

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

1. **Shri D.P. Sinha, Member**
2. **Shri G.S. Rajamani, Member**
3. **Shri D.V. Khera, Member (EO)**

Petition No.26/2001

In the matter of

Exemption from keeping the Free Governor in continuous operation
in the Power Plants belonging to Neyveli Lignite Corporation Ltd.

And in the matter of

Neyveli Lignite Corporation Limited. ... Petitioner

VS

Power Grid Corporation of India Ltd. & Others ... Respondents

The following was present: 1. Shri R. Suresh, CE
(Comml), NLC.

**ORDER (DATE OF HEARING
10-05-2001)**

In this petition the petitioner, Neyvelli Lignite Corporation Ltd. has requested for exemption from free governor action in operation, till such time the grid frequency is maintained at a reasonable and safe level. It has further prayed that an expert group be formed to study the issue in its entirety and

make appropriate recommendations for a decision by the Commission. The petitioner has also prayed that this Commission may consider issuing suitable directions to the Electricity Boards to maintain the frequency at the desired level. This petition is listed before us for admission. The facts leading to filing of this petition are stated in the succeeding paragraphs.

2. The Commission in Petition No. 1/99 had the opportunity to consider with the assistance of the technical experts, the question of operating the generating units with turbine speed governor. On consideration of the submissions made by the parties and the views expressed by the experts, the Commission felt that a provision for free governor action in the generating units is absolutely necessary for the overall grid control. Therefore, in its order dated 30-10-99, the Commission directed that the thermal units with a capacity of 200 MW and above should be put under free governor. However, while issuing such directions the Commission had specifically granted liberty to any particular unit to approach it for exemption from the provisions regarding free governor for valid reasons. A major grid disturbance occurred in the Northern Region on 2-1-2001. Taking notice of the grid disturbance, the Commission had initiated *suo motu* proceedings to enquire into the incident. At the hearing it transpired that the free governor had not been restored even after expiry of more than one year after issue of the order dated 30-10-99. Therefore, the Commission directed restoration of the operation of free governor in 500 MW stations within one

month and within three months at other stations with capacity between 200 MW to 500 MW.

3. Neyveli Thermal Power Station-II owned by the petitioner consists of seven units, each of 210 MW capacity. Therefore, in accordance with the Commissions's directions noted above the petitioner was required to install free governor at each of the units. This having not been done, the petitioner has filed this petition seeking exemption from free governor operation as noted above. According to the petitioner, in view of the present conditions of the Southern regional grid which operates at very low frequency it is likely to face certain problems if the free governors are put into action without any perceptible overall improvement in the maintenance of grid parameters. At the hearing before us Shri R.Suresh, the representative of the petitioner stated that the petitioner is willing to restore free governors but under the present conditions of wide frequency fluctuations in the Southern grid, it is difficult for it to implement the same. According to the petitioner, unless the steps necessary for maintenance of frequency at a reasonable level are taken, implementation of free governor would lead to problems on boiler side, thereby necessitating control of frequency through manual intervention. The representative of the petitioner stated that it had been highlighting the problems at various fora.

4. The Commission while directing restoration of free governor took notice of the difficulties that have been narrated by the petitioner in the present petition. In

fact, the petitioner had raised similar issues in its response in petition No. 1/99. The issues raised were duly taken into account by the Commission while giving directions for restoration of free governor, as would be seen from the following extracts from the order dated 30-10-99 in Petition No.1/99 on I.E.G.C.

"The question of operating each generating unit with turbine speed governor was considered by us with the support of our technical experts. A number of suggestions have been made by various respondents like (a) free governor shall be "normally in operation" in place of "always in operation"; (b) it may not be possible in existing units; (c) special treatment to nuclear units; and (d) exclusion of units embedded in the intra-State transmission system.

We are convinced that provision for free governor action in generating units is desirable for overall grid control. Though frequency control in the present conditions of the power system operation may not be possible with governor action alone and other means like load shedding, manual intervention etc. may also be necessary, yet the necessity of invoking the free governor action cannot be undermined. We also understand that governor is always an integral part of the turbine supplied to the generating unit. The problem really is that these governors have not been put to use by generating units. It is also understood that the problem of such discontinuation of use will be more pronounced in turbines of older vintage. Hence, activating existing governors in turbines of older vintage is a task for which suitable time may have to be allowed. We also understand that there should be no difficulty in activating the governor function on units of recent vintage. It is understood from CEA's publication of compendium of power generation plants - July 99 that the plants which are 200 MW size and above constitute about 46% of the total installed capacity. Most of these units have been installed in 1980s and later and shall have no problem in activating governors for frequency control. Accordingly we direct that to begin with the stipulation regarding free governor shall apply to thermal units with a capacity of 200 MW and above, with immediate effect. This condition will also apply to all reservoir based hydro stations. For N.E. region, this condition will apply to units of 10 MW capacity and above. Keeping in view the time required to activate free governors, CTU may separately announce the time limit by which all other units should put free governors in action. We also grant liberty to any particular unit to approach the Commission to get exempted from the provisions regarding free governor for valid reasons. As regards the plea of Nuclear Power Corporation to provide a separate dispensation in view of safety considerations and special characteristics of Nuclear Plants, we have considered the matter and it is appropriate that Nuclear Units be permitted to continue operating in turbine

follow reactor' mode. Since Nuclear capacity is small compared to regional capacity, such special dispensation will not make any significant difference. CTU is directed to accordingly modify clause 4.8.c so that (a) thermal generating units of 200 MW and above (10 MW and above for N.E. region) and reservoir based hydro stations need only to be covered by this clause immediately; (b) for all other units CTU may separately announce time limits for putting free governor in action. As regards suggestion of substituting the words "always in operation" by the words "normally in operation", keeping in view the purpose of this provision and to get the advantage of governor action for frequency control, the words "always" is more appropriate than the words "normally in operation."

5. On careful consideration of the matter, we are of the considered view that in the interest of maintenance of grid discipline, the operation of free governor is imperative since it is one of the important steps towards maintaining proper grid frequency. We do not find any merit in the submission made on behalf of the petitioner that implementation of free governor action for the units owned by the petitioner should be held in abeyance. It is the perception of the Commission that restoration of free governors will lead to improvement of grid discipline and maintenance of proper grid frequency. We are not convinced by the petitioner's submission that till improvement of grid frequency is achieved the free governor action cannot be implemented and if accepted will end in a vicious circle. In our view, restoration of free governor is a tool for improving the grid frequency profile. Accordingly, we find no substance in the submission made on behalf of the petitioner to grant exemption from the free governor action. The direction for restoration of free governor was issued after the matter was examined with the assistance of technical experts. Therefore, neither do we consider it necessary to constitute another expert group for further study of any of the aspects, as prayed for by the petitioner. As regards the directions to the constituents for

maintenance of the frequency at the desired level, it is noted that some petitions have been filed by SRLDC, seeking similar directions. These petitions are proposed to be heard separately and the appropriate directions shall be issued. In view of this, we do not consider it proper to issue any directions to the beneficiary States based on the prayer contained in the present petition, particularly so when no specific instances of violation of Grid Code have been brought to the notice of the Commission by the petitioner.

6. In view of the foregoing, the petition is dismissed at the admission stage. The directions of the Commission for restoration of free governors shall be complied forthwith.



(D.V. Khera) ~
Member (EO)



(G.S. Rajamani)
Member

" (D-PrSinha)
Member

New Delhi Dated:

10-5-2001.

