ORDER

ON

LONG TERM TARIFF PRINCIPLES

Andhra Pradesh Electricity Regulatory Commission

March 2003

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ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION

Hyderabad

Order No.

23rd March 2003

Present: Shri G.P.Rao, Chairman

Shri D. Lakshminarayana, Member

Shri K. Sreerama Murthy, Member

Eastern Power Distribution Company of Andhra Pradesh Limited (APEPDCL)

Southern Power Distribution Company of Andhra Pradesh Limited (APSPDCL)

Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL)

Northern Power Distribution Company of Andhra Pradesh Limited (APNPDCL)

A1: INTRODUCTION

1.1 The Andhra Pradesh Electricity Reform Act, 1998 envisages taking measures that are conducive to the development and management of the electricity industry in the state in an efficient, economic and competitive manner.

1.2 Specifically, as per Section 26 (2) of the Act, the Commission, in determining tariffs, is mandated to look at factors, which would encourage efficiency, economic use of resources, good performance, optimum investments, performance of license conditions, and other matters that the Commission considers appropriate keeping in view the objectives of the Reform Act.

1.3 The Commission, in course of reviewing its Tariff Policy, came to the view that a statement of Long Term Tariff Principles (LTTP) will facilitate achievement of above stated objectives. The Commission elaborated in a Consultative Paper, which was issued on February 20, 2002, the need for some modifications to the existing methodology of tariff determination for Distribution and Retail Supply licensees in the state, and presented therein various options for a discussion.

1.4 The Commission through an advertisement in newspapers on June 14, 2002, invited objections / suggestions from the public including consumers, corporate bodies and other organisations representing the consumers, on the LTTP Consultative Paper.

1.5 In response to this, 35 persons / organisations and the licensees sent their views on the specifics of LTTP presented in the Consultative Paper. Some respondents expressed their desire to be heard in person. Following this, the Commission organised a public hearing on June 20, 2002 at the Ravindra Bharati Auditorium, Hyderabad.

1.6 In addition, the Commission organised a conference at Dr. M C Reddy Institute of HR Management in Hyderabad on August 30, 2002 on the LTTP. The participants included the Commission and staff from eight State Electricity Regulatory Commissions (SERCs). The conference involved presentations on LTTP, question and answer session, and detailed discussions on the need and importance of LTTP, readiness of Indian utilities, and implementation issues.

1.7 The Commission, having heard the consumers, representatives of organisations and corporate bodies, etc., having consulted with other Regulatory Commissions, and having considered all the documents available on record, passed the following order on Long Term Tariff Principles.

A2: CONSULTATION PROCESS

2.1 The important issues raised in written submissions and the public hearing are detailed below:

Issues raised in written submissions and at the public hearing

LTTP Framework

2.2 The licensees have expressed the need for listing out the general principles that will provide regulatory certainty in determining the tariffs. In addition to the principles identified in the consultative paper the licensees sought further provisions such as elimination of cross subsidy, financing of regulatory asset base, mitigation of subsidy risk, independent arbitration and mechanism for independent data verification.

2.3 Some respondents stressed the need for a low risk-return approach for the initial control period, which allows the licensees time to understand the system and adopt it. This requires the targets in the initial control period to be realistic and achievable. The licensees proposed that incentives should be high-powered such that high gains can be made if targets are achieved but otherwise the downside risk is limited.

2.4 Some organisations representing the consumers have submitted that the process should be transparent and democratic and should have sufficient safeguards to minimise opportunities available to the licensees on account of misrepresentation and gaming of information. They have also brought out the need to set targets for the performance of the utility on the aspects of quality, reliability of supply, etc.

2.5 The licensees sought an approach that in transition period focuses on the most pressing problems. The licensees suggested that performance targets on network costs, financing costs, etc., may be dropped, and focus largely on system losses, collections, and metering.

2.6 In general, the respondents suggested that performance-target based incentive mechanism be adopted rather than reimbursement of the licensees for their actual performance. In setting targets, some have sought for a clear demarcation between the controllable and the uncontrollable costs, and treat deviations in uncontrollable items as pass-through in tariffs.

System Losses

2.7 The licensees pointed out that change in the sales mix impacts the average system loss level, and thus the performance targets be normalised to keep out such impact. They have submitted that the options listed in the consultative paper face two major impediments:

- In the absence of universal metering of consumers, there can be disagreements on the initial level of system losses and the future pace of loss reduction.

- The Discoms will lose motivation to manage supply to subsidised consumers, as a true up of sales mix is proposed.

2.8 Some objectors suggested that the yearly targets be fixed in a manner that the rate of reduction in the initial years is high and that a part of benefit of such improvement be shared with the consumers.

2.9 Some corporate respondents stated that a credible loss estimate based on adequate metering is vital, not only to establish the initial loss level but also for every year of the control period. They further suggested that the methodology to be adopted by the Commission for assessing the system losses must be agreed upfront by all concerned.

Network Costs

2.10 Regarding the network costs, it was the suggestion of a few objectors that the licensees may for the time-being give comparatively lesser importance to performance targets on network costs as it forms a smaller part of the total costs and compares well with national and international standards, but focus in the initial years on improving quality of service to consumers and reducing losses.

2.11 Some objectors have suggested that the network costs be pegged to a norm whereas few others have suggested that the actuals as reported by the licensees be used in the initial years and later move to a performance-target based method.

2.12 A consumer organisation opined that if a fixed amount is allowed by the Commission, it would provide certainty to the licensees of level of O&M expenditure permitted, and it would help negotiate with the unions. Moreover, it was stated that these norms needed to be evolved over a time and based on discussions.

Financing Costs

2.13 The licensees argued that performance targets be omitted on financing costs as they contribute only 4% of the revenue requirement. Some objectors have suggested that in the initial years the claim for interest and return on equity need to be dealt with separately. They have suggested that the licensees be directed to borrow at competitive market rates depending on their credibility and that the return allowed could be continued at the current level of 16% unless modified by the State Government.

2.14 An objector suggested that the approved financing cost may be based on a certain standard or applicable financing terms and that any savings on it could be allowed to be retained as incentive and further that allowances can be made for any changes in the PLR and other market conditions.

Working Capital

2.15 The licensees and some objectors have urged that a target may be set for the collection of receivables and that provision may be made to write off bad debts. The licensees sought that initial targets be generous but gradually be tightened as the system improves.

2.16 An objector suggested that the Commission may permit recovery of the entire working capital cost as filed but provide incentives inversely proportionate to the quantum of working capital. However, another objector proposed that no interest on working capital should be permitted as the licensee charges the customer 2% per month on the outstanding bill amount.

Consumer Service Standards

2.17 The licensees believe that a small number of key service standards can be measured and monitored initially. However, they have requested for a moratorium of three years to improve the existing field conditions and ramp up the systems to a minimum acceptable standard. They have also stated that if necessary some form of token incentive / penalty against a time-bound implementation plan may be considered for the first control period.

2.18 Some objectors have suggested that the Commission should stipulate progressive improvements in submitting technical information, which can be reviewed during the control period. An objector suggested that gradually the Commission should move to a regime of regulating the licensee by monitoring the outputs rather than inputs.

Capital Expenditure

2.19 The licensees have agreed that they can submit an indicative long-term investment forecast. However, this plan should not be binding as the requirements may develop over a time, and that the current practice of annual reviews should continue. The licensees suggested that they may be allowed to retain any savings arising out of faster completion of capital works.

2.20 Some objectors have suggested that the licensee may be allowed flexibility in planning and implementation of the investment plan, which could be reviewed at the end of or in the middle of the control period. Another objector has raised the need to lay down the guidelines on the manner of capitalisation of investments and treatment in case the investment plan spills over to the next control period.

Reasonable Return

2.21 The licensees have sought for a change in definition of capital base, and for the returns to be pegged on the net worth. On the other hand, a consumer organisation preferred retention of the Sixth Schedule methodology with an overall cap on profits.

2.22 A few objectors stated that the existing return of 16% is adequate, the overall cap on profits may be removed, and that some profit sharing mechanism may be put in place. An objector suggested banking the incentives to be adjusted against previous losses rather than an annual claw back of excess profits. Another objector sought the use of a risk-related return, based on a margin over the PLR charged by the lenders at the time.

Bulk Supply Tariff

2.23 The licensees agree that, ultimately, the differential Bulk Supply Tariff (BST) needs to be phased-out and that in the transition period it should reflect the differences in their consumer mix. An objector suggested an alternative to differential BST, by the creation of a "subsidy administration fund" or separation of generation and transmission costs.

2.24 Another objector argued that as the bulk supply cost is beyond the licensees' control, uniform BST must be applied, at least during the transition period.

Retail Supply Tariffs

2.25 Several objectors recognised that eventually the retail tariffs will differ between the licensees as they reflect the licensees' specific actual costs and efficiency levels. Others have argued that uniform retail tariffs may be maintained, as differences others than efficiency exist between Discoms and that the consumer should not be penalised for such differences.

2.26 An objector sought that under the LTTP the licensees should be allowed the flexibility to design tariffs based on characteristics of its sources of energy. Another objector has stated that there is need for the continuance of cross subsidy (intra-category and inter-category) and sought continuance of slab system and uniform tariff to consumers of same category in the entire state.

Correction Factors

2.27 The licensees have sought inclusion of consumer mix variations in the correction factor. They have expressed that consumption by agriculture consumers may be kept out of the framework if there is no sufficient clarity on the policy and the time of metering.

2.28 A few objectors have suggested that the variation in sales forecast is a normal business risk and must be borne by the licensees. Another objector stated that the risk arising out of sales variation be shared between the licensees and the Government.

Control Period

2.29 Some objectors have sought that the initial control period to be only one year, though otherwise the duration of a control period could be 3 - 5 years. Another objector has suggested that the initial control period should be for a duration of 3 years, and its commencement preceded by complete end-user metering and correct assessment of system losses.

2.30 A few respondents suggested a 5-year period for the control period, some arguing for a mid-term review in which the baseline data could be finalised. An objector feared that a long control period might lead to rigidity and loss of manoeuvrability in the proceedings of the Commission even if there is an annual review exercise.

Regulators Conference

2.31 Following the public hearing, the Commission organised a Workshop on LTTP on August 30, 2002. The workshop was attended by State Electricity Regulatory Commissions from 8 States, and was inaugurated by His Excellency the Governor of Andhra Pradesh. The objective of this workshop was to debate the LTTP in detail on their need and importance, readiness of Indian utilities, and implementation issues.

2.32 The participating regulators were strongly of the opinion that a form of LTTP is desirable and that in many cases it is essential for the success of electricity sector reforms. They recognised the benefits of establishing performance targets, of providing predictability in the tariff regime and of regulating outcomes rather than the inputs.

2.33 On the critical concern of data adequacy for determining the performance targets, it was felt that a start must be made, and that LTTP would provide the impetus for enhancing data quality. Further, it was recognised that many utilities are making efforts to improve systems and procedures and are introducing information technology, which will help improve data quality. Lastly, several pilot studies and on-going assessments were being undertaken to assess agriculture consumption and that it would help improve assessment of system losses. Therefore, the view of the conference was that data inadequacy should not be seen as a hurdle for progress on implementation of LTTP.

A3: LONG TERM TARIFF PRINCIPLES

3.1 These Long Term Tariff Principles will be applied for determination of Annual Revenue Requirement of the Distribution and Retail Supply (D&RS) licensees for a specified duration viz. the Control Period. This Order applies to all the D&RS licensees. The licensees will make separate filings in the manner required in this Order.

Approach

3.2 As provided in the existing regulations, licensees will publish a notice of their filings based on these long-term tariff principles in the newspapers and make the filings available to the public. The Commission, based on a detailed review of the licensees' filings and taking into account the suggestions and views expressed in public hearings, will establish performance targets for licensees, applicable for a certain number of years from the specified date.

- The targets will be set for items that are deemed as "controllable" or "manageable" by the licensees. For the purpose of long-term tariff principles, network and financing costs and system losses are considered as controllable. Any financial loss arising from the performance falling short of the targets in these areas will, normally, not be recoverable through tariffs. Similarly, any financial gain arising from performing better than targets will not be adjusted against revenue requirement, and licensees will retain part of such gain during the control period.

- The licensees will not have to bear the burden of items that are considered beyond their control or "uncontrollable", and the consequent financial gain or loss will be adjusted in the revenue requirement. The uncontrollable factors will include but will not be limited to vagaries of nature, changes in the laws of the land, judicial pronouncements, Government policies, and economy-wide influences.

- Profitability of licensees is neither guaranteed nor capped, but entirely dependent on their performance. Further, profit in excess of normative returns achieved by means of higher efficiency, growth in business, etc., would be shared with consumers through rebates.

- Standards of quality for supply and customer service will be monitored closely and penalties for falling short will be introduced in a phased manner.

- Adequate investments in the business for asset creation and working capital must be ensured, and licensees will be fully compensated for it.

Detailed Principles

3.3 Based on this approach, the Commission specifies in the following paragraphs the methodology it will adopt for determination of licensees' Annual Revenue Requirement under the Long Term Tariff Principles.

Sales Forecast

3.4 The licensees will forecast sales for each customer category (and sub-categories i.e., slabs) for all years of the control period in their filings, for the Commission's review and approval. The sales forecast would normally not require any annual revisions, and the Commission approved category-wise sales forecast will be applied for estimating the licensees' power procurement requirement for each year of the control period.

This treatment is similar to the Commission's present methodology, and has the following implications:

– It will require the licensees to improve accuracy of sales forecasts. This also helps to improve the scheduling and despatch of energy, and planning of investments. It will help improve the quality of information on sales to each consumer slab.

– It provides incentives to Discoms to improve their revenues by means of better metering and billing systems that will help reflect actual consumption (for various reasons, such as due to multiple connections, at present a higher than true proportion of consumption is probably recorded in the subsidised lower slabs). Also, Discoms can attract large / subsidising consumers by means of improved quality of supply and service and through more attractive commercial terms.

– It provides incentives to Discoms to reduce subsidised consumption through demand side management measures, at consumer level and, by means of tariff design viz. time of day and seasonal tariffs.

3.5 To these normal guidelines, certain exceptions are provided to meet exigencies such as abnormal weather conditions or changes in conditions of supply. For example, if supply in excess of that forecast is required for agriculture usage for a season or more, the licensees can make an application to the Commission in that year for approval. The application will demonstrate the need and show how the licensees would meet the costs, if any, towards such additional supply.

3.6 In its review of the licensees' Annual Revenue Requirement, the Commission will examine the sales forecasts filed for reasonableness, consistency across all licensees, etc., before granting approval. This review is important, as under prevailing conditions of cross-subsidy, a very conservative or aggressive forecast will provide a misleading basis for determination of bulk supply tariffs. The review will provide opportunity to the licensees to justify and support their forecasts.

3.7 The Commission will require the licensees to satisfy it that supply to consumers is made as per conditions specified in the license, the standards and codes issued by the Commission, and the quantum and/or time of supply provided in the Tariff Orders. In particular, any significant supply restrictions, such as extended outage or failure of transmission will be adjusted against revenue requirement. This provision is intended to safeguard against tendencies for making improper gains by restricting supply to the subsidised consumer classes.

Towards this end, the licensees are required to propose a methodology to monitor supply to subsidised consumer classes. One approach to this is to classify all the 11kV feeders by the consumer categories to which they mainly cater, and meter the energy supplied during the year or sample period.

System Losses

3.8 Distribution system loss is defined as percentage of the difference between total energy input to a licensee and its sales to all consumer categories, to the total energy input. As per the previous Tariff Order, Distribution system losses are on the average about 22%, and the reduction of these losses constitutes the single largest source of efficiency gain.

3.9 The Commission will establish a system loss target for the licensees for each year of the control period taking into account their filings, submissions and views expressed in the pubic hearing, and based on the results of its review. Normally, a separate set of system loss targets will be specified for each licensee.

3.10 The approved system loss target will be used for determination of licensees' revenue requirement for that year. The licensees are permitted to retain any financial gains arising from achieving higher system loss reduction than the target. On the same basis, any financial loss arising from the inability to achieve the system loss reduction target will not be permitted as a cost to the consumers.

3.11 In their submissions, licensees are required to indicate the level of system loss in the base year, and to propose a path for system loss reduction for each year of the control period. The licensees will provide detailed justification for the proposed system loss reduction target, by giving details of planned initiatives in metering, billing systems, capital investments, etc., and taking into account the state of the network, local conditions, past performance, etc. Licensees must ensure that system loss reduction targets proposed by them are realistic and achievable.

The licensees may also propose other methods of establishing system loss reduction targets, such as by means of bidding or franchisee arrangements or in the manner proposed by the State Government. In such cases, the Commission will adopt the system loss reduction targets that evolve from such process.

3.12 As supplies to agriculture are at present un-metered, it is necessary to estimate the quantum of supply before the extent of system losses can be determined. There are several methods to estimate agricultural sales and like any estimate this involves some risk of error. Ideally, the error can be eliminated by metering all agricultural services or minimised by metering all feeders supplying to agriculture. Till this can be achieved, the Commission has laid out a methodology that uses the census of agriculture pump-sets and a sample of DTRs that are metered, and the results of which are extrapolated Mandal-wise to the population. This needs to be updated annually.

In any case, to avoid the problems arising from incorrect data, the Commission proposes to undertake a mid-term review i.e., during the control period, to assess the correctness of initial system loss assumptions, and to make appropriate adjustments if significant divergence viz. more than 10%, is found as a result of the study. Such a review will be undertaken if sought by the licensees, and supported by a rigorous assessment with facts gathered from field studies conducted on the basis of a methodology approved by the Commission, and at their own cost.

Power Purchase

3.13 The quantity approved for power purchase by the licensee for any year will be the sum of total sales and the distribution system loss target in kWh, both approved by the Commission for all years of the control period, at the beginning of the control period. The Commission will use this approved quantity for computation of revenue requirement for all years of the control period. And the cost of power purchased by the Discoms for this purpose is the product of quantity of power purchased and the bulk supply tariff charged by APTRANSCO. In reality, licensees may need to purchase more or less power depending on the actual performance.

3.14 The licensees have the freedom to purchase power more than the required quantity if there is an opportunity to sell such power to other entities for gain. While such gains, and similarly losses, on trading will not be considered towards revenue requirement, the licensees must ensure that the transactions are reasonably hedged or are risk-free and have no adverse impact on their finances.

3.15 As the expenditure towards power purchase is the predominant cost for licensees, it also contains a significant potential for saving through efficient purchase. The Commission encourages the licensees to seek cheaper sources of power to make the best use of available generation capacity.

For all incremental power requirements i.e., beyond the approved level of purchase agreed at the beginning of the control period, which will cover the existing power purchase arrangements, the Distribution and Retail Supply Licensees can purchase from any source including the Bulk Supply Licensee, APTRANSCO. Thus, all incremental bulk purchases will be on competitive basis and distribution companies can benefit from contracting with cheaper sources of power.

As provided in the Distribution and Retail Supply Licences, direct purchases from sources other than Bulk Supply Licensee (APTRANSCO) are permitted with the Commission approval. The Commission will review the need for this approval in the initial period of operation and it may choose to waive it when the mechanism is fully established.

Network Cost

3.16 Network costs comprise salaries and wages, repairs and maintenance, administrative and general costs, and other miscellaneous expenses. Under the Long Term Tariff Principles, a detailed review for network costs would be undertaken by the Commission at the beginning of the control period. For the intermediate years, network costs permissible towards revenue requirement will be indexed to say, inflation or adjusted inflation number.

3.17 In their submissions, licensees will propose network costs required for the base year in complete detail and with appropriate justification, as is the present practice, for the approval of the Commission.

3.18 For the intermediate years of the control period, network costs to be considered for revenue requirement will be determined by adjusting the approved base value for inflation, using a predetermined index. The licensees will normally retain any financial gain achieved by keeping costs below this target. Similarly, the licensees will normally bear any financial loss arising from overrun in network costs, and not pass it on to consumers.

This treatment encourages economy by requiring licensees to limit expenditure within means, and also provides a direct financial incentive if costs are kept below targets.

3.19 The inflation index can be simple or complex structure, constructed using a combination of indices. For example, by analysing the components of the CPI and WPI, an appropriate composite index suitable for distribution companies can be constructed. The licensees may individually propose a suitable structure for this index based on the nature of their costs. But the Commission will finalise a single index that will apply to all licensees.

To support their system improvement initiatives, or to rectify any specific shortcomings, etc., the licensees can propose for inclusion of an additional amount or percentage of the index, for any one or more years of the control period. This proposal will be supported by a detailed justification of the specific requirement.

3.20 The Commission will finalise, in consultation with the licensees, a mechanism to assess the condition of assets on a regular basis, to safeguard against any deliberate under-spending in maintenance and upkeep of the network. To facilitate this, the licensees must finalise preparation of asset register.

Capital Investments

3.21 Capital investments cover spending on capital equipment that augments fixed assets, and capitalisation of corresponding interest and expenses determined as per the applicable accounting policies and guidelines. Capital investments may address a variety of needs such as meeting load growth, refurbishment and replacement of equipment, reduction of losses, improvement of voltage profile, improvement of quality of supply and system reliability, metering, communication, computerisation, etc.

3.22 The licensees will propose in their filings a detailed capital investment plan for each year covering the control period. The plan must separately show ongoing projects that will spill into the years of control period, and new projects that will commence but may conclude within or beyond the control period. For the new projects, the filings must provide the justification as prescribed under relevant investment guidelines.

3.23 The Commission will review the licensees' investment plan for approval, and for this purpose may require the licensees to provide relevant technical and commercial details. The costs corresponding to the approved investment plan of a licensee for a given year will, normally, be considered for its revenue requirement. The licensees can achieve the stated capital investment objectives at a lesser cost than approved by means of better project management, savings in costs of capital equipment, etc., and can retain the financial benefit of such savings in financing cost for the control period.

The Commission will require the licensees to record the efficiencies achieved through competitive bidding and efficient implementation of the projects. At the end of the control period, and in preparing the forecasts for the next control period, only the actual investments made will be considered, thus passing on the benefit of efficiency in capital investments to the consumers.

3.24 In addition to the approved capital investment plan covering the entire control period, licensees can seek provision for additional capital expenditure anytime during the control period to meet regular or emergency requirements. The Commission will review these in the same manner and approve for inclusion in revenue requirement.

3.25 In presenting the justification for new projects, the licensees will detail the specific nature of the works, a cost-benefit analysis and outcomes sought to be achieved. The detail must be shown in the form of physical parameters, e.g., new capacity added, meters replaced, customer service centres set up etc, so that it is amenable for physical verification. This is necessary to ensure that the approved investments are, by and large, implemented and the licensees do not derive improper financial benefit by delaying or neglecting to make the proposed investment. In case of any significant shortfall in physical implementation, the Commission may require the licensees to explain the reasons, and may proportionately reduce the provision, including the interest and the return component, made towards revenue requirement.

These measures are intended to be transitional, and the Commission under these Long Term Tariff Principles is proposing to establish appropriate quality standards that will be used as consumer safeguards in the long-term. In the interim, until the systems for measuring the quality standards are implemented to reasonable satisfaction, these indirect methods will be in use.

Financing Cost

3.26 As stated above, the costs corresponding to the approved investment plan of a licensee for a given year will, normally, be considered for its revenue requirement. For the past investments, actual values will be considered. While raising new finance, the licensee has the freedom to finance through any proportion of debt and equity to take best advantage of market conditions.

3.27 In its submission, the licensee must demonstrate that financing and investment requirements are matched. Thus, financing cost considered for revenue requirement is matched with what is needed for the approved level of capital expenditure and working capital and vice versa.

3.28 For past investments, viz. loans outstanding at the beginning of the control period, the licensees will indicate in their filings the expected interest outgo for each year. This will be considered towards revenue requirement of the licensees for such years.

The licensees can make efforts to reduce the cost of the outstanding loans, and retain such savings for the control period. The licensees are required to disclose such efforts and other relevant details to the Commission to ensure that such savings are not obtained at a cost that jeopardizes licensees' finances in future.

3.29 To finance new investments, interest cost is used to determine revenue requirement for the portion financed through debt. For loans from Government and from fully Government-owned financial institutions, the actual interest cost will be considered. For all other loans, e.g., from the market sources, the permitted interest cost will be linked to the Prime Lending Rate of a Scheduled Bank plus a predetermined margin that realistically reflects the rate at which licensees can raise debt from the market.

This proposal encourages the licensees to improve their credit rating and seek funds at lower cost. The benefit of such savings is passed on to consumers at the end of the control period, when the actual values will be considered as the base for subsequent years.

In their filing, responding to long-term tariff principles, the licensees may individually propose their choice of PLR reference and the margin, for the Commission's approval. In proposing this, the licensees must keep in view the suitability of PLR reference to their business, prevailing market conditions, their financial position, etc. To ensure consistency, the Commission will use one single benchmark PLR, which may be of a bank that is commonly acceptable to the licensees or to a composite index.

3.30 Depreciation charge for purpose of revenue requirement will be initially as forecast but later corrected to that provided in audited accounts.

Capital Base

3.31 The Sixth Schedule of the Electricity (Supply) Act, 1948, defines the term "Capital Base" as the difference of certain positive items (various assets) and negative items (various liabilities). On account of past finances, the capital base of licensees is not commensurate to their capital structure, and in some cases it is negative as well.

To correctly reflect the licensees' performance, and to ensure that with the capital invested the licensees are able to earn a reasonable return, the Commission proposes to deviate from the Sixth Schedule to address its current shortcomings.

3.32 The proposed redefinition of Capital Base follows the broad form specified in the Sixth Schedule, but differing in two aspects. First, the present provision for working capital through Stock and Cash is revised to such amounts that the Commission may propose at various times.

Second, the Share Capital of the licensees at the beginning of the control period is considered as the starting point for computation of Capital Base. Thus, in the first year, the Capital Base is Share Capital plus the difference of various positive items and negative items forecast for ensuing year. For subsequent years, the computation remains same, but Share Capital is replaced with previous year's Capital Base.

This definition helps remove the anomaly of negative capital base and ensures the capital base of Discoms is closer to their share capital. Further, it also encourages them to reinvest cash generated back into the business such as for new investments or working capital. This provides an additional incentive not only to reduce losses but also to improve collections, which are of major interest in the first control period.

Following Table shows the proposed definition of Capital Base.

Sum of:	Less:
Share Capital at the beginning of the control period	Change in Accumulated Depreciation
Change in Gross Fixed Assets	Change in Approved Loans
Change in Cost of intangible assets	Change in Consumer Contributions
Change in Capital Works in progress	Change in Consumer Security Deposits
Change in Working Capital requirement	Change in debt funding of working capital
Change in investments made from Contingency reserve and depreciation contribution	Change in Tariffs and Dividends Control Reserve
	Change in Development Reserve
	Change in the amount carried forward for distribution to consumers from excess profits

3.33 Reasonable Return as defined in the Sixth Schedule will be applicable. As presently applicable, the licensees in their filing for revenue requirement may propose a return of 16% on the Capital Base and 0.5% return on approved loans.

Quality of Supply and Customer Service

3.34 Quality of electricity supplied and customer service are important elements of Long Term Tariff Principles. In future, performance of licensees will be judged increasingly on the basis of quality and service, rather than on inputs. As this involves some preparatory work, the Commission proposes to introduce this in a phased manner, and the licensees must take note of performance standards in preparing their investment plans.

3.35 The emphasis on quality is important. In addition to the obvious direct benefits to the consumers, quality has a broader and more significant impact on the economy. The damage of poor voltage to agricultural pump-sets, or of interruptions and frequency digressions on certain industrial equipment and process plants, or of disruptions to residential and commercial users, etc., causes consumers to incur higher costs in repairing damage, invest on protective measures, and suffer loss of opportunity to produce. Improvement in quality will enhance productivity in all sectors of economy, help attract new industrial and high technology investments, and provide better living and working conditions for users.

3.36 In September 2000, the Commission approved Standards of Performance (Regulation No. 6) dealing with notice to consumers on scheduled outages, time for restoration of supply, time for attending metering / billing complaints, time limit for new connections etc. A separate regulation of the Commission on Consumers' Right to Information (Regulation No. 7) spells out consumer rights, such as serving notice before disconnection, notice for prior entry into any consumer's premises, etc. These regulations will continue to be applicable.

3.37 Under the Long Term Tariff Principles, the Commission proposes to undertake two major initiatives to benchmark and monitor quality of supply and customer service. The first involves quantitative measures to be recorded on a regular basis, and the second involves a qualitative survey conducted at the beginning of each control period. These are discussed below. The results of these surveys will be used for setting performance targets for licensees on quality of supply and customer service.

For both, the quantitative and qualitative measures, the Commission proposes to commission a survey by an independent agency within three months. The survey will collate information through a questionnaire and data formats on a sample basis, which will be used to set the baseline for quality of supply and service.

3.38 The first initiative involves quantitative assessment. Given the size of the network, this will be initially on a sample basis for each licensee. It will cover representative 33/11KV substations, section offices, EROs, Fuse-off Call Centres, Customer Service Centres and other customer contact facilities, relevant for the quality parameter under discussion. The licensees will establish suitable systems to track performance against specified quality parameters listed below:

(i) **Interruptions**: Average System Interruption Frequency Index (ASIFI) and Average System Interruption Duration Index (ASIDI) on 11kV and 33kV network, and on industrial supply.

(ii) **Voltage**: Voltage variations and number / extent of excursions beyond the range permitted by the standards specified in the Distribution Code, if required, separately for urban and rural areas, and any other valid segmentation sought by the licensees.

(iii) **Technical Quality**: Other important standards and parameters for technical quality (such as voltage unbalance, voltage sags/swells, harmonics, flicker, transient voltage variation, etc) as provided in the Distribution Code, and initially focussed on industrial supply.

(iv) **Transformer Failure**: Number of DTR failures as percentage of total DTR's in service and time taken for replacement, separately for urban and rural areas.

(v) **Metering**: Percentage of non-working / defective meters, separately for domestic, commercial and industrial categories. Percentage of consumers covered under spot billing.

(vi) **Billing Errors**: Number of billing errors identified and/or reported and prompt rectification.

(vii) **Payments**: Proportion of consumers availing various bill payment facilities i.e. E-Seva, EROs, Collection Centre, Drop Boxes etc.

(viii) **Service**: Proportion of consumers covered through Customer Service Centres, 1912 Call Centres, etc., to receive complaints.

(ix) **New Connections**: Average period of fully compliant applications for new connections pending with the licensee for domestic, commercial and industrial categories.

3.39 The Commission requires the licensees to commence collection of data on above measures immediately in the current year itself. This will help establish a baseline in a reasonable period of time. Based on this, the Commission will review the performance improvement against the identified quality parameters separately for each Discom, over which the targets for improvement would be set for each year of the Control Period.

3.40 The Commission will also require the Licensees to ensure that proper systems for recording and reporting information against these parameters are put in place as soon as possible, if the above exercise brings out inadequacy in such systems.

3.41 The second initiative involves a qualitative assessment. The Commission proposes that a Customer Satisfaction Survey be carried out by an independent organisation at the beginning of each control period. The aim of this survey is to:

– Elicit consumers' views on the quality of service, and identify the concerns or shortfall in expectations.

– Gauge the awareness of consumers of their rights, performance standards, and of the licensees' procedures for handling complaints.

– Obtain feedback for improvement in any specific aspect of quality of supply and customer service.

3.42 The qualitative survey helps to bring out several aspects of performance and service that are not easy to capture through quantitative means. For instance, the survey can help assess if consumers receive bills regularly, if they were given prior notice before disconnection, whether location and timing of payment counters is convenient, if the staff are courteous and helpful, ease in recording complaints and prompt resolution, and so on. The Commission is conscious that the responses will be subjective and may not be entirely comparable across licensees and over time. We believe the benefits will far outweigh such concerns.

3.43 A detailed, close-ended questionnaire will be used to solicit consumer's responses on a set of issues such as that described above. The Commission appoint an independent organisation to design the questionnaire, administer the survey in each license area, and present its conclusions in a report, which will be posted on the Commission's website (www.ercap.org).

For future repeats of this survey, the Commission will endeavour to use the same questionnaire so that consumer satisfaction can be tracked over a long period of time based on the same parameters.

Profit Sharing

3.44 Under the Long Term Tariff Principles, the Commission neither guarantees nor restricts the profits of the licensees. The profitability of licensees depends entirely on their performance against the targets set by the Commission. In fact, the scope for higher profitability acts as the incentive to achieve better performance. The incentive is strong as the licensee retains the benefit of such better performance for the entire control period rather than just the year.

3.45 To give full scope for this performance incentive to operate, the Commission proposes to deviate from the Sixth Schedule provisions that limit the extent of Clear Profit a licensee can retain at its disposal to five percent of the amount of reasonable return, by removing this restriction.

3.46 The profit in excess of reasonable return, however, is not left entirely at the disposal of the licensee. The Sixth Schedule provision for treatment of clear profit in excess of reasonable return is maintained. Thus, of the clear profit in excess of reasonable return, one-third is at the disposal of the licensee, one-third appropriated to the Tariff and Dividend Control Reserve and the balance one-third is distributed to consumers as rebate on bills. In this manner, the consumers will benefit from accelerated efficiency improvements even during the control period.

Revision / Correction at end of control period

3.47 The benefit of better performance, or more specifically the portion that was not passed on to consumers during the control period as described above, is also transferred to consumers at the end of the control period. This is achieved when the base values are reset for the next control period in order to correct for actual performance, and in this process the additional efficiencies gained are passed on to consumers.

Correction Mechanism

3.48 With regard to items beyond the reasonable control of the licensees, the differences between forecast and outturn must be compensated. The Commission proposes to permit these differences through a special appropriation in the immediate following year. In cases, where data is not readily available when the filings are being made, a first correction will be made based on reasonable estimates, and a final correction subsequently when the actual data or audited accounts become available.

3.49 Where such differences are large, such as caused by natural factors, and it is not feasible to recover in the ensuing year alone, the Commission may take a view to create a regulatory asset, which will be recovered over a few years, and also compensate for the carrying costs that will be incurred.

3.50 In addition to items beyond the reasonable control of the licensees, the Commission may provide for any other adjustments as correction factors with the objective of improving the functioning of Long Term Tariff Principles, or to recognise new facts not known earlier, and for removing any difficulties in its implementation.

3.51 The Commission has modified the existing Fuel Surcharge Adjustment provisions to include variations on account of price (fixed and variable) and mix of generating stations, which will be assessed and recovered on a quarterly basis.

Bulk Supply Tariffs

3.52 In the present industry structure, APTRANSCO is the sole Bulk Supply Licensee, procuring electricity from several generators and selling largely to the four Distribution and Retail Licensees at a regulated Bulk Supply Tariff (BST). The BST will be determined by review of filings made by APTRANSCO for annual revenue requirement and filings for proposed tariff.

Ideally, this BST should be uniformly applied, or more correctly cost-reflective, across all the four Distribution and Retail Supply Licensees. However, to balance the financial impact of differences in consumer mix across distribution companies, due to prevailing cross-subsidy between groups of consumers, the Commission adopted a differential BST in the last three Tariff Orders. That is, a separate BST applies to each Discom, but the average of all matches the BST awarded to APTRANSCO.

3.53 A differential BST by itself does not adversely impact the licensees, as it reflects their existing financial and operating position. But it is important that a differential BST does not result in withdrawing efficiency gains from better performing licensee to support the less performing ones. It is also desirable that licensees have certainty of the BST especially as bulk purchases from APTRANSCO constitute the largest component of their costs.

In the Long Term Tariff Principles, these requirements are achieved by adopting the pre-set approved performance targets and forecasts for computation of BST differential annually. To elaborate, BST in this control period will continue to be determined as per existing residual approach, but instead of using actual outturn costs incurred in distribution and retail supply business, the computation will use the pre-set performance targets discussed in earlier sections. In other words, the BST will reflect an efficiency benchmark.

This approach brings two benefits viz. one to a specific licensee and its consumers, and second to all licensees and its consumers in the state. The first benefit is that it permits a licensee to retain benefits of any achievement better than performance targets, rather than losing it in the subsequent year via BST, thus giving it the incentive to perform better. The second benefit is that it permits all the consumers in the State and not just those in the licensees' area to share the benefits that arise from the performance targets of all licensees moving towards efficient levels. In other words, all consumers share in improvements made up to pre-set efficient benchmarks, but if a licensee succeeds in improving beyond the efficient benchmark it has the incentive to retain part of the additional benefit.

The philosophy of this BST determination is to permit all the consumers in the state to reap the benefit from the performance improving to targeted efficient levels, while giving the benefit of better than expected performance to the licensee that achieves it.

3.54 The proposals for differential BST will apply up to the extent of approved purchases on an annual basis. For all purchases from APTRANSCO beyond the approved level, licensees will procure at such rate or procedure that may be provided by the Commission towards overdrawn power. However, as indicated earlier, the licensees may procure incremental power from any other sources as well.

Retail Tariffs

3.55 After determination of all costs as per long-term tariff principles, the Commission will determine the Cost-to-Serve for each customer category, based on assumptions provided by the licensees. Following this, the Commission will work out, as it presently does, the Full Cost Tariff (FCT) taking into account a determined level of cross-subsidy. Thereafter, the Government indicates the extent of subsidy it wishes to provide to each customer class. The FCT less the Subsidy extended for each customer category gives the final retail tariff applicable for that category, and this is notified.

3.56 Eventually retail tariffs viz. tariffs to final consumers, will differ from one licensee to another as the underlying costs will be different. This is because licensees are separate companies, operating under different field conditions, and independently with different business and investment plans.

3.57 For the first control period, the Commission will endeavour to maintain a uniform base retail tariff for consumers across the state. The actual rates payable by consumers may differ on account of rebates, penalties, etc., as discussed in the earlier sections.

3.58 The Commission will separately determine charges for other elements such as wheeling, meter rental, customer charges, delayed payment surcharge etc. The licensees are required to separately disclose revenue from minimum charges and from various components of non-tariff income in their filings.

Cross-subsidy

3.59 The tariffs charged for agriculture and domestic consumers have been less than the costs to supply them, and are made up partly through cross-subsidy from industrial and commercial consumers who are charged higher than the cost to serve, and the balance by way of Government subsidy.

3.60 Several concerns have been voiced in earlier tariff reviews on the shortcomings of high level of cross-subsidy. It is indicated that higher charges on industrial tariffs make them lose their competitive position or drive them to set up captive plants or purchase power from other sources. Also, studies indicate over-pumping of ground water given the highly subsidised and flat-rate tariffs for supply of power to agriculture. The Commission is committed to the principle that tariffs must eventually reflect the actual cost to serve for any customer category. In previous Tariff Orders, the Commission initiated a phased reduction in the level of cross-subsidy in a move towards cost-reflective tariffs. This annual process will continue.

Review Process

Initiating the control period

3.61 To commence application of these Long Term Tariff Principles, licensees will make filings consistent with the procedure provided in this Order, guidelines for ARR and tariff filing, prescribed formats, and Commission's directions on the subject.

In the filings, the licensees may propose appropriate targets, forecasts, indexation parameters and initial values applicable for the control period. In doing so, the licensees are expected to take into consideration the specific conditions, requirements and future plans of their business and licensed area in preparing their proposals. The proposals submitted must be supported by reasons, proper evidence and plans for implementation.

3.62 Based on the licensees' filings, objections, suggestions from public hearings, staff analysis and other expert advice, the Commission will approve the detailed proposals viz. targets, initial values, indexation parameters, etc for implementation of Long Term Tariff Principles.

Annual submissions

3.63 There is no change in the present practice of annual submissions for annual revenue requirement and proposals for tariffs. These must be submitted three months before the end of the financial year. The Commission will require the licensees to issue notice of filings in the newspapers and make available the filed documents to public. The Commission will conduct a public hearing, as is the present practice. As required by the provisions of the Reform Act, the Commission will review the licensees' proposals for approval within 90 days of submission.

3.64 Licensees will make the following annual submission at least three months before the ensuing financial year:

(i) Expected Aggregate Revenue from Charges i.e., Aggregate Revenue Requirement (ARR).

(ii) Customer category-wise cost-of-service (COS) computations for the ensuing year, along with its assumptions.

(iii) Proposals for Tariff.

3.65 In filing its proposals for tariff, the licensees are required to observe the principles, targets, indexation parameters, and procedures specified under these Long Term Tariff Principles and related guidelines. The proposals for tariff should inter alia provide the following:

– Description of costs at actual or estimate for the past and current year, and as per approved targets for the ensuing year.

– Forecast for parameters as required in the guidelines and formats, such as inflation, interest rates, etc., for the ensuing year.

– Correction factors, if any, for factors beyond control of licensees, etc.

– Actual achievement on quality of supply, customer service, capital investments (in physical and financial terms), etc., and achievement proposed for the ensuing year.

– Actual profits recorded / estimated, respectively for the past / current year, and the corresponding financial benefit that is due for sharing with consumers through rebates.

Periodic Reviews

3.66 To ensure smooth implementation, the Commission will undertake detailed quarterly reviews of licensees' performance during the control period, to address any practical issues, concerns or unexpected outcomes that may arise, and in general to assess the efficacy of Long Term Tariff Principles.

3.67 The Commission proposes to draft a report every year summarising its observations on the functioning of Long Term Tariff Principles, and inter alia providing guidance on how it proposes to improve on Long Term Tariff Principles for subsequent control periods.

3.68 If the structure of electricity industry in the state undergoes any change on account of state or national regulation or legislation, the Commission will study the nature of such changes and the impact it may have on licensees business and in consultation with licensees, make appropriate modifications to Long Term Tariff Principles.

End of Period Review

3.69 Towards the conclusion of the first control period, the Commission will undertake a comprehensive review of these Long Term Tariff Principles. The objective of such review will be to assess whether intended objectives are achieved, analyse the reasons for any deficiency in results or in the process, and from such learning to improve the framework that will apply to subsequent control period.

The approach for this review will be through a consultative process, covering all interested parties including consumers, licensees, Government etc., and the results will be posted on the Commission website for public access.

3.70 Based on the results of this review, and the conditions in the power sector at that time, the Commission will start working on the details that will apply for the second control period. The content of Long Term Tariff Principles for the second control period cannot be predicted or fixed now, but in preparing them the Commission will be guided by the need to encourage efficiency, economic use of resources, good performance, optimum investments, consumer interest and such others necessary for healthy development of the electricity industry in the state.

Applicability of Long Term Tariff Principles

3.71 The Long Term Tariff Principles will apply to the four main Distribution and Retail Supply Licensees in the state viz. EPDCL, SPDCL, CPDCL and NPDCL. These principles will apply from April 1, 2005 and will remain in force until a subsequent amendment or revision.

3.72 The Distribution and Retail Supply Licensees will file Aggregate Revenue Requirement and Tariff Proposals for year 2004-05 in December 2003, and the LTTP filings for a period of 3 years i.e. FY 2005-2008.

3.73 In the year (2004-05), the Commission will monitor application of long-term tariff principles in shadow operation. This will help make an easy transition and gives time to fill data gaps. The licensees have adequate time to compile the required information, prepare long-term forecasts and propose suitable targets based on their field conditions and business plans. The information requirements and formats, to make submission under this Order, will be issued by June 15, 2003.

3.74 The base year proposed for LTTP submission is the financial year 2002-03. To achieve this, licensees will need to complete audited accounts for all years including for financial year 2002-03, within time for filing under LTTP.

Further, the licensee should complete the agriculture census study and continue the ongoing exercise of DTR meter reading for estimation of agricultural consumption as presently done.

It is expected that the independent survey to establish baseline data for quality of supply and customer service will be completed by July 2004.

3.75 The Commission will initiate simultaneous review of ARR/FPT for 2004-05 and LTTP filings. While the review of ARR/FPT for 2004-05 will be completed with in the time period of 90 days, the review for LTTP filings will require longer time. In particular, a detailed review for efficiency improvement plan, investment plan, sales forecast and quality improvement plan, will be required. The licensees will have adequate opportunity to explain and justify the proposals in course of the review.

3.76 The Commission proposes to complete review of LTTP filings, and finalise the targets and incentive framework by November 2004. This will be applicable for the duration of the control period, which will be of three years viz. covering 2005-08.

3.77 The Distribution and Retail Supply Licensees will submit filings in December 2004 for ARR/FPT under LTTP framework using the targets established above. Similarly, for subsequent years of the control period, the licensees will use targets established for that year to make ARR/FPT filings.

3.78 Without prejudice to the above, the Commission reserves the right to make any amendment to this order consistent with the objects of the Andhra Pradesh Electricity Reform Act, 1998 (Act 30 of 1998).

This order is signed by A.P.Electricity Regulatory Commission on 23rd March 2003

Sd/-	**Sd/-**	**Sd/-**
(K. SREERAMA MURTHY)	**(D.LAKSHMI NARAYANA)**	**(G.P.RAO)**
MEMBER	**MEMBER**	**CHAIRMAN**

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