

**No. L-7/ 1(2)2009-CERC
CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

- 1. Dr. Pramod Deo, Chairperson,**
- 2. Shri R. Krishnamoorthy, Member**
- 3. Shri. S Jayaraman, Member**
- 4. Shri V.S. Verma, Member**

In the matter of

Amendment to the Indian Electricity Grid Code.

STATEMENT OF REASONS

The Commission, by virtue of its powers under clause (h) of sub-section (1) of Section 79 read with clause (g) of sub-section (2) of Section 178 of the Electricity Act, 2003 ("the Act"), has specified the Indian Electricity Grid Code(the Grid Code). The Commission had published the draft of Indian Electricity Grid Code (Amendment) Regulations, 2009, to further amend the Grid Code and had invited suggestions and comments from the stakeholders on the amendments proposed, through a public notice dated 25.2.2009. The suggestions and comments received on the amendments proposed, from the persons listed in the Annexure enclosed, were considered. The final amendments of the Grid Code have already been notified and have come into force on 1.4.2009. Our decisions on the suggestions and comments received and considered while notifying the amendments are discussed in the succeeding paragraphs.

2 Chapter 1, Clause 1.5

2.1. As the Central Government has established the National Load Despatch Centre ("NLDC"), it became necessary to exclude NLDC along with RPC and

RLDC in the list of agencies whose non-compliance is not to be reported to Member Secretary RPC. Accordingly NLDC has been inserted in clause 1.5 in Chapter 1 of the Grid Code in addition to the agencies already mentioned therein.

2.2 NLDC and RLDCs pointed out that NLDC did not directly deal with regional entities and non-compliance by the regional entities would be taken up with respective RPC by the respective RLDC. Therefore, it was suggested that the proposed amendment may not be carried out. We are in agreement with the view that non-compliance is not to be reported by NLDC to RPC. Accordingly, the proposal has been dropped.

2.3 SRPC suggested that in case of non-compliance of any of the provisions of the Grid Code by NLDC, the matter should be reported to CERC.

2.4 The suggestion made by SRPC has been accepted. Accordingly, the third paragraph of clause 1.5 has been substituted as under:

“In case of non-compliance of any provisions of the IEGC by NLDC, RLDC or RPC, the matter shall be reported to the CERC.”

3. Chapter 1, Clause 1.9

3.1. In Chapter 1, clause 1.9, certain definitions were proposed to be inserted.

3.2. Definition of "collective transactions" was added to read as under—

“collective transactions” means a set of transactions discovered in power exchange through anonymous, simultaneous competitive bidding by buyers and sellers;”

3.3. It was suggested by NLDC and RLDCs that the words “collective transactions” should be replaced by the words “collective transaction”. The

suggestion has been accepted and the defined term now is “collective transaction”.

3.4 NLDC and RLDCs also suggested that definition of the term “Transfer Capability” may be added, because the term had been used at a number of places. Accordingly, the term "transfer capability" has been defined as per suggestion received to read as under:

“transfer capability of a transmission network is the ability to transfer electric power when operated as part of the interconnected power system and may be limited by the physical and electrical characteristics of the system considering security aspects of the grid.”

3.5 The proposed definition of “National Grid” read as under:

“The entire synchronously connected electric power network in country.”

3.6 It was suggested by NLDC, RLDCs and NTPC that the definition be revised to read as under:

“The entire inter-connected electric power network in country.”

3.7 The suggestion has been accepted because at present the entire country is not synchronously connected. Accordingly, the definition has been modified in keeping with the suggestion received.

4. Insertion of new clause 2.2.1A

4.1 An additional clause 2.1.1 A was proposed to be inserted to incorporate role of NLDC in accordance with the notification dated 2.3.2005 issued by Ministry of Power prescribing the functions of NLDC. Clause 2.2.1A (k) proposed, as one of the functions of NLDC, to levy and collection of such fee and charges

from the generating companies or licensees involved in the power system, as shall be specified by the Central Commission.

4.2 NLDC and RLDCs suggested that clause 2.2.1A (k) be deleted. WBSEDCL suggested that the licensees using inter-state transmission system and generators using such system will pay fees and charges for RLDC in proportion to electricity flow.

4.3 Levy and collection of fee and charges being one of the statutory functions assigned to NLDC by the Central Government under the Electricity Act, 2003 (the Act), we have retained the provision in the Grid Code. Accordingly, the suggestion of NLDC and RLDCs has not been accepted. As regards the point raised by WBSEDCL, we feel that the issue needs to be dealt with in the regulation relating to levy of RLDC fees and charges, separately under consideration of the Commission. .

5. Amendment of Chapter 4

5.1 The relevant clause in the published draft dealt with connection conditions and proposed that the connection conditions would be as specified in the Central Electricity Authority (Technical Standards for connectivity to the Grid) Regulations, 2007. It was also proposed to omit clauses 4.2 to 4.15 of Chapter 4.

5.2 It was suggested by NLDC and RLDCs that the existing clauses 4.2 to 4.15 may be retained as they covered a number of vital issues in greater detail than those covered in the regulations notified by CEA. Therefore, it was suggested to modify clause 4.1 regulations to read as under:

“4.1 Introduction

The Connection Conditions specify the minimum technical and design criteria which shall be complied with by CTU and any agency connected to, or seeking connection to ISTS. They also set out the procedures by which CTU shall ensure compliance by any agency with the above criteria as pre-requisite for the establishment of an agreed connection. CTU and any agency connected to, or seeking connection to ISTS shall also comply to Central Electricity Authority (Technical Standards for connectivity to the Grid) Regulations, 2007”

5.3 The suggestions made have been accepted. Accordingly, clause 4.1 has been suitably amended and clauses 4.2 to 4.15 have been retained

6. Chapter 5, Clauses 5.2 (i), 5.2 (l) and 5.4.2(a)

6.1 Clause 5.4.2(a) of Chapter 5 of the Grid Code provided for manual load-shedding to curtail over-drawl when frequency fell below 49.0 Hz. The Commission had proposed to increase the lowest operating frequency range from 49.0 Hz to 49.2 Hz. The Commission had separately proposed to revise the operating range to 50.3 to 49.2 Hz from the operating range of 50.5 Hz to 49.0 Hz and had also proposed to revise UI rates in accordance with the revised operating range. Many comments were received on this aspect. The proposed revision in the range of operating frequency, had been favoured by many stakeholders, including NLDC/RLDCs. Narrowing of the frequency band of operation was commented by many stakeholders as a step in the right direction of working of the power system, close to grid frequency standard of 50 Hz, leading to improvement in the quality of supply. Accordingly, the necessary changes have been incorporated at appropriate clauses of the Grid Code. The Commission, continuing its efforts in the direction, shall review all aspects of grid operation from time to time to arrive at an optimum operating frequency range.

6.2 It had been suggested that clause 5.2(i) be further amended to read as follows:-

“Except under an emergency, or to prevent an imminent damage to a costly equipment, no constituent shall suddenly reduce his generating unit output by more than one hundred (100) MW without prior intimation to and consent of the RLDC, particularly when frequency is falling or is below 49.0Hz. No constituent shall cause a sudden increase in its net interchange with the grid by more than one hundred (100) MW without prior intimation to and consent of the RLDC, when frequency is falling or is below 49.2 Hz. Similarly, no constituent shall cause a sudden reduction in its net interchange with the grid by more than one hundred (100) MW without prior intimation to and consent of RLDC, when frequency is rising or is above 50.3 Hz. “

6.3 It was further suggested by NLDC and RLDCs that since NER was operating in synchronism with ER, NR and WR, special stipulation for NER made in the Grid Code was not required. The changes suggested, were to claimed to maintain better grid discipline and to take care of sudden load reduction. SRPC suggested that no constituent should cause a sudden decrease in its load by more than 100 MW without prior intimation to, and consent of RLDC, particularly when frequency was above 50.0 Hz.

6.4 The above suggestions seeking prior intimation of RLDC for reducing load at rising frequency and to eliminate the special provision for NER cannot be acted upon at this stage because the suggestions were not published in the draft proposal.

7. Chapter 6, Amendments

7.1 This chapter deals with scheduling and despatch code. The word “NLDC” has been incorporated wherever it was required to make the code applicable to NLDC also and to bring in more clarity in scheduling and despatching code in the context of functions assigned to NLDC. Further, in many clauses, in order to

generalize the provision to include entities other than ISGS and beneficiaries, the term regional entities have been used.

7.2 The proposed new clause 6.4(1), based on para 11 of the Commission's order dated 7.5.2008 in Petition No. 58/2008, with regard to demarcation of responsibilities read as follows:

“RLDCs shall coordinate the scheduling of generating stations of 1000 MW or larger size and other generating stations in which, States, other than the host State have permanent shares of 50% or more. Generating stations not meeting the above criteria regarding plant size and share of other States shall be scheduled by the SLDC of the State in which they are located. However, there shall be exceptions, for reasons of operational expediency, by a mutual agreement between the concerned RLDC and SLDC.”

7.3 With reference to the above extracted proposed clause 6.4(1), the following comments received were –

- (i) Spice Energy commented that the clause was contradictory to the definition of ISGS and it needed to be reconciled.
- (ii) NLC pointed out that the system of scheduling of generating stations having beneficiaries other than the home State by RLDC may be continued, irrespective of the capacity of the generating station.
- (iii) According to Shri Padamjit Singh, this clause needed to be amended or deleted. He stated that in case of State generating station of more than 1000 MW capacity, the scheduling was required to be done exclusively by SLDC, without any role for RLDC. Further, according to him, in the draft clause 6.4(4) autonomy of SLDC was envisaged and SLDC was made responsible for scheduling of generation within the State.

The provision for RLDC scheduling of stations above 1000 MW which would include the State generating stations was, therefore, in contradiction with clause 6.4(4).

(iv) CSEB suggested that after the term other generating stations, the following may be inserted, "Excluding CPP's (not co-located)."

(v) NLDC and RLDCs suggested that in line with of the Commission's order dated 7.5.2008 in Petition No. 58/2008, the said clause may be amended to read as under:-

"RLDCs shall coordinate the scheduling of generating stations owned by Central Government organizations (excluding stations where full share is allocated to host state) and other generating stations of 1000 MW or larger size in which, States, other than the host State have permanent shares of 50% or more. Generating stations not meeting the above criteria regarding plant size and share of other States shall be scheduled by the SLDC of the State in which they are located. However, there may be exceptions subject to approval of CERC."

(vi) RRVPNL suggested that the words 'other generating stations' in second line may be deleted.

(vii) PTC commented that the Act had specified the roles of RLDCs and SLDCs. The roles clearly demarcate the region (i.e. Regional Grid) for RLDC and State for SLDC. According to PTC, there was no need for the Commission to demarcate the roles and responsibilities. PTC further observed that the proposed amendments sought to shift the responsibility of RLDC to SLDC on the pretext that RLDC was to concentrate on grid security, but the ground was not valid since if RLDC was to ensure security of the regional grid, SLDC had to ensure security of the State grid.

7.4 We are convinced that no departure was required from the reasoned decision of the Commission in Petition No. 58/2008. Therefore, the suggestion of NLDC/RLDCs has been accepted.

7.5 New clause 6.4 (2) was inserted to provide that in case of a generating station, contracting to supply power only to the State in which it is located, the scheduling, metering and energy accounting would be carried out by the respective State Load Despatch Centre.

7.6 With reference to the said clause 6.4 (2), Shri Padamjit Singh commented that this clause did not cover a situation where a generating station may be located in one State but supplying power to another State. It was illustrated that Malana-I of 86 MW located in HP might contract and supply its entire saleable power to Punjab. Accordingly, suggestion was made that such a generating station should be scheduled by SLDC of the purchaser State and not of the home State.

7.7 The suggestion has not accepted for the reason that it is covered by our decision on clause 6.4.(1), that is, primary scheduling responsibility is that of the State in which the generating station is located.

7.8 New clause 6.4 (3) was proposed to provide for the State Load Despatch Centre's responsibility for coordinating the scheduling of a generating station.

7.9 With reference to the proposed clause 6.4 (3), it was stated by Shri Padamjit Singh that this clause was misleading and was liable to create confusion because the duties assigned under this clause to SLDC were equally

valid and applicable to RLDCs in case of ISGS. It was suggested that this clause should be broad-based to cover not only SLDC but also RLDCs as well.

7.10 We are unable to agree with Shri Padamjit Singh that the contents of this clause would lead to a narrow interpretation. It is also significant that the responsibilities of RLDCs have been covered in sufficient detail through many other clauses and as such, there is unlikely to be any ambiguity about their duties and responsibilities.

7.11 NHPC suggested that publication of schedules from the State-owned generating stations should be made compulsory by SLDCs on their website in order to facilitate better and realistic planning of declared capacity by the downstream generating stations. We are of the view that this should be a part of State Grid Code.

7.12 With reference to the proposed clause 6.4(5), it was suggested by NLDC and RLDCs to consider the following insertion:

"The system of each regional entity shall be treated and operated as a notional control area. The algebraic summation of scheduled drawal from ISGS, long term, medium term and open access transactions shall provide the drawal schedule of each regional entity, and this shall be determined in advance on daily basis. While the regional entities would generally be expected to regulate their generation and/or consumers' load so as to maintain their actual drawal from the regional grid close to the above schedule, a tight control is not mandated. The regional entities may, at their discretion, deviate from the drawal schedule, within the limits specified by the CERC as long as such deviations do not cause system parameters to deteriorate beyond permissible limits and/or do not lead to unacceptable line loading."

7.13 The above suggestion has been accepted. The regional entities also have been included to make the clause broad-based. The words "bilateral transaction" have been replaced by the words "long term, medium term and other open

access transaction" to make it comprehensive and to include collective transaction as well. The volume caps have been imposed through the separate regulations on UI.

7.14 HPSEB suggested that the last sentence should be amended as under:

“While the State would generally be expected to regulate their generation and/or consumers load as to maintain their actual drawal from the regional grid close to the above schedule, a tight control need to be exercised whenever the frequency starts falling from 49.5 Hz. The States in no case should deviate from the drawal schedule when the frequency equals 49.0 Hz or 49.2 Hz as proposed in the draft amendment.”

7.15 The concern expressed by HPSEB has been adequately taken care of through the provisions made in the regulations on UI notified separately whereunder, volume caps have been imposed and the limit as specified by the Commission has been included.

7.16 It was suggested by Spice Energy that the last sentence should be deleted as this could encourage/legalize the over-drawals by the State, jeopardizing the grid discipline, particularly when UI mechanism was already in place.

7.17 We do not feel that the last sentence confers a licence on any entity to over-draw. There are adequate control mechanisms in the Grid Code to curb indiscipline by the constituents.

7.18 In the clause 6.4 (4) of the Grid Code, re-numbered as clause 6.4 (7) of the proposed amendment, the lower level of operation of frequency was proposed to be revised from 49.0 Hz to 49.2 Hz. It was proposed that when frequency was below 49.2 Hz, necessary load-shedding be carried out to curtail over drawal in suppersession of the earlier stipulation of 49.0 Hz. With reference

to this proposal, Shri Padamjit Singh suggested to amend the provision to read as follows:

“The overdrawing States shall carry out load-shedding to ensure that there is no overdrawl below 49.2 Hz.”

7.19 Another comment that was received from HPSEB was to amend the last sentence on the lines that in no case, this should exceed 5% of their net drawal schedule when the frequency started dropping below 49.5 Hz and the State(s) must follow a downward trend in respect of their over drawals, when the frequency touched an ebb level of 49.0 Hz to 49.2 Hz, as proposed in the draft amendment, requisite load shedding must be carried out by the concerned State(s) to bring the over-drawal to zero level failing which respective RLDC shall disconnect the feeders supplying electrical power to such States. This disconnection should continue for at least two hours in the first instance or as the Commission may deem appropriate.

7.20 The concerns expressed have been taken care of by narrowing of the frequency band and provision of additional UI rate below 49.2 Hz. Besides, non-compliance of the provisions will lead to the penal action under the Act.

7.21 The proposed clause 6.4(11) restricted actual net injection when the frequency was higher than 50.3 Hz, and backing down of ISGS and covered certain other matters. It was suggested by RRVPNL that the word 'hour' in the 6th line could be replaced by 'time' or 'block'. NLDC and RLDCs have also proposed that the word "hour" in first sentence may be replaced with "time-block".

7.22 The suggestion has been accepted. The word "hour' has been replaced by the words "time block".

7.23 NHPC pointed out that backing down was not applicable for run-of-river (ROR) hydro generating stations. It, therefore, proposed addition of words "except ROR stations" in the third line.

7.24 This aspect is being considered while examining comments on clause 6.5 (11).

7.25 It was commented by Shri Padamjit Singh that the only practical way to implement the provision of this clause was to despatch liquid fuel generation below 49.5 Hz despite its higher energy charge than Rs.4.80/kWh (UI rate at 49.5 Hz) and book the additional energy charge on overdrawing State on pro rata basis and accordingly to have a specific provision.

7.26 We are of the view that this is not necessary at this stage as the prices of liquid fuel have started falling. Nevertheless, the suggestion could be considered by RLDC for implementation as ancillary services under extreme conditions and in the interest of grid security.

7.27 NLDC and RLDCs have suggested that in clause 6.4(12) the words "in above sequence" may be retained in last sentence after the word "first".

7.28 We have accepted this suggestion for the purpose of adding clarity, and acceptance of the suggestion does not affect the proposal made.

7.29 CSEB suggested that SLDCs should also be entrusted with similar power if portion of STU transmission line was found over-loaded and State grid security

was in danger. We feel that the proposed clause needs to be considered for inclusion in the State Grid Code by the SERC.

7.30 Clause 6.4(14) of the amendment proposed, that joint/bilateral agreement(s) would be filed with the concerned RLDC(s) and REB/RPC. NLDC and RLDCs suggested that the word "REB" should be deleted. We have accepted the suggestion because REB has since been replaced by RPC.

7.31 Clause 6.4(15) dealt with compliance with the guidelines on unscheduled interchanges. It was suggested by NLDC/RLDCs that all constituents and other regional entities should abide by the concept of frequency-linked load despatch and pricing of deviations from schedule, i.e., unscheduled interchanges. All generating units of the constituents, their licensees, generating companies and other regional entities should normally be operated according to the standing frequency-linked load despatch guidelines issued by RLDC, to the extent possible, unless otherwise advised by the RLDC/SLDC.

7.32 We have accepted the proposal as this enhances clarity of the provision and makes it broad-based by including other regional entities as well.

7.33 A comment received from Shri Padamjit Singh was that the frequency-linked load despatch guidelines should be as an annexure to the Grid Code.

7.34 We do not consider it necessary because there are separate of regulations on UI to cover this aspect in much detail.

7.35 Clause 6.4(16) dealt with advance declaration by ISGS; capability and declaration of fuel shortage; ramping up / ramping down in a block, units and

modules on APM gas, RLNG and liquid fuel, etc. It was suggested by NLDC and RLDCs that the clause may be modified to read as under:

"The ISGS shall make an advance declaration of ex-power plant MW and MWh capabilities foreseen for the next day, i.e., from 0000 hrs to 2400 hrs.. During fuel shortage condition, in case of thermal stations, they may specify minimum MW, maximum MW, MWh capability and declaration of fuel shortage. The generating stations shall also declare the possible ramping up / ramping down in a block. In case of a gas turbine generating station or a combined cycle generating station, the generating station shall declare the capacity for units and modules on APM gas, RLNG and liquid fuel separately, and these shall be scheduled separately. Total declared capacity shall be the sum of declared capacity for APM gas, RLNG and liquid fuel for the purpose of computation of availability. "

7.36 Another comment received was that this clause did not address the scheduling aspect of CCGT stations which had three schedules based on gas, RLNG and liquid, instead of one indicated in the second sentence of this clause.

7.37 Shri Padamjit Singh suggested that UI accounting for gas, RLNG and liquid fuels should also be done separately.

7.38 Taking the above suggestions into account, it has been decided to make the provision compatible with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (the 2009 tariff regulations). For gas/liquid fuel generating station's capacity declaration should be made separately. This, being a scheduling aspect, was not covered in the 2009 tariff regulations. The clause has been partially modified accordingly. We hope that the stakeholders would appreciate that UI accounting for gas, RLNG and liquid fuel cannot be separated due to technical constraints in segregating actual generation fuel-wise.

7.39 Clause 6.4(17) of the amendments proposed, dealt with declaration of capability during peak hours, and cases of tripping/re-synchronisation of units as a result of forced outage of units.

7.40 NHPC pointed out that that the condition of peaking hour was not applicable for purely ROR generating stations and suggested that an exception be provided in case of ROR hydro stations. We do not consider any change is necessary because the proposed clause is based on a similar provision earlier made in the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 (the 2004 tariff regulations).

7.41 NLDC and RLDCs proposed that the word “generator” may be replaced by “ISGS”. We have accepted the suggestion as this makes the provision broad-based and adds to clarity.

7.42 NHPC further suggested that the following exceptions may be provided for:

- (a) Partial loss of capacity on account of quality and quantity of fuel available.
- (b) Partial loss of capacity on account of partial outage of auxiliary equipment/system.
- (c) Partial loss on account of ambient temperature particularly for gas based stations.

7.43 We have not considered it appropriate to specify any exemptions because these are normal operational issues and need be taken care of in normal course

with prudent capability declaration and need not be covered under emergency provisions of the Grid Code.

7.44 Clause 6.4(18) deals with declaration by ISGS; suspected over/under declaration of the plant capability. It was commented by Shri Padamjit Singh that in view of past experience of gaming by gas based stations (over generation on gas and under generation on liquid fuel) a separate clause is required for CCGT stations as under:

(a) Each station to give its actual fuel consumption (gas, RLNG, liquid), the next day to the RPC/RLDC on daily basis and the corresponding heat value and actual generation on daily basis.

(b) The UI be worked out separately for each schedule from (a) above.

(c) The nature and extent of gaming in CCGT stations is so extreme / severe that a daily account of fuel and energy is absolutely necessary so as to correlate the actual generation with the schedule and to eliminate the hitherto unchecked practice of gaming.

7.45 While we fully appreciate the concern, we feel that this may not be needed because there are adequate safeguards already provided against gaming. A fall in liquid fuel prices has also reduced differential between generation cost from different fuel sources and minimised possibility of misdeclaration.

7.46 Clause 6.4(19) provided for installation, operation and maintenance of special energy meters by CTU to be in accordance with Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006. It was

suggested by the NLDC and RLDCs that the phrase 'regional constituents' used may be replaced by "regional constituents and other regional entities". The phrase "by Tuesday noon" should be added at the end of the last sentence. We have accepted the proposal.

7.47 Clause 6.4(20), proposed to lay down RLDCs' responsibility for computation of actual net injection / drawal of each beneficiary, etc. NLDC and RLDCs suggested that the said clause be amended to replace the words 'beneficiaries' and the word 'constituents' with the word 'regional entities'. The suggestion has been accepted.

7.48 Clause 6.4(21) of the amendment proposed provided for demonstration of declared capability of generating company as and when asked by RLDC. NLDC suggested that the word "generating company" may be replaced by the word "ISGS". As the proposed change is likely to enhance clarity, we have accepted the suggestion.

7.49 WBSEDCL proposed that a provision should also be included by virtue of which on request from beneficiary through RLDC, the generators shall demonstrate their declared capacity. We do not consider it necessary to make such a provision in the Grid Code. The beneficiary is at liberty to request RLDC which in turn may ask for demonstration of DC of the generating station.

7.50 Shri Padamjit Singh suggested that for CCGT stations a separate clause was necessary in view of three fuels and the three schedules. We do not consider it necessary because the present provision is flexible enough to cover all types of generation.

7.51 Clause 6.4(22) of the amendment proposed laid down charges and penalty for mis-declarations. Spice Energy observed that this clause needed clarification regarding geometrical progression of penalty for mis-declaration and also enquired as to whether it was for a particular time period or throughout life of power station i.e. 25 years or 35 years.

7.52 We would like to clarify that this provision was already a part of the 2004 tariff regulations, but has now been made part of the Grid Code. The Commission at this stage has not gone into the specific duration for the above clause. However, concern is taken note of and shall be addressed in due course.

7.53 Clause 6.4(23) of the amendment proposed provided for review by RPC of operating log books of the generating station. It was suggested by Shri. Padamjit Singh that this clause needed to be expanded so that the daily fuel consumption and heat energy account of each CCGT station, separately for each fuel for each day was invariably supplied by the generator to RLDC as well as RPC as a part of the daily operation process. We do not consider any amendment necessary as the present provision is considered to be self sufficient.

7.54 Clause 6.4(24) of the amendment proposed clarified the scope of gaming by generating stations.

7.55 NLDC, RLDCs and Shri Padamjit Singh suggested that the words "(excluding from hydro stations)" may be included after the word "generation" in the first sentence.

7.56 We have accepted the suggestion because the above clause does not apply to hydro generating stations for which the provision of adjustment on D+3 basis has been specified.

7.57 NHPC stated that this clause was in contravention to the provisions of the clause 6.5(8) regarding hydro generating stations.

7.58 We have considered the suggestion and a suitable modification has been made. Hydro generating stations have been excluded from the purview of this clause since a suitable provision for hydro generating stations has been considered separately under clause 6.5(8).

7.59 We have not accepted the following suggestions, said to have been made to check gaming, as the issue has separately been dealt with in UI regulations:

- (a) The limitation of 105% in a block shall be linked to the frequency such that the limiting value of 105% may be raised when the frequency reduces (Provided that the capacity is available in the station for such increase.)

[NLC]

- (b) Since the Commission has already increased target availability to 85% and reduced auxiliary power by 1.0% for 500 MW units, the cap on UI generation is no longer relevant. The cap on quantum of generation eligible for UI (101% of DC) on daily basis need to be removed as long as DC is more than installed capacity less normative auxiliary power.

[NTPC]

7.60 Clause 6.4(25) of the amendment proposed provided for investigation into gaming by RLDC and the subsequent action if gaming was found. This clause

excludes hydro generating stations as those have been covered under clause 6.4 (26).

7.61 Shri Padamjit Singh has observed that this clause does not address the issue of CCGT stations and has suggested that UI account of each fuel should be maintained separately. As discussed earlier on the comments relating to clause 6.4(16) this has not been found feasible and hence not needed.

7.62 CSEB has suggested that the following provision may be added to avert gaming by generators by non-injection or under-injection:

“For any generation less than the prescribed limit, the SLDC shall investigate so as to ensure that there is no gaming & if gaming is found by SLDC, the generators will be charged with the maximum UI rate or the price of power sold whichever is higher.”

7.63 We are of the view that this is not needed. This should be a part of State Grid Code.

7.64 Clause 6.4(27) of the proposed amendment provided for review by RLDC into deviations to check unfair gaming or collusion. In this connection, Shri Padamjit Singh suggested that a separate clause was required for dealing/addressing CCGT stations. We do not consider it necessary and a common provision should take care of all types of thermal generation.

7.65 NLDC, RLDCs suggested that the word "Constituent" in the clause may be replaced by "Constituent and other regional entities" and the word "REB" be removed. The suggestion has been accepted.

7.66 Clause 6.4(28) of the proposed amendment provided inter alia for NLDC to develop a procedure for calculation of available transfer capacity. It was suggested by NLDC and RLDCs that the word "capacity" may be replaced by "capability". As "transfer capability" is the accepted terminology and is used internationally, we have accepted the suggestion.

7.67 Clause 6.4(29) of the proposed amendment dealt with assignment of responsibility of scheduling of the ISGS to the SLDC in case of mutual agreement. It was suggested by NLC that RLDCs were fully equipped for scheduling the ISGS and role of RLDC and SLDC should not be mixed up. We do not consider that the provision results in any mixing up of roles.

7.68 WBSEDCL expressed an apprehension that the term "predominant" appearing in this clause may be used in future arbitrarily and proposed that the issue was required to be made specific and it would be better if such dispensation was to be allowed.

7.69 As the provision is to be invoked with mutual consent of the parties, we do not anticipate any problem. Accordingly, no change has been considered necessary.

8. Chapter 6, clause 6.5

8.1 This clause dealt with scheduling and despatch procedure. The provision of scheduling, metering and accounting of thermal generating stations and hydro generating stations in the 2004 tariff regulations for the period 2004-09 had been done away with in the 2009 tariff regulations, applicable for the period 2009-14.

According to the 2009 tariff regulations, the methodology for scheduling, metering and accounting is to be specified in the Grid Code. As such, the methodology was proposed to be incorporated in the Grid Code and consequential amendments were proposed.

8.2 NLDC suggested that in clause 6.5(3), in the first sentence the words "of the following day" may be deleted and a new sentence may be added as follows:

"During fuel shortage condition, in case of thermal stations, they may specify minimum MW, maximum MW, MWh and declaration of fuel shortage"

8.3 We are of the view that the suggestion made is not required, as fuel shortage condition has been taken care of in clause 21(4) of the 2009 tariff regulations.

8.4 NLDC suggested that in clause 6.5 (5) (i), (ii), (iii), (iv), (v), (vi), (vii), (viii), (ix), (x), and (xi), should be reworded as follows:-

(i) Power Exchanges shall furnish the interchange on various interfaces/control areas/regional transmission systems as intimated based on advice by NLDC and total drawal and injection of the regions. Based on the information furnished by the Power Exchanges, NLDC shall check for congestion. In case of congestion, NLDC shall inform the Exchanges about the period of congestion and the available limit for scheduling of collective transaction on respective interface/control area/transmission systems during the period of congestion for Scheduling of Collective Transaction through the respective Power Exchange. The limit for scheduling of collective transaction for respective Power Exchange shall be worked out in accordance with CERC

directives. Based on the application for scheduling of Collective Transaction submitted by the Power Exchange(s), NLDC shall send the details (Scheduling Request of Collective Transaction) to different RLDCs for final checking and incorporating them in their schedules. After getting confirmation from RLDCs, NLDC shall convey the acceptance of scheduling of collective transaction to Power Exchange(s). RLDCs shall schedule the Collective Transaction at the respective periphery of the Regional Entities.

(ii) The individual transactions for State Utilities/intra-State Entities shall be scheduled by the respective SLDCs. Power Exchange(s) shall send the detailed break up of each point of injection and each point of drawal within the State to respective SLDCs after receipt of acceptance from NLDC. Power Exchange(s) shall ensure necessary coordination with SLDCs for scheduling of the transactions.

(iii) Timeline for above activities will be as per Procedure for Scheduling of Collective Transaction issued by the CTU or Government Company or authority or corporation operating the RLDCs and NLDC.

8.5 The suggestion has been accepted. However, we feel that time lines need not be specified in the Grid Code, as time lines are provided in the procedure for collective transaction in the open access regulations.

8.6 WBSEDCL proposed that a provision should be made by virtue of which SLDC's clearance on congestion aspects in the State grid was taken care by NLDC/RLDC on daily basis. We do not consider it necessary to have the provision as proposed because the open access regulations have the provision of

standing clearance from SLDC. SLDC will be at liberty to revise standing clearance in case of congestion.

8.7 It was suggested by RRVPNL that the word 'hr' appearing in sub- clause 5(i), 5(ii) and 5(vi) after 'AM/PM may be deleted. It was further suggested that in sub-clause 5(iii), the portion 'if there is no congestion, Power Exchange shall submit the application to NLDC by 3 p.m.' may be deleted as same is appearing in sub-clause 5(v) as well. The provision has since been rephrased comprehensively and the concerns expressed by RRVPNL have been taken care of.

8.8 NLDC and RLDCs suggested that in clause 6.5 (7) ii the word "beneficiary" in the first line may be replaced by "regional entity" and words "and collective transaction(s)" may be included after the word " interchanges". The word "State-wise" in the last line may be replaced by "regional entity-wise". "Hours" in 2nd line may be replaced by "time block". This has been accepted in order to make the clause more broad-based.

8.9 NLDC, RLDCs also suggested to delete clause 6.5 (7) iii. We are in agreement with the proposal because the provision has been included in clause 6.5(7) ii also. In the final notification, this has been taken care of.

8.10 NHPC observed that the provision in clause 6.5 (8) would act as a major disincentive to the hydro generators as it would force them to plan for future uncertainties which may crop up on Day 4 and make extra generation on Day 1 (to support the grid), by terming as a complex, risky and speculative business without any benefit to the generator. Further, based on the directions by the Load

Despatch Centre, emanating from these amendments for forced reduction in schedule on Day 4 could jeopardise the security of the grid. According to NHPC, these amendments would create a situation wherein hydro generators would be disincentivised to generate extra electricity during peaking hours.

8.11 We would like to clarify that the provisions in clause 6.5(8) for hydro generating stations are based on the 2004 tariff regulations introduced through amendment dated 28.12.2007. We are not convinced that the proposed clause would disincentivise generation. Significantly, but for NHPC no other central hydro generating station has raised any objections to the scheduling and despatch procedure which was proposed to be incorporated in the Grid Code. The suggestion has not been accepted

8.12 NHPC, NLDC and RLDCs suggested to delete the second sentence in clause 6.5 (11) and 6.5.(12) , in view of the 2009 tariff regulations. The suggestion has been accepted as under the 2009 tariff regulations the concept of maximum available capacity / capacity index has been dispensed with.

8.13 NTPC suggested to include the following provisions in clause 6.5(11) in view of the 2009 tariff regulations:

- (i) RLDC shall ensure no spillage of water while scheduling.
- (ii) RLDC shall ensure scheduling of available energy over the year. In case, it is not possible to schedule the same due to any system constraints, the difference between available energy (to the extent of design energy) and schedule energy over the year shall be treated as

deemed schedule and certified by RLDC shall certify the same accordingly.

8.14 We are not able to persuade ourselves to accept the suggestion, because optimum utilisation of hydro energy has already been taken care of by the regulations. Spillage of water in ROR hydro stations is a matter of concern, which has been taken care of in clause 6.5 (11). With regard to deemed generation, this aspect has been dispensed with in the 2009 tariff regulations. Hence the suggestion has not been accepted.

8.15 NLDC and RLDCs suggested that in clause 6.5 (14), the words "up to 200 MW per hour" may be replaced by "5-10% per time block of 15 minutes" and the words "(50 MW in NER)" should be deleted. We have not agreed with the suggestion because the same was not proposed to be amended in the draft regulations, published to invite comments of the stakeholders.

8.16 NLDC and RLDCs observed that clause 6.5 (16), was not compatible with the open access regulations, 2008. On consideration, we have deleted this clause so as not to be contrary to the open access regulations.

8.17 The following comments were received in respect of clause 6.5 (18):-

- (i) NLC has suggested that the revision should be effective from the second time block, counting the time block in which the revision is advised by the ISGS to be the 1st one to avoid heavy UI penalty to the generators in view of the improved communication facilities and web based scheduling by SRLDC.

(ii) It was suggested by NTPC that the revision should be effective from the second time block or UI payable by the generator should be capped for such time blocks at 408 paise/kWh.

(iii) NHPC also suggested that the scheduled generation be revised equal to actual generation in the first, second and third time blocks, when revision is sought by ISGS on account of flash flood, high silt content in the inflow besides other reasons, which are beyond the control of the generators.

8.18 We are of the view that revision with effect from the second time-block may not be practically possible considering the number of utilities / SLDCs required to be contacted by respective the RLDC. However, we have added the words "Notwithstanding anything contained in Regulation 6.5(20)," at the beginning of this clause. The change takes care of revision of schedule in case of forced outage of a unit of hydro power station.

8.19 NLDC and RLDCs suggested that in clause 6.5 (18) in the second sentence the word " beneficiary" may be replaced by " regional entity" and the words " to be equal to their actual drawals" may be replaced by "accordingly". We have not considered the suggested change to be necessary because this clause is in conformity with the existing provisions.

8.20 CSEB suggested that since the constraints and bottlenecks in the State transmission system were not be known to RLDC, SLDC may also be entrusted

with the power to revise the schedule. We feel that such a provision should rightly form part of the State Grid Code and, therefore, no amendment is necessary to accommodate the view of CSEB.

8.21 NLDC and RLDCs suggested the following in clause 6.5 (21):

- (i) The phrase "except hydro stations" may be added after the word "ISGS(s)" in the first line.
- (ii) The following sentence may also be added in the end:-

"Provided that RLDC may allow only one revision, in case of Run of the River (ROR) and pondage based hydro generating stations, if there is large variation of expected energy (MWh) for the day compared to previous declaration".

8.22 NTPC and NLC suggested that time period of revision of schedule by the sixth time block be reviewed.

8.23 In this regard it is clarified that in terms of the notification dated 28.12.2007 *ibid*, clause (xii) of regulation 45 of the 2004 tariff regulations was amended to state that revision of declared capability and energy by generators and requisition by the beneficiaries, for the remaining part of the day shall be permitted, but only in case of a contingency. Since contingency condition was not clearly defined in the amended clause in the 2004 tariff regulations, it caused problems while revising schedule in case there were large variations in inflows and expected energy (Mwh), for the day compared to previous day's declaration by the generator. On the suggestions of RLDCs, one revision has been accepted in case of run-of-river (ROR) and pondage based hydro stations if there is large variation of expected energy (MWh) for the day compared to previous

declaration. Accordingly, a proviso has been added to the clause on the lines suggested by NLDC/RLDCs.

8.24 The following suggestions were received on clause 6.5 (23) on the proposal for amendment:

(i) NLDC and RLDCs have suggested that the words and numbers " (10 MW in NER)" may be deleted;

(ii) WBSEDCL has proposed that in place of "50 MW (10 MW in NER)" the existing criteria of 2% should be continued.

(iii) It has been suggested by NTPC that the existing provision of 2% of previous schedule/capability or 50 MW (10MW in NER), whichever is lower, should be applicable.

(iv) It has been proposed by NHPC that the clause may be amended as: "To discourage frivolous revisions, RLDC may, at its sole discretion, refuse to accept schedule/capability changes of less than 5% of the previous declared capacity in case of pondage or storage type ROR schemes and changes of less than 1% of previous declared capacity in case of purely ROR schemes of Hydro."

(v) According to NLC this amendment may cause severe damage in the case of low capacity units like 50MW, 100MW etc. With the introduction of

Web Based Scheduling in Southern Region by SRLDC, both ISGSs and RLDC is not facing any hardship in implementing revisions. However, if CERC is very particular in avoiding frequent revisions, instead of mentioning quantum, it may indicate as percentage of DC of ISGS as already given in the existing regulations.

8.25 We have given our anxious consideration to the above suggestions and have decided that the corresponding provision numbered as clause 6.5(17) of the existing Grid Code be restored. In place of "50 MW (10 MW in NER)" the words and numbers "2% of previous schedule/ capability" have been incorporated.

8.26 With regard to clause 6.5 (25) of the amendment proposal, NHPC suggested that keeping in view the remote locations of hydro stations, RLDC may ensure the communication of such revision through alternative means of communication like telephone, fax, email, etc. In line with the 2004 tariff regulations, this suggestion has not been accepted. Further, NLC suggested that all the constituents involved in the ABT may be advised to have all type of available communication facilities to ensure smooth and economic operation of grid. We have not accepted the suggestion because the provision made is in line with the 2004 tariff regulations.

8.27 NLDC and RLDCs stated that the clause 6.5 (27) was not required. We feel that this is an enabling provision, and has been continued.

8.28 NLDC suggested addition of the words "at each control area boundary for each of the transaction" after the word "decimal", for better clarity. We have accepted the suggestion .

9. Annexure 1 in Chapter 6

9.1 NLDC and RLDCs proposed to amend para (12) of Annexure-1 in Chapter 6, as under:

"INTERFACES FOR SCHEDULING AND UI ACCOUNTING INTERREGIONAL EXCHANGES:

1. The regional boundaries for scheduling, metering and UI accounting of inter-regional exchanges shall be as follows:

- Eastern Region end of inter-regional links between Eastern Region and Southern, Western and Northern Regions.
- North-eastern end of inter-regional links between Eastern and North Eastern Region
- Western Region end of inter-regional links between Southern and Western Region
- Western Region end of inter-regional links between and Northern and Western Region.

2. No attempt shall be made to split the inter-regional schedules into linkwise schedules (where two regions have two or more interconnections)."

9.2 We are in agreement with the view that the individual links need not be specified as the same is subject to change with addition of new links and LILO of existing links. Accordingly, this clause has been modified.

9.3 RRVPNL suggested that the word 'NR-WR' may be deleted as UI rate for NR and WR is same. In view of the thorough revision of the clause based on the suggestion of NLDC and RLDcs, this suggestion by RRVPNL became infructuous.

10. General comments

10.1 NTPC made a general observation that UI accounting for various stages may be done collectively for the station as a whole to eliminate needless additional metering required to segregate ex-bus generation of various stages. This issue has already been dealt in UI regulations and does not call for any further deliberations.

Sd/= (V.S. Verma) Member	Sd/= (S. Jayaraman) Member	Sd/= (R. Krishnamoorthy) Member	Sd/= (Dr. Pramod Deo) Chairperson
New Delhi, dated the	8 th June	2009	

Annexure - I**Name of the Stakeholders who submitted comments/ objections/
suggestions**

S. No.	Name of Stakeholder
1	National Load Despatch Centre (NLDC)
2	Regional Load Despatch Centres (RLDCs)
3	National Thermal Power Corporation (NTPC)
4	West Bengal State Electricity Distribution Company Limited (WBSEDCL)
5	Rajasthan Rajya Vidyut Prasaran Nigal Limited (RRVPL)
6	Spice Energy Pvt. Ltd.
7	Er. Padamjit Singh, Ex-CE, PSEB
8	Nayveli Lignite Corporation Limited (NLC)
9	Chattisgarh State Electricity Board (CSEB)
10	National Hydro Power Corporation (NHPC)
11	Himachal Pradesh State Electricity Board (HPSEB)
12	PTC India Ltd