

UPPCL failed to submit supplementary affidavit up to the stipulated time but submitted the same on 25.10.2005.

The applicant submitted his written submission on 10.10.2005 and reiterated the issue of admission of the review petition on the following grounds;-

i) The Hon'ble Commission in Para 28 of its Order dated 14.6.03 had stated that the proviso of midterm review of PPA is suggested to enable the contracting parties i.e. UPPCL and the company to review the terms of the agreement on the basis of mutual acceptability and considerations but in the suggested proviso for modification of Para 15.1 of PPA, the Hon'ble Commission confers the right of mid term review of the PPA to UPPCL alone which is an apparent error.

ii) As per the then Govt. of India guidelines, the GOI vide its resolution dated 22.10.1991, longer duration of 30 years in the first instance and subsequent renewals of a longer duration of 20 years for the stability in the operation was allowed to the licensee to operate. This longer period was considered essential to ensure the stability in the operation of the license. Therefore the provision of midterm review of the agreement rebels against the afore-mentioned guidelines of GOI.

However UPPCL have prayed vide their supplementary affidavit dated 25.10.2005 that in light of the provisions of order 47, rule 1 of Code of Civil Procedure of 1908 the Hon'ble Commission may be pleased to dismiss the review petition in question because of the following reasons:-

- i. The applicant has failed to produce any new matter for evidence that was in the knowledge or could not be produced by the applicant at the time when order dated 14.6.2003 was passed by the Commission.
- ii. The applicant has failed to establish any mistake or error apparent on the face of record in the order dated 14.6.2003 passed by the Hon'ble Commission.
- iii) The applicant has further failed to bring on record any other sufficient reason that may necessitate review of its order dated 14.6.2003 by the Commission.

The Commission observed that UPPCL vide their counter affidavit dated 25.11.2003 and dated 9.8.2005 in the matter of review petition did not raise the issue of its maintainability and of late the learned counsel of UPPCL prayed the Commission during the hearing in the matter on 9.8.2005 to permit UPPCL to submit supplementary affidavit in respect of the issue of admission. The Commission has also observed that the argument submitted by the applicant, regarding inconsistency between suggested proviso for clause 15.1

of PPA and para 28 of order dated 14.6.2003 and his apprehension of uncertainties due to midterm review in the terms and conditions of PPA, satisfy the requirements of Code of Civil Procedure 1908 (rule 1 of order 47) as quoted above. The Commission also feels that the practice of raising the issue of admissibility during the course of hearings, subsequent to the first hearing, practically jeopardizes the process of law since affirmation of non admissibility during the course of any of the hearings will naturally deprive the applicant of fair chance to defend his case.

The Commission, in view of the argument submitted by the applicant and keeping in mind other relevant factors such as whittling down the risk of uncertainty faced by the developer in respect of the terms & conditions of PPA and Tariff that may cause prolonged legal wrangle and the interest of power deficit state, confirms the de-facto admission of the review petition.

The applicant indicated the progress of the project works at site as on 30.9.2005 as per his affidavit dated 10.10.2005 as follows :-

a. *Progress of Infrastructure Works*

All required Infrastructure Works viz. Camp Facilities including Offices, Canteens, Residential Accommodation, Workshops, Stores, Diesel & Fuel Storage Facilities, Water Supply System, Communication System, Hospital & Medical Facilities, Approach Roads (22 Kms) and Adits (6Kms) etc. have been completed.

b. *Progress of Main Civil Works*

Diversion Barrage

All civil works including excavation and concreting have been completed and the finishing work is in progress.

Intake & Sedimentation Chambers

All civil works including underground excavation and concrete lining along with steel liners in hopper and flushing duct of Sedimentation Chambers No. 1 & 2 have been completed.

Head Race Tunnel

Underground excavation of Head Race Tunnel (HRT) in the entire length of 11,343 m has been completed and concrete lining has been completed in a length of 9,646 m.

Surge Shaft

Underground excavation of Surge Shaft including widening of Surge Shaft pilot to full section along with concurrent supports has been completed in the entire length of 143 m and concrete lining has been completed in a length of 130 m.

Pressure Shaft

Underground excavation of the Pressure Shaft has been completed in the entire length of 1,511 m and concreting and steel lining has been completed in a length of 1,374 m.

Power House Complex

Underground excavation of the Power House Complex has been completed and concreting is nearing completion. Concreting of columns and crane beams in erection bay, Unit I, Unit II, Unit III & Unit IV has been completed. Concreting of cooling water sump and columns & slabs in control room has been completed. In Transformer Hall, concreting of GIS floor slab has been completed.

Tail Race Tunnel

Underground excavation has been completed in the entire length of 2,019 m and concreting has been completed in a length of 1,532 m.

Pot Head Yard

Underground excavation has been completed and concreting is nearing completion. Concreting of Gantry Tower, Cable Duct, D. G/ Control Room structure, etc. has been completed.

c. Progress of Hydro Mechanical Works

The fabrication and erection of Hydro Mechanical Equipment for the Diversion Barrage, Intake & Sedimentation Chambers and other works has been substantially completed and the progress on remaining equipment is satisfactory.

d. Progress of Electro Mechanical Works

Approximately 60 % of supplies of entire Plant and Equipment viz. Turbines, Generating Plant Equipment, GIS & Cables and other components have been received at site and balance are in advance stage of manufacture/ supply. The erection of Electro Mechanical Equipment is progressing satisfactorily.

The Commission in view of the existing power crisis in the State had enquired vide its order dated 29-07-2005 whether the applicant can manage to prepone the date of commissioning to July 2006. Simultaneously UPPCL was also asked whether they can prepone the commissioning of the 400 KV Associated Transmission Lines in tune with the developer. The idea of preponement of commissioning schedule was that Vishnu Prayag HEP is a run-of-the-river scheme which will get the benefit of plentiful discharge during monsoon period rather than in winters. Therefore, if by adding little more efforts the commissioning of Vishnu Prayag HEP and 400 KV Associated Transmission Line could be preponed to July 2006, the State will harness the

benefit of monsoon energy which will otherwise be wasted if the dates of commissioning as per PPA are adhered to. The Commission also indicated that it may think of giving incentive for preponement equivalent to Liquidated Damages Under Article 9 of the PPA.

The applicant vide his written submission dated 10.10.2005 has intimated that necessary steps have been adopted to commence generation of power during monsoon period of the year 2006 and prayed that incentive for preponement of commissioning may be allowed equivalent to Liquidated Damages for delay in Commissioning mentioned under article 9.1 of the PPA. The applicant during the present hearing informed the Commission that it is trying to commission the unit 1 by March,2006 on best effort basis and prayed the Commission to allow incentive as mentioned above.

UPPCL also assured during the present hearing to prepone commissioning of the associated transmission lines and substations to Feb. 2006 on best efforts basis. However Sri S. K. Agarwal Director Finance UPPCL pointed out that, in view of non provision of incentive in the PPA along with the fact that the applicant will start getting early-benefit of Return on Equity, UPPCL can ill afford to bear the burden of the proposed incentive on account of the said preponement.

Finally both the parties to the PPA agreed to make best efforts to prepone the COD of the Vinshnu Prayag Hydro Electric Project and the associated 400 KV lines and Sub –Stations, to the extent possible without any incentive.

M/s J.P.V. L. vide their application dated 10.9.2003 moved petition under section 94 (f) of E.A. 2003 and under Regulation 138 of U.P.E.R.C. (Conduct of Business) Regulations, 2000 for review, clarification and modification of the order of the Commission dated 14.06.2003 in petition No. 26/2002. Accordingly the applicant has raised the following points which were contested by both the parties to the PPA during various hearings including the present one.

Therefore in exercise of the powers vested under sub section (f) of section 94 of Electricity Act-2003 and to regulate electricity purchase and procurement process of distribution licensee including the price at which electricity shall be procured from the generating companies through agreements for purchase of power for distribution and supply within the state in pursuance of sub section (b) of section 86 of Electricity Act-2003 and sub section (c) of section 10 of UP Electricity Reforms Act-1999 read with sub section(3) of section 185 of Electricity Act-2003 , the Commission, having considered the review petition and other documents filed by M/s J P V Ltd., objection / comments filed by UPPCL, its order dated 14.6.2003 in the petition No. 26 / 2002 in the matter of "Power Purchase Agreement and Escrow

Cover Agreement for 400 MW Hydro Electric Power Project”, and oral arguments of the applicant and UPPCL and also other vital issues connected with the PPA, passes the following orders:-

1. Jurisdiction and concurrence

Applicant submitted on pg. 6 of the review petition that the jurisdiction of State Commission is to enquire into the terms and conditions of PPA and other related agreements between the Generating company and SEB and/or its successor entities (such as UPPCL) under the applicable Electricity Laws.

This submission gives rise to the following issue:-

“Whether the jurisdiction of UPERC is limited only to enquire into the terms and conditions of PPA or it has jurisdiction to regulate electricity purchase and procurement processes of distribution licensees including the price at which electricity will be procured from the generating companies?”

During the hearing both M/s JPVL and UPPCL agreed that the Commission’s jurisdiction under section 86 (a&b) of E.A –2003 encompasses the issues related to terms and conditions of PPA, regulation of electricity, purchase and procurement processes including price at which electricity will be procured by the distribution licensees.

The issue of jurisdiction of CERC regarding regulation of tariff and determination of tariff has been discussed vividly in the order dated 11.8.2005 of CERC in petition no. 4/2005 filed by Nagarjun Power Project of Karnataka for approval of tariff in respect of 1015 MW Thermal Power Project (based on imported Australian Coal at New Mangalore Port) for supply of power to Karnataka Power Transmission Corporation Limited (90 %) and Kerala State Electricity Board (10%). The relevant portion of the order is reproduced below :-

“The Hon’ble Supreme Court, through a string of judgments has held that the term regulate is of broad import and very comprehensive in scope. In K.Ramanathan Vs State of Tamil Nadu (AIR 1985 SC 660), the Hon’ble Supreme Court held that “the power to regulate carries with it full power over the thing subject to regulation and in absence of restrictive words, the power must be read over the entire subject. It implies power to rule, direct and control and involves the adoption of a rule or guiding principal to be followed or making of rule with respect to the subject matter to be regulated.” In Harishankar Vs UP State Electricity Board (AIR 1973 All 74), while dealing with the term “tariff” Allahabad High Court held that the term tariff includes within its ambit not only the fixation of rates but also rules and regulations relating to it. It would thus imply that the Commission has full control while regulating tariff of the generating companies falling within clauses (a) and (b) of sub-section (1) of section 79 of the Electricity Act. The legislative history

bears ample testimony to the fact that expression “regulation of tariff” also includes determination of tariff within its meaning. Electricity Regulatory Commissions Act, 1998 (the 1998 Act) is the forerunner of the Electricity Act 2003. The functions similar to those assigned under clauses (a) and (b) of sub-section (1) of section 79 of the Electricity Act were entrusted to the Commission under clauses (a) and (b) of section 13 of the 1998 Act. The provisions corresponding to section 61 and 62 of the Electricity Act were contained in sections 28 and 29 of the 1998 Act. Section 28 of the 1998 Act enabled the Commission to determine by regulations the terms and conditions for “fixation of tariff”, inter alia, under clauses (a) and (b) of section 13 thereof. It would thus imply that “determination of tariff” or “fixation of tariff” by the Central Commission is relatable to its functions of “regulation of tariff” of the generating companies. The harmonious reading of section 61, 62 and 79 also leads to the same result. It is to be noted that the title heading of section 61 is “tariff regulations” but this provision empowers the Appropriate Commission to specify the terms and conditions for ‘determination’ of tariff. Further, section 62 which is the substantive provision for determination of tariff, empowers the Appropriate Commission to ‘determine tariff’.

In view of Section 86 of Electricity Act, 2003 and the above view of CERC the Commission has jurisdiction to regulate the electricity purchase and procurement process of distribution licensees including the price at which the electricity shall be procured from the generating companies.

2. Denovo Examination

Applicant submitted on pg. 9 of the review petition that in the light of principle laid down by the Hon’ble Supreme Court in case of WBERC V/s CESE Limited, the Commission would not denovo examine the cases which have already been considered by CEA.

This submission gives rise to the following issue:-

Whether Commission can denovo examine the issues covered in the PPA?

The Commission doesn’t intend to prolong the finalization of the PPA by denovo examining the various issues involved with the PPA. In fact in the interest of rationalization and regulation with an eye on saving the consumer from unwanted burden of unreasonable tariff, Commission had directed the parties to the PPA to submit documents/revised PPA/firm financial package etc. which were also required by CEA while issuing conditional concurrence under Section 31 of Electricity Supply Act, 1948.

3. Midterm review of the terms and conditions of PPA

Applicant submitted on pg. 10 of the review petition that the terms and conditions cannot, be subject to uncertainties due to mid term review of the terms and conditions of PPA.

This submission gives rise to the following issue:-

Whether or not Midterm Review of the PPA on the basis of mutual acceptability of the parties with prior approval of the Commission to safeguard the interest of the consumers, as per the Commission's Order dated 14.6.2003, will expose M/s Jai Prakash Power Ventures Ltd. to avoidable risk and uncertainties?

M/s JPVL vide their application dated 10.10.2005 have submitted the following argument in this context.

(i) Though the Hon'ble Commission itself states in para 28 of the order dated 14.6.2003 that the proviso of midterm review of PPA, is suggested to enable the contracting parties (i.e. UPPCL and the Company) to review the terms of the Agreement on the basis of mutual acceptability and considerations, the suggested proviso for clause 15.1 of the PPA confers this right to the UPPCL alone which militates against the mutual acceptability of the contracting parties (UPPCL and the Company) and appears to be an apparent error and, therefore, the suggested proviso needs to be deleted.

(ii) Further, the suggested proviso has a wide and far reaching implication. It provides for a midterm review of the terms of the Agreement. The Agreement cannot be reviewed during the course of implementation. Such a review seriously affects the solemn terms agreed to between the parties in the beginning based on which the Applicant made investments and entered into other commitments. There are risks and rewards attached to a project. As worded, UPPCL will review when it sees advantage to itself and would refuse to review if it sees disadvantage to itself. Such unilateral review by UPPCL provided in the suggested proviso is contrary to the mutual acceptability referred to in para 28 of the order dated 14.6.2003. The said proviso thus needs to be deleted as both the parties are bound by the terms and conditions of the PPA for the entire period of 30 years.

UPPCL while raising the issue of admissibility of the review petition vide their application dated 25.10.2005 have supported the view taken by the Commission in its order dated 14.6.2003 as under.

"Hon'ble Commission has consciously included the additional paragraph as contained in para 15.1 of PPA with a view to safeguard the public interest by providing review of the terms of the agreement after a period of 15 years from the date of the Commissioning of Unit 1 of the project."

During the hearing the applicant reiterated his earlier stand taken in application dated 10.10.2005.

The mid term review of the terms of the PPA on the basis of mutual acceptability of the parties with prior approval of Commission has been directed in the Commission's order dated 14-6-2003 to safeguard the public interest

The Commission has observed that

- *the other issues like capital cost, additional expenditure due to change in law and force majeure events misdeclaration, net head, overall efficiency, secondary energy charges, capital cost including IDC, deemed energy and incentive for availability, merit order dispatch and escrow arrangement have already been covered in the order dated 14.6.03*
- *the order dated 14.6.03 does not specify the ambit of review.*
- *The tariff for HEP will be automatically reduced due to repayment of debt therefore, the interest of the public has already been taken care of*
- *The clause suggested to replace the clause 15.1 of PPA at one place says that the extension of the term of 30 years by another 20 years will be on the basis of mutual settlement. Simultaneously it also provides for mid term review of PPA initiated by UPPCL after a period of 15 years from the date of commissioning of unit 1. Such proviso is contradictory in it self .*

In this context it is further added that an Inter-Institutional Group (IIG) with the MD, SBI as its convener and representatives from other financial Institutions and the Ministry of Power (Government of India) has been constituted to facilitate financial closure of private sector power projects. The IIG has been instrumental in getting financial closure for a large number of projects and its experience has shown that projects with competitive tariffs covered by long term power purchase commitments are essential requirement for funding by FIs. Rather than depending upon guarantees by Govt. the FIs evaluate projects on the basis of tariff, ability of the developer to bring in required equity and technical expertise for completing the project on time. Given the unique tariff structure characteristic of Hydro stations (of high tariff during the initial years which progressively decrease as debt gets repaid), a long term PPA which incentivises meeting timely payment by utilities in the initial years in return for low cost power in the later years is considered a major payment security mechanism.

Therefore the provision of midterm review in par 28 of the order dated 14.6.2003 is dispensed with.

4. Additional expenditure and change in tariff due to change in law or Force Majeure etc. and Uncertainty of approval of additional expenditure/change in tariff.

Applicant submitted on pg. 11 of the review petition that they are working on a cost plus basis and therefore all elements of capital cost including escalation need to be allowed and “to deny the escalation on account of additional expenditure like changes in law or Force Majeure etc. will be harsh to the project developers”

Further the Applicant submitted on pg. 11 of the review petition that , “to provide the escalation in cost due to change in law or force majeure etc .

shall be subject to approval by the Commission would mean that Hon'ble Commission can refuse to allow such additional expenditure as well as consequent enhancement of tariff and the project developers can not assume the risk of such uncertainties

The applicant vide his written submission dated 10-10-2005 has also submitted as below :-

i) That the approval from several authorities including UPPCL/Government/CEA and the Commission in respect of various components of cost/ revision of cost, additional expenditure, change in tariff including the revision of capital cost as per clause 3.4 of PPA, additional expenditure necessary to comply with any change in law prior to the commercial operation date of unit 4 as well as after the commercial operational date of unit 4 as per clause 6.9 (d) and 6.9(e) of the PPA, any change in tariff due to change in law as per clause 6.9 (h) of the PPA and any Extra cost for completion of project due to force majeure event as per clauses 14.3(d) and 14.3(e) of the PPA would require lot of procedural formalities to be completed to full fill requirement of various authorities, which might delay the matter and might come in the way of finalization of the tariff at appropriate time and therefore such additional cost and consequently the change in tariff etc . may be considered and approved by the Commission.

ii) "The change in Law is not in the control of the Company and the Company will have to legally comply with any change in law in future.. The parties agreed to the principles of Capital Cost and Tariff on the basis of the law of land prevailing as on the date of signing of the Agreement and the purchaser of the electricity has to bear the additional cost due to change in law. For example, if the sales-tax is levied on the sale of electricity, it will amount to change in law not covered elsewhere in the PPA and , therefore, must be allowed to be paid to the Company. The financial exposure and risk resulting from change in law cannot be taken over by the Applicant and will not be acceptable to lenders also. Modification of clause 6.9(f) of PPA is, therefore, not required."

These submissions give rise to the following issues :-

i) Whether the approval from various authorities including UPPCL/ Government /CEA and Commission would delay the matter and might come in the way of finalization of the tariff at appropriate time and speedy disposal of all other matters provided in the PPA.

With regards to aforesaid contention of the applicant that approval from several authorities including UPPCL/Govt./CEA and the Commission would delay the matter and come in the way of finalisation of tariff, the Commission is of the view that the fixation and determination of tariff is in the domain of the Commission. **The Commission therefore directs that such additional cost which result in change in tariff as per clause 3.4, 6.9(d), 6.9(e).6.9(h), 14.3 (d), 14.3(e) and all other matters requiring approval of**

UPPCL/Govt./CEA as per the provisions of PPA shall be considered and approved by the Commission only.

- ii) Whether it will be harsh to deny payment by UPPCL in respect of increase in cost due to change in law which is not covered by escalation in tariff else where.*

With regard to the aforesaid contention of the applicant that sale tax if levied on sale of electricity will amount to change in law, it must be allowed and paid to him, the Commission is of the view that such expenditure should also be subject to the approval of the Commission.

Accordingly Commission directs that clause 6.9(f) of PPA be replaced by the following :-

“To the extent that the company incurs any other increase in costs as a result of any change in Law which are not covered by the escalations in the Tariff elsewhere provided in this Agreement the amount of such costs are to be paid by the UPPCL to the Company subject to approval of such expenditure by the Commission.”

5. Mis-declaration of available capacity

Applicant submitted on pg. 12 of the review petition that, “The company does not stand to gain, in any way, by declaring higher available capacity. The non-availability of any declared available capacity can only be due to reasons beyond the control of developers. As such there is neither any question of any mis-declaration of declared capacity by the developer nor there is any requirement or justification for compensation by the developer to UPPCL in case the actual available capacity is less than the declared available capacity”

This submission gives rise to the following issue:-

Are there any realistic situations where the company stands to gain by Misdeclaration of the unavailable units?

The applicant vide his application dated 10.10.2005 submits that as per the terms of PPA, incentive from plant availability is also linked with actual availability and has nothing to do with the Declared Available Capacity. The company therefore does not stand to gain, in any way by declaring higher available capacity.

During the hearing on 27-12-2005 Sri Suresh Kumar M.D., J.P..V.L. reiterated the stand taken on the issue of misdeclaration as per the written submission dated 10.10.2005.

UPPCL vide their counter affidavits dated 25.11.2003 and 25.10.2005 have not touched this point. However during the hearing Sri O.P.Malhotra G.M.(P.P.A) of UPPCL pointed out the eventuality of when the developer stands to gain in case of deemed generation from mis-declaration.

During the hearing 27-12-2005 the Commission directed that both the parties to the P.P.A. may develop a mechanism to check **misdeclaration** and put up the proposed additional clause of the P.P.A. for approval within 15 days reckoned from the date of hearing.

M/s JPVL vide their affidavit dated 10.1.2006 submitted to the Commission with a copy to UPPCL the following mechanism pursuant to the above directions.

“ If at any time the actual available capacity is found to be less than the Declared Available Capacity, the Availability for that day, for the purpose of Percentage Annual Availability and the Deemed Generation, shall be the actual Availability on that day and not the Declared Available Capacity.”

The Commission directs that the following provisions be made in the PPA.

“If at any time the actual available capacity is found to be less than the declared available capacity, the availability for that day, for the purpose of percentage Annual Availability and the Deemed Generation shall be the actual availability on that day and not the Declared Available Capacity”

In addition to the above the Commission directs that while verifying the veracity of Declared Available Capacity the trends in respect of various other factors viz. Discharge, hours of running, Generation and Availability etc. may be based on log books maintained at the Generating Station.

6. Computation of Head Loss and Net Head for different discharges vis-à-vis constant head loss of 41 meters for determining design energy.

Applicant submitted on pg. 14 of the review petition that, “The head loss of 41 meters adopted for computation of design energy and the designed energy approved by CEA, therefore, do not require any change.

Further the applicant submitted on page 15 of the review petition that,

“The design energy covered in TEC accorded by CEA will be subject to further review by CEA on availability of additional hydrological data”.

This submission gives rise to the following issue:-

Is adoption of head loss of 41 meters for determining design energy as adopted by CEA technically agreeable?

The applicant vide written submission dated 10.10.2005 submitted that :-

The head loss and consequently the net head varies with the quantity of water flowing and the higher the coefficient of rugosity, higher will be the head loss and, therefore, lower net head. As per the IS Code, the coefficient of rugosity in concrete lined tunnel varies from 0.012 to 0.018. The CEA has adopted the value of 0.013 as coefficient of rugosity for the design energy calculations. The coefficient of rugosity of 0.012 corresponds to very smooth surface and 0.018 corresponds to very rough surface. Due to high velocity of water in the tunnel (approx. 4 meter per second i.e. 13 feet per second) and presence of high percentage of quartz particles in the sediment, which are highly abrasive, the surface of the tunnel shall deteriorate very fast, resulting in rapid increase in coefficient of rugosity and shall be much more than 0.013 adopted by CEA. In case head loss at different discharges is to be considered, higher coefficient of rugosity should also be considered. Since it is impossible to determine the exact coefficient of rugosity at different times and head losses at various discharge, the CEA based on its experience and judgment adopted coefficient of rugosity of 0.013 and full discharge to determine head loss and thus the net head for determining Design Energy in all conditions which is a fair estimate. In view of the aforesaid submissions, the Hon'ble Commission may kindly accept the head loss of 41 meters as considered by Central Electricity Authority for determination of design Energy while according Techno Economic clearance to the project".

UPPCL has not submitted any specific response

Commission had appointed Sri B.K. Aggrawal, Ex- Member (Hydro) CEA, as Consultant for analyzing the technical issue and parameters involved in the review petition and it agrees with the following findings of Sri Aggrawal:

- In the CEA's computation the head loss has been considered as 41m (corresponding to rugosity coefficient of 0.013) for rated discharge of 50 cumecs and same has also been considered in the Annexure –I of the amended PPA.
- There shall be increase of losses in the water conductor system due to sand abrasion. However, it is not feasible to predict the amount of increase in such losses and the time over which this increase shall happen.
- Published literature regarding increase in losses in HRT over the time could not be found. The applicant (JPVL) has also not furnished any technical literature indicating the increase in losses in the tunnel over a time period during operation.

- IS : 4880 – Part III in clause 4.1.1.1 specifies that coefficient of rugosity for concrete lined tunnel varies from 0.012 to 0.018. However criteria for selecting rugosity coefficient has not been specified.

“In view of above, it is recommended that UPERC may favorably consider the arguments of M/s JPVL to retain 41m as net head loss for all discharges provided M/s JPVL agrees for the same for the duration of PPA. M/s JPVL may provide necessary undertaking to UPERC that JPVL shall not request for any upward revision of head losses during the term of the PPA and extension to the PPA, if any.”

In light of the above the Commission directs to adopt 41m as the head loss for all discharges for the purpose of computation of design energy.

7. Design Energy

Applicant submitted on pg. 15 of the review petition that, “Design energy covered by the TEC accorded by CEA is reasonable and will be subject to further review by CEA on the availability of hydrological data”

This submission of the applicant gives rise to the following issue:-

Should the value of Design Energy arrived at by CEA be adopted

CEA had considered hydrological data up to year 1990-91 as was available at that time for computation of design energy. The applicant has indicated in its written submission dated 10-10-2005 that it had submitted the hydrological data beyond 1990-91 on wards also to Central Water Commission for their consideration

In view of above the Commission directs that the design energy be computed on the basis of 90% dependable year determined from the revised hydro logical data as may be approved by the Central Water Commission on the same parameters as were adopted by CEA while according TEC of the project.

8. Overall plant efficiency

Applicant submitted on pg. 15 of the review petition that, “It is not appropriate to consider overall efficiency of the turbines and generators more than 89% “

UPPCL has not furnished any response in respect of the technical issue.

The submission of the applicant gives rise to the following issue:-

Should the combined efficiency of the turbine and generator be more than 89 %?

Sri Suresh Kumar, MD, representing the applicant submitted as follows :-

“That CEA while according TEC in 1997 had considered the plant efficiency as 89%. The efficiency of plant reduces with its operation. Further in the present case, the efficiency would be very seriously and adversely affected due to abrasion of runners and needle assembly by quartzite particles of high hardness present in the river water. CEA has, therefore, approved 89% plant efficiency for determination of energy generation based on experience, judgment and the technology prevailing at that time. i.e. in 1997. Orders for procurement of equipment were placed by the Applicant after inviting tenders through ICB route in 1998 immediately after grant of TEC by CEA with the plant efficiency parameters at 91% . The said efficiency of 91% will be demonstrated by the supplier only at the time of commissioning and will reduce with the passage of time. These days, CEA is adopting higher plant efficiency because of improvement in technology, which cannot be applied in this case.

It has come to the notice of the Commission that M/s Alstom have shown that the guaranteed efficiency of Pelton turbine is 91.6 % and generator is 98.82 % (i.e. overall efficiency of 90.52%). CEA vide letter dated 31-3-2003 have intimated that in the power potential studies the overall efficiency of Pelton turbine driven generating units had been considered at that time as 89% based on the efficiency of similar generating units. This was adopted for planning purposes. Overall efficiency of 90% is presently being considered for Pelton turbine driven generating units for clearing the projects by CEA. However, the fixation of sale rate of energy, the energy generation need to be worked out on the basis of overall guaranteed weighted average efficiency of the generating units.

Sri B.K. Aggrawal, Ex- Member (Hydro) CEA, (Consultant) for analyzing the technical issues and parameters involved in the review petition has furnished the following findings:-

(a) There shall be decrease in efficiency of turbine due to erosions, cavitations and pitting etc. due to silt content in water. It is not feasible to predict the time frame and amount of shortfall in efficiency. The amount of such a shortfall in efficiency shall depend upon damages, the quality and frequency of repairs on turbine.

(b) There may be many problems in generators also due to ageing and deterioration in the stator and to a lesser extent in rotor windings. However, shortfall in efficiency shall not be significant.

(c) As CEA has adopted efficiency of 89% in calculation of design energy, after due consideration of relevant aspects, Commission may agree to retain the efficiency of 89% .

Commission has observed that CEA had approved 89 % plant efficiency for determination of energy generation based on experience, judgment and technology at the time i.e. in 1997. Orders of procurement of equipment were placed by the applicant after inviting tenders through ICB route in 1998 immediately after grant of TEC by CEA with plant efficiency parameters at 91 %. The said efficiency of 91 % will be demonstrated by the supplier only at the time of Commissioning and will reduce with the passage of time because of abrasion of runners and needle assembly of quartzite particles of high hardness present in the river water. These days, CEA is adopting higher plant efficiency because of improvement in technology, which can not be applied in this case.

Therefore in the absence of any befitting compelling reason, Commission does not intend to deviate from the figure of 89 % efficiency for determination of design energy as approved by CEA and directs that the over all plant efficiency of 89 % be adopted for determination of design energy.

9. Secondary energy charges

Applicant submitted on pg. 16 of the review petition that, "The company however agreed during the consideration of PPA by the Hon'ble Commission to modify the payment terms for secondary energy on the basis of energy charges for primary energy as per revise Government of India Guide line on the condition that there will be no other changes in the PPA which effect the payments to the company and consequently the economic viability. There it is submitted that the company dose not agree to modify payment terms of secondary energy if there are any other changes in PPA which effect the payment to the company.

UPPCL has not submitted any specific reply to the issue

The submissionof the applicant gives rise to the following issue:-

What should be the tariff in respect of Secondary Energy?

The applicant during hearing on 27-12-2005 agreed to the payment of secondary energy on the basis of energy charges for primary energy i.e. design energy.

The Commission maintains that the tariff of secondary energy should be equal to the energy charges for primary energy as directed in

the Commission order dated 14-06-2003 in line with GOI notification dated 14.12.98.

10. Capital Cost/IDC

Applicant submitted one page 17 and 18 of the review petition that the implementation agreement was executed between Government of U.P., UPSEB (Now UPPCL) and the company 20-09-1994 and the revised implementation agreement between Government of U.P., Government of Uttaranchal, UPPCL and the company was executed in March 2003 after reorganization of U.P. and creation of State of Uttaranchal and settlement of various issues between the two States and substantial progress had already been achieved on the project before signing of the amended implementation agreement and therefore it is neither rational nor reasonable to utilize loan fund, only after signing of revised implementation agreement. Further if the entire equity is to be utilized first, before availing loan funds, it will adversely affect the viability of the project and therefore it is neither rational nor reasonable to utilize entire equity before availing loan fund.

Commission is convinced with the argument of the applicant and expunges the following portion of its order dated 14-06-2003 (Page.27)

“A part from expenditure of Rs. 25 Crore equity from UPPCL and promoters equity, the expenditure from loan fund should not be prior to the date of signing of revised implementation agreement”

“To the extent possible equity should be utilized first before availing the loan funds.”

11. Approval of PPA

Applicant submitted on pg. 19 & 20 of the review petition that, the Commission's order dated 14/6/2003 may be clarified/modified in light of the submissions made in the review petition and in particular clauses 27, 28, 29 & 30 of the order and corresponding clauses of PPA executed between the parties may be allowed to be retained and enforced without changes.

In this context the Commission observed that the clause 27 of the order dated 14.6.2003 deals with the finalization of Firm Financial Package.

In view of the fact, that the interstate issues have already been settled between the Governments of UP and Uttaranchal as per revised Implementation Agreement executed in March 2003 and that the capital cost of the Vishnu Prayag Hydro Electric Project is below the ceiling of Rs. 2500 Cr. fixed by the Central Government for the CEA to accord

Techno Economic Concurrence, UPERC will now look into the prudence of actual expenditure and other related issues while working out tariff for this project.

The clause 28 of the order dated 14.6.2003 deals with the Midterm Review of the PPA. This issue has been decided at point no.3 above.

The clause 29 of the order dated 14.6.2003 suggests modifications in clause 3.4, 6.9 (d) , 6.9 (e), 6.9 (f), 6.9 (h), 14.3(d), 14.3 (e), of the PPA and introduction of a mechanism in PPA to deal the consequences of mis-declaration of available capacity. These issues have been decided at serial no. 4 & 5 above.

The clause 30 of the order dated 14.6.2003 deals with the issues of Net Head, Overall Efficiency, Discharge Data, Hydrological Year, Design Energy, Deemed Energy, Incentive for Availability, Secondary Energy Charges, Capital Cost including IDC, Merit order dispatch and Escrow arrangement etc. related to tariff.

These issues have been decided under serial no. 6,7,8,9, and 10 above.

The rest of points at issue are being decided as below :-

1- Discharge Data

Developer to submit the revised hydrological data as soon as approved by CWC along with computation of design energy based on revised hydrological data.

2- Hydrological Year

The Hydrological year may be taken from June to May as decided by the Commission in its order dated 14.6.2003 & 29.7.2005 instead of October to September.

3- Escrow Arrangement

The issues in this regard are as follows:-

Has UPPCL ,in view of it's non-trading function under EA2003,examined the following issues?

a. .Escrow Policy, Demand projection, Power Procurement plan.

b. .Allocation of power available from Vishnuprayag HEP among the Distribution Companies

Do the Discoms confirm to the terms and conditions of the PPA, Escrow Agreement and the Hypothecation agreement in respect of power purchase from Vishnuprayag HEP?

Sri S.K.Agrwal Director Finance UPPCL presented the following before the Commission during the course of hearing on 27.12.2005:-

- a. The GOUP is going to create a Trading cum Holding Company which will inter alia look after Trading, PPAs, Commercial Works of UPPCL as a nodal agency.
- b. UPPCL will remain a pure STU with no trading business as per E.A. 2003.
- c. The Distribution Companies have agreed in writing that they will abide by the Escrow Arrangement as decided by the present Board of Directors of UPPCL.

In view of above submission Commission directs that the allocation of power along with PPA should be assigned to *Distribution Companies* as per Government policy, and *Distribution Companies* should abide by the escrow arrangement already agreed upon in PPA.

4- Tariff based on technical and financial parameters

With a view to billing of energy on commissioning of first unit, the provisional tariff will be decided by the Commission. The tariff structure will be same as mentioned in the PPA. For provisional tariff the developer shall furnish the detail as per formats annexed with the UPERC (Terms & Conditions of Generation Tariff) Regulations-2004. After firming up of the capital cost of the project on the basis of actual expenditure duly audited by the statutory auditors of the developer, the Commission on prayer shall revise the provisional tariff.

The PPA along with the Escrow and Disbursement Agreement and Security and Hypothecation Agreement with changes as provided in this order are hereby approved.

The review petition is disposed of accordingly.

(R. D. Gupta)
Member

(P.N.Pathak)
Member

(Vijoy Kumar)
Chairman

Dated:16th, Feb,2006
Lucknow