

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. **Shri D.P. Sinha, Member**
2. **Shri G.S. Rajamani, Member**
3. **Shri K.N.Sinha, Member**

In the matter of :

Maintenance of Grid Frequency in the Southern Region.

And in the matter of

Show cause notice to Karnataka Power Transmission Corporation Ltd.

The following were present:

1. Shri S.K. Soonee, AGM, SRLDC
2. Shri R.G. Yadav, ED (SO), PGCIL
3. Shri V. Mittal, AGM, PGCIL
4. Shri K. Ramakrishna, CM (Comm.), SRLDC
5. Shri Sunil Agarwal, CM (SO), PGCIL
6. Shri S.K. Jain, Mgr. (Law), PGCIL
7. Shri A.K. Sinha, Mgr. (SO), PGCIL
8. Shri S.S. Naganand, Advocate.
9. Shri R.P. Wadhvani, Advocate for KPTCL

**ORDER
(Date of Hearing: 21.3.2002)**

Sustained low frequency operation or permitting the frequency variation in a wide range causes damage to the electrical equipment of power plants as well as that of the consumers. In power plants, such operation may cause damage not only to the auxiliary equipment like motors and pumps but also to turbines and generators. Last stage blades of the turbine are particularly susceptible to damage due to sustained low frequency operations. It is because of this reason that manufacturers do not recommend operation for turbo-generators at frequency

beyond the standard frequency. Several cases of damage to turbines have been reported in the country due to sustained low frequency operation. We were told that a large number of the generating units, particularly the old ones might develop problems within a short duration thereby pushing the region to the unmanageable level. A wide cross-section of society from domestic and commercial consumers to farmers and industrial consumers use electricity for operating a variety of electrical and electronic equipments. These equipments are also liable to damage on account of variation in frequency/voltage of electric supply. Quality of products of a number of process industries like rolling mills is heavily dependent on the quality of power supply. Poor quality of power supply not only results in reduced life of equipment but also in poor quality of products. In case of irrigation pumps, the total operating hours of the pumps are to be increased for pumping same amount of water if the frequency of operation is low. Thus, cumulative effect of sustained low frequency operation may have substantial bearing in safe and sustained operation of assets which are difficult to be created in a resource constrained economy, like that of India.

2. Another aspect of low frequency operation which was brought to our notice is, that the level of grid security takes nose-dive as the frequency gets lower and lower. With the reduced level of grid security, even a small perturbation like outage of a generating unit or transmission line is sufficient to cause a grid collapse leading to failure of power supply in the region. The restoration time of the grid normally varies from few hours to a day causing colossal amount of financial, industrial, economic and societal damages, directly or indirectly.

3. On consideration of the baneful effects of operation of the grid at low frequency on the intra regional transmission of power adversely affecting the security of the state system, in the IEGC approved by the Commission in discharge of its functions under clause (c) of Section 13 of the Electricity Regulatory Commissions Act hereinafter referred to as “the Act”, as a result of proceedings in Petition No.1/1999, culminating in issue of orders dated 30-10-1999 and 21-12-1999, accordingly provides as under so far as maintenance of grid frequency is concerned:

Para 4.6 (b)

“Frequency Variation

Rated frequency of the system shall be 50.0 Hz and shall normally be controlled within the limits as per Indian Electricity Rules, 1956 (IE Rules) as amended from time to time.”

Para 6.4.2

“As mentioned elsewhere, the constituents shall endeavour to restrict their net drawal from the grid to within their respective drawal schedules whenever the system frequency is below 49.5 Hz. When the frequency falls below 49.0 Hz, requisite load shedding (manual) shall be carried out in the concerned State to curtail the over-drawal.”

Para 7.4.4

“Provided that the States, through their SLDCs, shall always endeavour to restrict their net drawal from the grid to within their respective drawal schedules, whenever the system frequency is below 49.5 Hz. When the frequency falls below 49.0 Hz, requisite load shedding shall be carried out in the concerned State (s) to curtail the over-drawal.

4. It has been brought out that under clause (c) of Section 13 of the Act, the Commission is bestowed with the function to “regulate”, inter alia, inter-state transmission of electricity. As held by the Apex Court in K. Ramanathan Vs State of Tamil Nadu (AIR 1985 SC 660), power to regulate carried with it full power over the thing, which is the subject matter of regulation. The Apex Court further held that the power to regulate included adoption of rule or guiding principle to be followed or making of rule with respect to subject to be regulated. The IEGC, published under the orders of the Commission passed in discharge of function under clause (c) of Section 13 of the Act, contains the guiding principles relating to inter-state transmission of electricity. The IEGC has been accorded statutory recognition by Regulation 95 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 framed under Section 55 of the Act, according to which, “the Commission shall approve the code concerning planning, development, connection/use of Inter-State Transmission System integrated operation and grant of transmission licence which shall be notified as Indian Electricity Grid Code (IEGC)”. Accordingly, the principles contained in the IEGC were considered binding on all the entities involved in inter-state transmission of electricity.

5. SRLDC had filed Petition No.93/2000 (SRLDC Vs Transmission Corporation of Andhra Pradesh and others) on 28.9.2000 seeking directions, inter alia, to the respondents therein to restrict their drawal from the grid within the

drawal schedule prepared by it and to maintain the grid frequency at 48.6 Hz. and above at all times. SRLDC sought certain other directions to the respondents to faithfully follow the instructions of the petitioner as an apex body under the law and adhere to the provisions of the IEGC. Subsequently, a number of other Petitions and Interlocutory Applications (IAs) pointing out the aberrations in the conduct of the respondents in maintenance of grid frequency and disobedience of the provisions of the IEGC were also filed by SRLDC. All these petitions and IAs¹ were heard on 27.7.2001 and were finally disposed of by the Commission through a common order dated 3.8.2001. The Commission gave the following specific directions to the respondents in those petitions:

“Accordingly, we direct that the beneficiary states shall schedule their draws from the Regional Grid in such a manner that during the first three months i.e. from 1st August 2001 to 31st October 2001 the frequency of the Regional Grid shall not be allowed to fall below 48.5 Hz. Thereafter, during the next three months, that is up to 31st January, 2002, the frequency shall be maintained above the level of 49.0 Hz by taking suitable measures to comply with the provisions of IEGC. The measures adopted may be to increase the generation within the region or import of power from neighbouring regions or through proper load management and load shedding. We want to make it clear that these directions shall not be construed to absolve the respondents of their liability to pay Unscheduled Inter-change charges under the ABT regime. We also point out that non-compliance of these directions shall invite penal action under Sections 44 and 45 read with Section 47 of the Electricity Regulatory Commissions Act, 1998 and the Chief Executives of the utilities and/or concerned divisions of the same, shall be made personally liable. A copy of this order be sent to each of the Chief Executives, etc. by name for his personal information and appropriate action, in addition to the copy to be sent in the normal course.”

¹¹ Petitions No. 93/2000, 94/2000, 98/2000, 103/2000 & 106/2000.
IA Nos. 15/2001, 16/2001, 18/2001, 35/2001 & 39/2001 in Petition No. 93/2000

6. As a corollary of the above directions, SRLDC, the petitioner in Petition No.93/2000 and other petitions, was directed to file affidavits by 15.11.2001 and 15.2.2002, placing on record the frequency profile of the regional grid and state of drawal by the constituent States in the Southern Region for the period ending 31.10.2001 and 31.1.2002 respectively to enable the Commission to take an appropriate view on compliance of the Commission's directions.

7. The Karnataka Power Transmission Corporation Ltd. (hereinafter referred to as "the respondent" filed an application (No.80/2001) for review of directions contained in the order dated 3.8.2001. The review application was dismissed vide Order dated 6.11.2001 as the grounds for review urged in the application were outside the scope of order XLVII of the Civil Procedure Code.

8. Three "one Member" benches of the Commission visited various REBs, including SREB, Bangalore on 2.11.2001 for an on-the-spot study of the status of maintenance of various grids. In the Southern Regional Grid, representatives of SREB and SRLDC were heard by the Bench. During the process, the Bench noted that the frequency position in the Southern Region had worsened as compared to that in the corresponding months in 2000. The load shedding plans finalised at Operation Coordination Committee of the Southern Regional Electricity Board meetings were not followed by the state utilities in the region. The low frequency operation in Southern Regional Grid led to a grid disturbance on 11.9.2001 at 12.54 hrs in which Andhra and Karnataka States were affected

severely resulting in total black out of the systems for many hours. The report submitted by the one-member Bench was considered by the Commission.

9. Meanwhile, another application (No.24/2002) filed by the respondent on 8.1.2002 for review has also been dismissed vide order dated 21-3-2002 in view of the provisions of Rule 9, order XLVIII of the Code. However, this application disclosed that the State Government of Karnataka (Energy Department) through G.O. No.DE: 188 Feb. 2001 dated 23.10.2001 issued under Rule 133 of the Indian Electricity Rules, 1956, (hereinafter referred to as the Electricity Rules), notified under the Indian Electricity Act, 1910 (hereinafter referred to as the Electricity Act) had permitted the respondent to operate the grid at a frequency of 50.0Hz. \pm 4%. The Commission noted that the State Government of Karnataka by GO No. DE:188 Feb. 2001 dated 23-10-2001 issued under Rule 133 of the Electricity Rules has permitted the respondent "to operate the grid at a frequency of 50 Hz \pm 4%". In other words, GO dated 23-10-2001 authorised the respondent to operate the grid, (which is an integrated transmission system of other states in the Region) within the frequency variation band of 52.0 Hz to 48.0 Hz.

10. The notice of the Commission was also drawn on a well-established principle of statutory interpretation that the statutory provisions are to be interpreted harmoniously so as to avoid any conflict between different statutory provisions and to give effect to all the provisions. This principle pre-supposes absence of any conflict while construing the statutory provisions. When so interpreted it can be safely concluded that regulation of inter-state transmission

falls within the exclusive jurisdiction of the Commission. It is the regulation of transmission, distribution and supply of electricity within the State that falls within the powers of the State Government. On this consideration, the drawals of electricity from the integrated regional grid are to be regulated by the principles prescribed by the Commission in the IEGC and not under the Electricity Rules or the GO dated 23-10-2001 issued by the State Government of Karnataka. In case, however, the State Government considers it appropriate to operate the State Grid at a frequency beyond the standard frequency, it shall require to be isolated from the regional grid and operate its system on “stand alone” basis in which case it will be deprived of power generated by the Central sector generating stations. This may cause further scarcity of power in the State.

11. Yet another principle of statutory interpretation that was brought to the Commission’s notice was that “generalis specialibus non derogant”, which means that the general provisions yield to specific provisions. This is based upon the reason that in passing a special Act, Parliament devotes its entire consideration to a particular subject. The Electricity Act is a law of general nature, which deals with the provisions relating to transmission, distribution and supply of power by the licensees within the limited areas in the State and whose object is to lay down law “relating to the supply and use of electrical energy”. The electricity Act does not confer any powers on the State Government in relation to operation of the grid. On the contrary, the Act contains special law, which, inter alia, confers power of regulation of inter-state transmission of electricity on the Commission. Based on this consideration either, the provisions of the IEGC approved by the Commission

for regulation of inter-state transmission or other directions given by the Commission on the subject, override the Electricity Rules or the GO issued thereunder. In fact, this aspect is made explicit by Section 52 of the Act, which mandates that “save as otherwise provided in section 49, the provisions of this Act shall have effect notwithstanding anything inconsistent therewith contained in any enactment other than this Act”, Section 49 of the Act provides that the provisions of the Act are not applicable where the provisions of Consumer Protection Act, 1986 and Atomic Energy Act, 1962 apply.

13. On different considerations, we prima facie came to the same conclusion that the rules regulating the inter-state transmission system contained in the IEGC should prevail over the Electricity Rules, in case of conflict. All the players involved in the inter-state transmission of electricity including the respondent are mandated by law to be bound by provisions of the IEGC, including those reproduced at para 2 herein above.

14. In view of the directions as noted above in para 5, an affidavit was filed on behalf of SRLDC on 15.11.2001 stating that the beneficiaries in the Southern Region, which included the respondent, continued to overdraw at a low frequency and that they were reluctant to shed load when so advised, as a result of which, the grid frequency of the region remained below 48.5Hz. for 78.9% of time in August 2001, 83.21% of time in September 2001 and 43.4% of time in October, 2001. Another affidavit was filed by SRLDC on 31.12.2001. The status of overdrawals by the constituents of Southern Region during August 2001 to

December 2001 as contained in the two affidavits filed on behalf of SRLDC is as under:

OVERDRAWS AT LESS THAN 48.5 HZ/49.0 HZ (In MU's):-

Month	APTRANSCO	KPTCL	KSEB	TNEB
Aug. 2001	11.44	36.26	7.49	45.53
Sep.2001	12.25	24.63	10.53	25.42
Oct.2001	2.02	43.72	5.64	39.02
Nov.2001	7.91	78.26	7.94	19.60
Dec.2001 (up to 23.12.2001)	4.96	44.79	8.32	15.32
TOTAL	38.58	227.66	39.92	144.89

15. It was placed before the Commission that the Electricity Rules have been framed by the Central Electricity Board by virtue of powers under Section 37(1) of the Electricity Act which provides as under:

“Power of Board to make Rules: - (1) The Central Electricity Board may make rules, for the whole or any part of the territories to which this Act extends, to regulate the generation, transmission, supply and use of energy and generally to carry out the purposes and objects of this Act”.

16. The Central Electricity Board has no doubt power to make rules, inter alia, to regulate transmission, supply and use of energy. However, Rule 55 of the Electricity Rules framed under Section 37 (1) of the Electricity Act enjoins upon the supplier of electricity not to permit the frequency of an alternating current supply to vary from the declared frequency (which is 50.0 Hz) by more than 3 percent, except with the written consent of the consumer or with the previous sanction of the state government. The above means that in the normal course the

alternating current supplied to the consumers should be within the frequency band of 51.5 Hz to 48.5 Hz. Rule 133 of the Electricity Rules gives a general power of relaxation of certain provisions of the Electricity Rules to the State Governments. The rule enables the State Governments to relax the frequency band for power supplied from generator(s) to the consumer(s). There is no enabling provision in the Electricity Rules to authorise the State Government to operate its own state grid which is part of a integrated regional grid comprising of power system of various constituent state system. The operation of the grid at low frequency has devastating effect since it has the potential to jeopardise the security and safety of the entire region. This aspect of the matter has already been dealt with by us at paras 1 & 2 supra.

17. We now refer to the circumstances leading to issue of show-cause notices. Through affidavits filed by SRLDC, it was made out that respondent was over drawing heavily from the regional grid. On consideration of the above noted facts, particularly those brought out in paras 8 to 16 supra, a show-cause notice was issued to CMD, Karnataka Power Transmission Corporation Limited, on 14-2-2002 directing him to explain why action under Section 45 read with Section 47 of the Electricity Regulatory Commissions Act, 1998, be not taken for repeated non-compliance of the provisions of Indian Electricity Grid Code (IEGC) and the directions of the Commission contained in its order dated 3.8.2001 in Petition No.93/2000 and other related petitions, filed by SRLDC. The State Government was also directed to explain the circumstances leading to issue of GO DE: 188 Feb 2001 dated 23.10.2001. Both the show-cause notices were listed for hearing

on 21.3.2002. The relevant extracts of Sections 45 and 47 of the Electricity Regulatory Commissions Act, 1998 are given below:

QUOTE:

Section 45: Punishment for non-compliance of directions given by a Commission

(1) In case any complaint is filed before the Commission by any person of if the Commission is satisfied that any person has contravened any directions issued by the Commission under this Act, rules or regulations made thereunder, the Commission may after giving such person an opportunity of being heard in the mater, by order in writing, direct that, without prejudice to any other penalty to which he may be liable under this Act, such person shall pay, by way of penalty, which shall not exceed rupees one lakh for each contravention and in case of a continuing failure with an additional penalty which may extend to rupees six thousand for every day during which the failure continues after contravention of the first such direction.

(2) Any amount payable under this section, if not paid, may be recovered as if it were an arrear of land revenue.

Section 47: Offences by companies

(1) Where an offence under this Act has been committed by a company, every person who at the time, the offence was committed was in charge of, and was responsible to the company for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly.

Provided that nothing contained in this sub-section shall render any such person liable to any punishment provided in this Act if he proves that the offence was committed without his knowledge or that he has exercised all due diligence to prevent the Commission of such offence.

(2) Notwithstanding anything contained in sub-section (1), where an offence under this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any

neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly.

Explanation – For the purposes of this section

- a) “company” means any body corporate and includes a firm or other association of individuals; and
- b) “director” in relation to a firm, means a partner in the firm.

UNQUOTE

18. While issuing show-cause notices, Officer-in-charge SRLDC was directed to supply copies of the affidavits filed on behalf of SRLDC to the State Government as also the respondent. It has been confirmed on behalf of SRLDC that the copies of the affidavits were actually furnished to the respondent as also the State Government.

19. The respondent as also the State Government were granted liberty to file their replies in response to the notices. It was also directed that the authorised representatives of the State Government, not below the level of Joint Secretary to the State Government and the Director in case of the respondent should be present on the date fixed for hearing i.e. 21.3.2002. No reply was filed either by the State Government or the respondent. We further noted that the officers directed to be present in person had also not appeared on 21.3.2002. Shri S.S. Naganand, Advocate, who appeared before us on the date fixed, stated that neither the State Government nor the respondent intended to defy the directions of the Commission. Nevertheless, the absence of the concerned officers was not explained by the learned counsel.

20. The representative of SRLDC demonstrated that the respondent overdrew power from the regional grid during August 2001 and onwards. He stated that during the month of March, 2002 itself there were huge overdrawals by the respondent, despite the fact that the frequency was hovering around 48.0 Hz; much below that prescribed in the IEGC or as directed by the Commission. The representative of SRLDC stated that in March, 2002, there occurred five grid separations in the region because of operation of the grid at a low frequency and any one of them could prove to be disastrous as the system almost came at the edge of a major grid disturbance.

21. Shri S.S. Naganand, Advocate appearing for the respondent stated that a writ petition No.12404/2002 under Article 226 of the Constitution of India was filed on 19.3.2002 before the Karnataka High Court against the show-cause notice dated 14.2.2002, but on a query from the Commission, he said that the writ petition had not been listed for hearing before the Court. Under these circumstances, learned counsel prayed that the Commission should not proceed with the hearing on show-cause notice. Learned counsel, in response to another query by us, stated that the notice of the Commission dated 14.2.2002 had not been stayed by the High Court. As mere filing of a writ petition before the High Court did not debar the Commission from proceeding with the hearing on show-cause notices, we heard the matter and reserved order.

22. After the hearing was over, but before the order was issued, Shri R.P. Wadhvani, Advocate reported through his letter dated 22.3.2002 that the show-cause notice dated 14.2.2002 had been stayed by the High Court on that date. Subsequently, on 4.4.2002, a certified copy of the order dated 22.3.2002 made by Karnataka High Court has also been filed by Shri Wadhvani. We hope that facts of the case leading to the show cause notice and the hearing that followed on 21.3.2002 by the Commission, was brought to the notice of the High Court. Nevertheless, in view of the stay of the show-cause notice dated 14-2-2002 granted by the High Court on 22.3.2002, we have only recorded the background facts leading to show-cause notice and the factual position/statements of the parties. We have not recorded any findings on the merits of the submissions made by the parties. We have also refrained from recording any decision under Section 45 read with Section 47 of the Act, for which we shall be guided by the directions of the High Court in the writ petition.

Sd/-
(K.N. Sinha)
Member

Sd/-
(G.S. Rajamani)
Member

Sd/-
(D.P. Sinha)
Member

New Delhi dated the 16th April, 2002.