ble commission is not to include GNA in present Transmission-planning Regulations. 1st let the regulation / detailed procedure/ uncharted territory of GNA be clarified then if required the Transmission-planning Regulations be amended as per the then requirement.

Hence, in the procedure for transmission planning, GNA should only be included after GNA regulation is in place.

Existing provision

23.1(d) Bulk Consumers directly connected to ISTS need to provide their drawal requirements from the ISTS.

Gridco's view :

Bulk Consumers directly connected to ISTS need to provide their drawal requirements from the ISTS to the respective RSC.

Existing provision

23.1 (g) Transmission planning may be carried out under the aegis of Standing Committee on Transmission planning with a suitable margin above

Withdrawal GNA sought / assessed for each State which may be finalized by CEA in the separate procedure to be notified under these Regulations.

Gridco's view :

1st let the Regulation governing implantation & other aspects of GNA be in place , after that transmission planning may be based on GNA.

Existing provision

23.1(h) System studies should be carried out for various generation and load scenarios during peak, off-peak and other than peak/off-peak hours for different seasons considering low, moderate and high renewable capacity addition, scheduling of various generating stations which do not have any PPAs based on the relative merit order and GNA applied by the Generating Companies and the load projections of the States. The objective shall be to minimize the variable cost of generation. However, balance should be struck between minimizing the variable cost of energy and the requirement of transmission system.

23.1.(i) The variable cost of existing generating stations as available with CEA/Regulatory Commissions shall be considered. CERC would notify escalation indices for pit head and non-pit head plants to be considered for estimating the variable cost for planning period. The variable cost of new generating stations should be estimated by CTU in consultation with CEA and the generating stations based on likely source of fuel, normative heat rate as per CERC Regulations, variable charges of existing generating stations in a state based on pit head/load center based stations. In case of non-availability of data from CEA, variable charges may be considered by CTU based on similar sized units and norms for heat rate/ specific oil consumption, etc., as per CERC Regulations.

Gridco's view :

(i) Planning must be done not only from the contingency/ congestion removal point of view or from ensuring the reliability point of view but also with a prospective of effective utilisation of the transmission assets so that the cost of creating suboptimal redundant infrastructure won't pass on to the end consumers.

(ii) To assure the most reliable and economical solutions, instead of stochastic coordination of generation and transmission expansion planning model, in a competitive electricity market a more deterministic approach need to be followed.

(iii) Inter-alia, the "Monte Carlo simulation & scenario reduction" need to be applied by considering the commissioning schedule of Generators, random outages of generating units and transmission lines as well as inaccuracies in the long-term load forecasting to consider sufficient number of planning scenarios & to explicitly address the demand growth uncertainties.

Instead of imposing capacity obligation on load serving entities based on forecasted load and reserve margin criteria, it is appreciable to deal with the associated uncertainties & possible outcomes of planning decisions in a scientific manner as suggested above so that the impact of risk is ascertained beforehand.

25. Review of Transmission Planning:

Existing provision

25.1. Transmission Planning and its implementation shall be reviewed/updated keeping in view of inputs regarding generation such as deviation/departure from commissioning schedule, shifting of target region, retirement of units, operational feedback provided by RLDCs and SLDCs, exit

from LTA, system constraints, market conditions, etc. CEA and CTU shall devise a methodology for review of transmission plan in detailed procedure to be formulated by CTU and CEA.

Gridco's view :

(i) The detailed procedure formulated by CEA & CTU should be approved by CERC & views of stake holders must be sought for before finalisation of the same

(ii) Periodic review/ monitoring of the stranded asset created from time to time should be a part of procedure of transmission planning in order to restrain over creation of transmission asset leading to under-utilised transmission assets which is occurring at present.