

Saurabh Kochrekar

*B. Chem Engg., FIAI*

Jenil Shah

*B. Com, ACA, FIAI*



# Southern Power Distribution Company of Telangana Limited

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Actuarial valuation report as per AS15 (revised 2005)

Defined benefit scheme : Leave benefits

Valuation period : 01-Apr-2017 to 31-Mar-2018

Report date : 04-Aug-2018

**Kapadia Actuaries and Consultants**

1205, Gold Crest Business Center, Opp. LT Road, Borivali West, Mumbai – 400 092

T: +91 22 4016 1446 E-mail: saurabh@kacindia.com / jenil@kacindia.com

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## 1. Introduction and Objective of Valuation

I have been approached by the Company to value the Leave benefits as at 31-Mar-2018 based on Accounting Standard (AS) 15 (revised, 2005) issued by the Institute of Chartered Accountants of India.

The results set out in this Report and its annexures are based on requirements of AS15 (revised 2005) and its application to the Plan. They have been prepared for the specific requirements of AS15 (revised 2005) and should not be used for any other purpose. In particular this Report does not constitute a formal funding actuarial valuation of the Plan and does not present any recommendation of contributions or funding levels.

This report is provided solely for the Company's use and for the specific purposes indicated above. Except where I expressly agree in writing, it should not be disclosed or provided to any third party, other than as provided below. In the absence of such consent and an express assumption of responsibility, no responsibility whatsoever is accepted by me for any consequences arising from any third party relying on this Report or any advice relating to its contents. The Company may make a copy of this Report available to its auditors, but I make no representation as to the suitability of this Report for any purpose other than that for which it was originally provided and accept no responsibility or liability to the Company's auditors in this regard. The Company should draw the provisions of this paragraph to the attention of its auditors when passing this Report to them.

The objective of the valuation is to ascertain the liability on utilization of accumulated leave. The accumulated leave may also diminish on account of utilization if permissible in the course of employment. The effect of utilization will be reflected in year to year balance and the liability will be adjusted accordingly at every annual actuarial valuation. There is no separate accounting standard which lays down the actuarial method to be adopted for valuation of liability in respect of balances of accumulated leave. However general principles applicable to defined benefit retirement benefit have been applied.

## 2. Plan Features (Characteristics & Risks)

### Characteristics Of Plan:

The benefits are governed by the Company's Leave Policy. The key provisions to best of my knowledge are given as under:

| Table 1: Plan Features   |   |     |
|--------------------------|---|-----|
| Salary for Encashment    | Gross Salary  |     |
| Salary for Availment     | Cost to company   |     |
| Benefit Payable on       | Death or Resignation/Withdrawal or Retirement                             |     |
| Maximum accumulation     | Employee  | 300 |
| Encashment Formula       | $(\text{Leave Days}) \times (\text{Salary}) / (\text{Leave Denominator})$ |     |
| Leave Denominator        | Employee  | 30  |
| Leaves Credited Annually | Employee  | 30  |
| Retirement Age           | 60 & 58 years Years   |     |

### **Changes in Inter-Valuation Period:**

There are no changes in the benefit scheme since the last valuation.

There are no special events such as benefit improvements or curtailments or settlements during the inter-valuation period.

### **Major Risk to the Plan**

I have outlined the following risks associated with the plan:

#### **A. Actuarial Risk:**

It is the risk that benefits will cost more than expected. This can arise due to one of the following reasons:

**Adverse Salary Growth Experience:** Salary hikes that are higher than the assumed salary escalation will result into an increase in Obligation at a rate that is higher than expected.

**Variability in mortality rates:** If actual mortality rates are higher than assumed mortality rate assumption then the leave benefit will be paid earlier than expected. The acceleration of cashflow will lead to an actuarial loss or gain depending on the relative values of the assumed salary growth and discount rate.

**Variability in withdrawal rates:** If actual withdrawal rates are higher than assumed withdrawal rate assumption then the leave benefit will be paid earlier than expected. The impact of this will depend on the relative values of the assumed salary growth and discount rate.

**Variability in availment rates:** If actual availment rates are higher than assumed availment rate assumption then leave balances will be utilised earlier than expected. This will result in reduction in leave balances and Obligation.

#### **B. Investment Risk:**

For funded plans that rely on insurers for managing the assets, the value of assets certified by the insurer may not be the fair value of instruments backing the liability. In such cases, the present value of the assets is independent of the future discount rate. This can result in wide fluctuations in the net liability or the funded status if there are significant changes in the discount rate during the inter-valuation period.

**C. Liquidity Risk:**

Employees with high salaries and long durations or those higher in hierarchy, accumulate significant level of benefits. If some of such employees resign/retire from the company there can be strain on the cashflows.

**D. Market Risk:**

Market risk is a collective term for risks that are related to the changes and fluctuations of the financial markets. One actuarial assumption that has a material effect is the discount rate. The discount rate reflects the time value of money. An increase in discount rate leads to decrease in Defined Benefit Obligation of the plan benefits & vice versa. This assumption depends on the yields on the corporate/government bonds and hence the valuation of liability is exposed to fluctuations in the yields as at the valuation date.

### 3. Valuation Data

I have received the data for the valuation from the Company. In preparing this Report I have relied on the completeness and accuracy of the information provided to us in writing by or on behalf of the Company and its advisors. I have not applied any detailed validation checks on the information provided. I have, however, carried out broad consistency checks.

The summary of the employee data is as follows:

| <b>Table 2: Summary Data</b>          |                    |
|---------------------------------------|--------------------|
| <b>Particulars</b>                    | <b>31-Mar-2018</b> |
| Number of Employees                   | 8,823              |
| Total Monthly Encashment Salary (Rs.) | 70,21,17,442       |
| Total Monthly Availment Salary (Rs.)  | 70,21,17,442       |
| Average Age (Years)                   | 43.89              |
| Total Full-Leave Days                 | 17,83,880          |
| Total Half-Leave Days*                | 5,07,449           |

*\* Since Half-Leave days were unavailable at the time of valuation, we have assumed that the number of HPL accumulated by the employees would be 70% of the accumulated PL balances. The HPLs considered in the valuation and shown in the above table are after limiting the PL + HPL days to 300.*

The value of discontinuance liability (if all the accrued benefits were to settle immediately) as at the valuation date is Rs. 5,92,18,60,471/-

#### **4. Basis of Valuation (Assumptions)**

I have outlined the key actuarial assumptions and the considerations in setting the same.

##### **Discount Rate:**

As per para 78 of AS 15 (revised, 2005), the discount rate used to value other long term employee benefit obligation (both funded & non-funded) should be determined by reference to market yields at the balance sheet date on government bonds. The currency and term of the government bonds should be consistent with the currency and estimated terms of other long term employee benefit obligation.

##### **Salary Growth Rate:**

This is Management's estimate of the increases in the salaries of the employees over the long term. Estimated future salary increases should take account of inflation, seniority, promotion and other relevant factors such as supply and demand in the employment market.

##### **Expected Rate of Return:**

This assumption is required only in case of funded plans. The level of returns would depend on the nature of assets and the prevailing economic scenario.

##### **Mortality:**

I have assumed the standard published mortality table without any adjustment. A snapshot of the same is given below.

##### **Withdrawal Rates:**

This is Management's estimate of the level of attrition in the company over the long term. Estimated withdrawal rates should take into account the broad economic outlook, type of sector the company operates in and measures taken by the management to retain/ relieve the employees.

### Leave Availment Rate:

Under the Last In First Out (LIFO) method, the leave utilized is first taken out from the current years' accretion and only if leave utilized is in excess of the number of leave days credited each year, such excess is taken out of accumulated balance. Cost of leave consumed out of current year's accretion will be debited under the head 'salary' and does not enter in my computation.

The summary of the assumptions used in the valuations is given below:

### Financial Assumptions:

**Table 3: Financial Assumptions**

| Particulars                    | 31-Mar-2018    | 31-Mar-2017    |
|--------------------------------|----------------|----------------|
| Discount Rate (p.a.)           | 7.60%          | 7.25%          |
| Salary Growth Rate (p.a.)      | 9.00%          | 9.00%          |
| Expected Rate of Return (p.a.) | Not Applicable | Not Applicable |

### Demographic Assumptions:

Withdrawal Rates (p.a.)

**Table 4: Withdrawal Rates per annum**

| Age Band   | 31-Mar-2018 | 31-Mar-2017 |
|------------|-------------|-------------|
| 30 & Below | 1.00%       | 1.00%       |
| 31 to 48   | 0.50%       | 0.50%       |
| 48 to 100  | 2.00%       | 2.00%       |

Mortality Rates : Indian Assured Lives Mortality (2006-08) Table

**Table 5: Sample Rates of Indian Assured Lives Mortality**

| Age (in years) | 31-Mar-2018 | 31-Mar-2017 |
|----------------|-------------|-------------|
| 20             | 0.09%       | 0.09%       |
| 30             | 0.11%       | 0.11%       |
| 40             | 0.18%       | 0.18%       |
| 50             | 0.49%       | 0.49%       |
| 60             | 1.15%       | 1.15%       |

Leave Availment & Encashment Rate:

**Table 6: Availment & Encashment Rates**

| Particulars                  | 31-Mar-2018 | 31-Mar-2017 |
|------------------------------|-------------|-------------|
| Leave Availment Rate (p.a.)  | 5% p.a.     | NA          |
| Encashment in service (p.a.) | 0% p.a.     | NA          |

### Method of Valuation

I have used Projected Unit Credit (PUC) method to value the Defined benefit obligation.

## 5. Accounting Policy

The Leave benefits are classified as Other Long-term employee benefits as per AS15 (revised 2005) and the accounting policy is outlined as follows.

Actuarial gains and losses arise due to difference in the actual experience and the assumed parameters and also due to changes in the assumptions used for valuation. The Company recognizes these actuarial gains and losses immediately in the statement of profit and loss as income or expense.

When the benefits of the plan are changed, or when a plan is curtailed or settlement occurs, the portion of the changed benefit related to past service by employees, or the gain or loss on curtailment or settlement, is recognized immediately in the profit or loss account when the plan amendment or when a curtailment or settlement occurs.

## 6. Details of Asset-Liability Matching Strategy

It was informed by the company that Leave benefits liabilities of the company are unfunded.

There are no minimum funding requirements for a Leave benefits plans in India and there is no compulsion on the part of the Company to fully pre fund the liability of the Plan.

Since the liabilities are unfunded, there is no Asset-Liability Matching strategy devised for the plan.

## 7. Valuation Results

The assumptions and methodology used in compiling this Report are consistent with the requirements of AS15 (revised 2005) and Guidance Note 26 issued by the Institute of Actuaries of India.

The results are particularly sensitive to some assumptions, such as the discount rate, level of salary inflation, & level of assumed mortality.

The Actuarial Value of Defined Benefit Obligation calculated using the above stated assumptions is Rs. 6,48,62,52,404/-

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**Mr. Jenil Shah**  
**Fellow of Institute of Actuaries of India (ID: 5568)**

## Southern Power Distribution Company of Telangana Limited

Actuarial Valuation of Leave benefits as per AS 15 (Revised 2005)

Valuation period: 01-Apr-2017 to 31-Mar-2018

### Annexure: Bifurcation of liability as per schedule III

| Particulars           | 31-Mar-2018<br>(12 months) |
|-----------------------|----------------------------|
|                       | Rs.                        |
| Current Liability*    | 92,39,37,693               |
| Non-Current Liability | 5,56,23,14,711             |
| Net Liability         | 6,48,62,52,404             |

\* The current liability is calculated as expected benefits for the next 12 months.

## Glossary of Terms

|                                 |   |
|---------------------------------|---|
| Actuarial Gain/Losses:          | Actuarial Gain/Losses occurs due to the differences between the previous actuarial assumptions and actual experience and also due to changes in actuarial assumptions at the current valuation date compared to the previous valuation. |
| Curtailment:                    | The effect of plan amendments that reduce benefits for future service   |
| Defined Benefit Obligation:     | Discounted present value of the defined benefit as at the valuation date  |
| Interest on Obligation:         | The increase the present value of a defined benefit obligation during the valuation period which arises because the benefits are one period closer to settlement.   |
| Expected Return on Plan Assets: | The expected return on plan assets over the accounting period, based on an assumed rate of return as at the start of the valuation period.  |
| Past Service Cost:              | The change in the present value of the defined benefit obligation due to any changes in the structure of benefits.  |
| Current Service Cost:           | The increase in the present value of the defined benefit obligation resulting from employee service in the current period.  |
| Settlement:                     | A settlement occurs when an enterprise enters into a transaction that eliminates all further obligations for part or all of the benefits provided under a defined benefit plan.   |