

**ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION
HYDERABAD**

Dated:15.03.2004

Present

Sri. G.P.Rao, Chairman
Sri K.Sreerama Murthy, Member
Sri. Surinder Pal, Member

**R.P. No. 13 of 2003
IN
O.P.No. 402 of 2002**

Between

M/s. Andhra Pradesh Power Generation Corporation Limited
Vidyut Soudha, Hyderabad. Khairatabad, Hyderabad - 500 082.
Represented by its Chairman and Managing Director ...**Petitioner /Respondent**

AND

M/s. Transmission Corporation of Andhra Pradesh Limited,
Vidyut Soudha, Khairatabad, Hyderabad - 500 082.
Represented by the Chairman & Managing Director ...**Respondent /Petitioner**

This petition coming on for hearing on 08.12.2003 in the presence of Sri S. Ravi, Advocate and J. Parthasarthy, Chairman and Managing Director, for the Petitioner and Sri P.M.K.Gandhi, Director (Regulatory Affairs and Coordination), Sri A.Venkateswar, Director (Finance) and Sri M.Hanumath Sastry, Chief Engineer, (Commercial and IT), for the Respondent and having stood over for consideration to this day, the Commission delivered the following:

ORDER

This is a petition seeking review of the orders of the Commission in O.P.No.402 of 2002 dated 24.03.2003 giving consent to the power purchase agreement (PPA) entered into between Respondent and petitioner.

(2) The petitioner herein will be referred to as APGENCO while the respondent herein will be referred to as APTRANSCO.

(3) Following key issues were raised by APGENCO and responded by APTRANSCO. The Commission discusses each of these issues in the following paragraphs:

Key Issues:

i. Srisaillam Left Bank Power House (SLBH):

APGENCO's submissions:

The objectives of the Srisaillam Left Bank Power House (SLBH) as envisaged have been fully complied with for the following reasons:

- (a) Additional seasonal energy can be generated from Left Bank avoiding spillage of water that could have otherwise taken place;
- (b) Additional peaking support up to 900 MW can be provided for varying hours from the Left Bank Power House, operating in conventional mode, in addition to what the Right Bank Power House can provide.
- (c) The units can operate in pump mode also, partially if the level at Nagarjunasagar in excess of 531.5 Ft, and fully if the level is 550 Ft and above. The ability to operate the Units in pump mode was also established. The extent of operation would depend on the hydrology and levels at Nagarjunasagar as per original scheme.

Further, the continued and full scale pump mode operation has not been possible only on account of poor hydrology whereby water levels at Nagarjunasagar remained well below 531.5 Ft. and for no other reason.

Therefore the petitioner is entitled to payment of fixed charges for SLBH also.

APTRANSCO's responses:

Memo No.2003 dated 07-05-2003 issued by Irrigation & CAD department, GoAP, provides the following clarification:

“APGENCO is free to operate units at either of the stations at Srisaillam at its sole discretion so as to derive maximum possible benefits without affecting the interests of irrigation and within the provisions of daily releases of water as per tables prepared by COKRIP.”

The results of simulation studies carried out with historical data and inflow data of Irrigation department to estimate the peaking capacity of Srisaillam Complex reveals that the capacity equivalent to seasonal surplus of 1000 MU can be considered and capital cost equivalent to that capacity may be considered. The unit cost for this energy may be fixed.

Commission's analysis:

It is pertinent to go into the background based on which the Srisaillam Left Bank Power House was conceived.

The Project Report for SLBH envisages installation of nine (9) numbers reversible type pump-turbine motor generating units of total capacity of 990 MW.

The Project Report envisaged that the changing scenarios of water use at the upstream will lead to diminishing of total water availability and release pattern will be dictated fully by irrigation needs.

The Project Report further says that in this context, it is essential to install reversible pump-turbine units at SLBH, which would ensure confirmed utility of the power to provide peaking capacity. It is also stated that based on the scenarios discussed, it was assessed that SLBH would operate in conventional mode upto 2000 AD. Without pump-turbine installation, the power station would lose its capacity value and its utility would only be in terms of seasonal energy generation”.

From the above, it is obvious that the seasonal surplus of 1000 MU cannot translate into peak power capability during non-monsoon period when the system demand will be high.

It is therefore necessary that pump mode operation should be established as envisaged in the project report for consideration of capacity from this plant to allow fixed charges in respect of the plant.

In the meantime, APGENCO has come up with a proposal of constructing a weir of 1 TMCFT capacity with the approval of the Irrigation department to facilitate pump mode operation even when the reservoir level at Nagarjunasagar dam is below 531.5 Ft. The Commission therefore is of the view that the capacity from the plant could be considered after the pump mode operation is established. Till such time energy generated in excess of the capacity of the Srisailem Right Bank Power House (SRBH) (during the surplusing period) shall be paid for at the agreed price with the consent of the Commission.

However the Commission takes note of the clarification issued by GoAP permitting water drawal from either SLBH or SRBH at the discretion of APGENCO provided it is ensured that the reservoir level does not fall below 834 Ft. and power draft at SSLM let into Nagarjunasagar is limited to irrigation needs at Nagarjunasagar dam and Krishna delta.

Considering this, the Commission further directs that energy generated from SLBH over and above the effective capacity of right bank power house from the live storage to meet the peak demand during non-monsoon months shall also be paid at the rate mutually agreed upon and consented by the Commission.

ii. Depreciation:

APGENCO's submission:

The depreciation amount is not adequate to repay the loan amount and discharge the interest liability of Vidyut/Pension/PF bonds. Return on equity (RoE)

which is to be retained by the enterprise is not to be used to meet any liability. The servicing of the pension/PF liability was placed on APGENCO on the clear understanding that the required funds will be generated through tariff.

APTRANSCO's response:

The depreciation is allowable as per Central Electricity Authority (CEA) guidelines on the book value of the assets. APGENCO shall meet all its debt repayment obligations from the depreciation being allowed to APGENCO including those arising out of the loans raised for creation of assets, pension and PF bonds. The interest on other loans used for creation of new assets is a pass-through in the tariffs. Further, any liability on account of interest on Pension bonds in excess of that specified in Annexure I to Commission's order shall be allowed as a pass-through in the tariff on a year to year basis.

Commission's analysis:

The Commission, in its order dated 24th March 2003 on APGENCO has indicated that the PPA should shift to norms from the reimbursement basis. Apart from infusing discipline in the expenditure, this will introduce a level playing field with the IPPs. As explained in detail in the above order, the up-valuation of assets at the time of first transfer scheme passed on some additional liabilities and increased the value of equity of APGENCO. The Commission has allowed both depreciation and ROE on the basis of revalued assets and the matching liability. ROE on revalued assets provided by the Commission enables APGENCO to service its other liabilities such as Pension Funds / Vidyut Bonds. Even though RoE was not a component in the signed Power Purchase Agreement (PPA), the Commission felt it appropriate to introduce this component along with other norms into the PPA. By facilitating APGENCO to meet the interest liability of Vidyut / Pension / PF bonds by providing return and depreciation on the up-valued numbers, the Commission balanced the interest of both the generator and the consumer. APGENCO would normally be entitled for the return only on equity based on the equity prior to up-valuation. Return on up-valued equity was considered to enable APGENCO to meet the interest liability of Vidyut / Pension / PF bonds along with depreciation. Annexure-I of the Commission's

order clearly demonstrates that APGENCO has sufficient funds to meet its liability. Further, the Commission has indicated under para 100 of the order under review stating “any liability on account of interest on pension bonds in excess of that specified in the annexure will be allowed as a pass through in the tariff of APGENCO on a year to year basis. Similarly, any fall in the liability on this account will be adjusted in the tariffs on a year to year basis”. APGENCO can claim if there is any increase in pension liability.

iii. Operation & Maintenance (O&M) expenditure:

APGENCO’s submission:

The audited figure for 1999-2000 is Rs. 346.37 Crores towards O & M expenditure and on applying escalation on this base year figure works out to Rs.412.53 Crores for FY 03 and Rs. 437.28 Crores for FY 04. Further, these numbers are required to be escalated for the future years also instead of freezing the same for three years as there are wage revisions in APGENCO similar to that of APTRANSCO.

APTRANSCO’s responses:

The actual O &M expenditure for FY 2000 as per PPA is Rs. 300.20 crores. Based on this, O &M expenses work out to Rs. 357.92 Crores for the year 2002-03 at an escalation of 6% p.a. The O &M expenditure of Rs. 357.92 Crores only is agreeable to APTRANSCO.

Commission’s analysis:

The Commission in its order has explained in detail as to how the O &M expenses of Rs. 357.92 crores have been arrived at. As it was explained in several places in the order, the Commission’s intention was to fix up norms for various components of fixed and variable costs. While fixing up the base number for O&M expenses, the Commission examined four options and chose the one, which was close to real expenses and agreed to by both APTRANSCO and APGENCO in the PPA. Pruning this to audited expenditure will defeat the very purpose of fixing up the

norms as the Commission expects APGENCO to exercise proper control over its expenditure instead of claiming the actual expenditure as pass-through. Similarly any saving on this will also be counted to the credit of APGENCO. Hence the Commission considers Rs. 357.92 Crores as a reasonable O &M expenditure for FY 03.

The Commission had frozen this expenditure for a period of three years, as it did not have the sufficient data to study the trend of expenditure over a period of time. APGENCO has now submitted the audited expenditure for the financial years from 2000 to 2002 and the provisional numbers for the financial year 2002-2003. The trend shows a steady increase of expenditure in the employee cost and repairs and maintenance. For the reasons mentioned in the previous paragraph, the Commission does not agree for the reimbursement of actual expenses. But at the same time, it recognises the need to provide for escalation for each year. Hence the Commission approves escalation at the prevailing inflation rate of 4% p.a.

(4) Other issues:

Apart from the above key issues, the following other issues were also raised by APGENCO and duly responded by APTRANSCO.

a. Fixing up 0.2 class Energy meters:

APGENCO has requested for the extension of time limit for fixing meters upto 31-03-2004 as meters in large numbers have to be procured and installed. APGENCO has insisted that the boundary for exchange of power between APGENCO and APTRANSCO shall be shifted from the outgoing feeders, as at present, to the HV side of the generating/ station transformers once the 0.2 class meters are installed as stated above.

APTRANSCO has agreed for the provision of 0.2 class meters on the High Voltage side of Generator Transformers and Station Transformers and to consider the High Voltage (HV) side of GTs/STs as the boundary metering.

The above arrangement has already been approved by the Commission and communicated vide office letter No. APERC / Dir (Engg) / DD-Tr / F: Grid Code / D. No. 1788 / 2003 dated 26-07-2003.

The Commission on considering above facts permits extension of time limit for APGENCO to install 0.2 Class energy meters on the High Voltage side of all Generator Transformers / Station Transformers on both sides of Inter Bus Transformers (IBT) in all APGENCO switchyards upto 31-03-2004. As directed earlier, APTRANSCO / APGENCO have to carryout energy audit at all APGENCO Thermal Stations, through an independent agency by 31-07-2004 and submit a report to the Commission.

b. Station operating parameters:

APGENCO in its review requested for the adaptation of operating norms as approved in PPA for FY – 03, for FY -04 also until the shifting of boundary meters from the feeders to HV side of Generating Transformers.

APTRANSCO has communicated that the operating parameters shall be as per Annexure II to the Commission's order under review or actuals whichever is less.

Restricting the Station Heat Rate (SHR) to actuals will defeat the purpose of norms as it does not provide any incentive to the generator to improve over the norms. Hence the Commission advises APGENCO to adopt operating parameters as per Annexure II to order under review, dated 24.03.2003.

However in view of the fact that the Commission permits extension of the time limit for shifting the boundary metering from the outgoing feeders on to the High Voltage side of all Generator Transformers / Station Transformers and the Inter Bus Transformers in APGENCO switchyards till 31-03-2004, the Auxiliary Consumption for FY 2004 shall be permitted as provided in PPA for FY 2002-2003.

c. Applicability of Guidelines for pricing power:

The tariff order for FY 2003-04 has adopted the numbers pertaining to depreciation and Return on Equity for APGENCO for FY 2002-03. The Commission's view was to approve the PPA of APGENCO from FY 2002-03 onwards and introduce incentives from FY 2003-04. Para Nos. 95 and 98 of the Commission's order dated 24th March 2003 on APGENCO are to be read as applicable from FY 2002-03 instead of FY 2003-04.

(5) In the result the Petition is allowed in part. The petitioner is directed to come up with a proposal for payment of fixed charges in respect of Srisailam Left Bank Power House once the pumped mode operation is established. However, the petitioner is entitled to receive energy charges for the energy generated from Srisailam Left Bank Power House during surplussing period in excess of the capacity of Srisailam Right Bank Power House at the rate mutually agreed and consented by the Commission.

Further energy charges for the energy generated from Srisailam Left Bank Power House from the live storage during non-monsoon months to meet the peak demand, over and above the energy that can be generated with the effective capacity of right bank power house, shall be paid to APGENCO at a rate mutually agreed and consented by the Commission.

Petitioner is also entitled to escalation @ 4% for each year in respect of Operation & Maintenance expenditure revoking the condition of freezing the Operation & Maintenance charges for 3 years.

The Commission granted extension of time for the installation of 0.2 class energy meters on the high voltage side of all generator transformers / station transformers / inter-bus transformers in all APGENCO switch yards, upto 31-03-2004 and consequently the Commission permits the auxiliary consumption for the FY 2004 also as provided for in FY 2003.

The Commission is also modifying the order under review regarding applicability of guidelines on Return on Equity and depreciation as applicable from FY 2002-03 instead of from FY 2003-04 as mentioned in the order under review. The petition is allowed in part accordingly.

The APTRANSCO is directed to incorporate the alterations in the PPA as ordered above and submit the modified PPA for approval of the Commission.

This order is signed on this day of 15th March 2004.

Sd/-
SURINDER PAL
(MEMBER)

Sd/-
K.SREERAMA MURTHY
(MEMBER)

Sd/-
G.P.RAO
(CHAIRMAN)