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Southern Power Distribution Company of Telangana Limited

Actuarial valuation report as per AS15 (revised 2005)

Defined benefit scheme	: Leave benefits
Valuation period	: 01-Apr-2018 to 31-Mar-2019
Report date	: 22-Jul-2019

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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-2019 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.

This report alongwith the annexure will form the basis of the balance-sheet and

disclosures to be made by the Company in respect of the Plan as at valuation date.

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 avilment rates: If actual avilment rates are higher than assumed avilment 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:

Table 2: Summary Data		
Particulars	31-Mar-2019	31-Mar-2018
Number of Employees	8,745	8,735
Total Monthly Encashment Salary (Rs.)	96,76,31,469	67,90,40,768
Total Monthly Availment Salary (Rs.)	96,76,31,469	67,90,40,768
Average Age (Years)	43.36	43.89
Total Full-Leave Days	21,72,991	17,65,619

The value of discontinuance liability (if all the accrued benefits were to settle immediately) as at the valuation date is Rs. 7,94,79,25,438/-

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-2019	31-Mar-2018
Discount Rate (p.a.)	7.65%	7.60%
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-2019	31-Mar-2018
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-2019	31-Mar-2018
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-2019	31-Mar-2018
Leave Availment Rate (p.a.)	5% p.a.	5% p.a.
Encashment in service (p.a.)	0% p.a.	0% p.a.

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. 8,71,84,79,966/-

The Charge to Profit and Loss Account for the period 01-Apr-2018 to 31-Mar-2019 works out to Rs. 3,42,60,17,274/-

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-2018 to 31-Mar-2019

Annexure 1: Funded status of the plan

Particulars	31-Mar-2019 (12 months)	31-Mar-2018 (12 months)
	Rs.	Rs.
Present value of unfunded obligations	8,71,84,79,966	5,68,75,52,270
Present value of funded obligations	-	-
Fair value of plan assets	-	-
Net Liability (Asset)	8,71,84,79,966	5,68,75,52,270

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

Valuation period: 01-Apr-2018 to 31-Mar-2019

Annexure 2: Profit and loss account for current period

Particulars	31-Mar-2019 (12 months)	31-Mar-2018 (12 months)
	Rs.	Rs.
Current service cost	34,38,56,343	23,20,54,533
Interest on obligation	40,32,47,673	47,75,16,594
Expected return on plan assets	-	-
Net actuarial loss/(gain)	2,67,89,13,258	(1,28,50,18,443)
Past service cost	-	-
Losses/(gains) on curtailments and settlement	-	-
Total included in 'Employee Benefit Expense'	3,42,60,17,274	(57,54,47,316)
<hr/>		
Total Charge to P&L	3,42,60,17,274	(57,54,47,316)
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Loss/(Gain) on obligation as per annexure 3	2,67,89,13,258	(1,28,50,18,443)
Loss/(Gain) on assets as per annexure 4	-	-
Net actuarial Loss/(Gain)	2,67,89,13,258	(1,28,50,18,443)

Southern Power Distribution Company of Telangana Limited

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

Valuation period: 01-Apr-2018 to 31-Mar-2019

Annexure 3: Reconciliation of defined benefit obligation

Particulars	31-Mar-2019 (12 months)	31-Mar-2018 (12 months)
	Rs.	Rs.
Opening Defined Benefit Obligation	5,68,75,52,270	6,58,64,35,786
Transfer in/(out) obligation	-	-
Current service cost	34,38,56,343	23,20,54,533
Interest cost	40,32,47,673	47,75,16,594
Actuarial losses/ (gains)	2,67,89,13,258	(1,28,50,18,443)
Past service cost	-	-
Losses (gains) on curtailments	-	-
Liabilities extinguished on settlements	-	-
Liabilities assumed in an amalgamation in the nature of purchase	-	-
Exchange differences on foreign plans	-	-
Benefits Paid	(39,50,89,578)	(32,34,36,200)
Closing Defined Benefit Obligation	8,71,84,79,966	5,68,75,52,270

Southern Power Distribution Company of Telangana Limited

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

Valuation period: 01-Apr-2018 to 31-Mar-2019

Annexure 4: Reconciliation of plan assets

Particulars	31-Mar-2019 (12 months)	31-Mar-2018 (12 months)
	Rs.	Rs.
Opening value of plan assets	-	-
Transfer in/(out) plan assets	-	-
Expected return	-	-
Actuarial gains and (losses)	-	-
Assets distributed on settlements	-	-
Contributions by employer	-	-
Assets acquired in an amalgamation in the nature of purchase	-	-
Exchange differences on foreign plans	-	-
Benefits paid	-	-
Closing Value of Plan Assets	-	-

Southern Power Distribution Company of Telangana Limited

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

Valuation period: 01-Apr-2018 to 31-Mar-2019

Annexure 5: Reconciliation of net defined benefit liability

Particulars	31-Mar-2019 (12 months)	31-Mar-2018 (12 months)
	Rs.	Rs.
Net opening provision in books of accounts	5,68,75,52,270	6,58,64,35,786
Transfer in/(out) obligation	-	-
Transfer (in)/out plan assets	-	-
Employee benefit expense as per annexure 2	3,42,60,17,274	(57,54,47,316)
	9,11,35,69,544	6,01,09,88,470
Benefits paid by the company	(39,50,89,578)	(32,34,36,200)
Contributions to plan assets	-	-
	8,71,84,79,966	5,68,75,52,270
Closing provision in books of accounts	8,71,84,79,966	5,68,75,52,270

Southern Power Distribution Company of Telangana Limited

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

Valuation period: 01-Apr-2018 to 31-Mar-2019

Annexure 6: Composition of the plan assets

Particulars	31-Mar-2019 (12 months)	31-Mar-2018 (12 months)
	%	%
Government of India Securities	0%	0%
State Government Securities	0%	0%
High quality corporate bonds	0%	0%
Equity shares of listed companies	0%	0%
Property	0%	0%
Special Deposit Scheme	0%	0%
Policy of insurance	0%	0%
Bank Balance	0%	0%
Other Investments	0%	0%
Total	0%	0%

Annexure 7: Bifurcation of liability as per schedule III

Particulars	31-Mar-2019 (12 months)	31-Mar-2018 (12 months)
	Rs.	Rs.
Current Liability*	1,17,04,91,505	76,33,23,663
Non-Current Liability	7,54,79,88,461	4,92,42,28,607
Net Liability	8,71,84,79,966	5,68,75,52,270

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

Southern Power Distribution Company of Telangana Limited

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

Valuation period: 01-Apr-2018 to 31-Mar-2019

Annexure 8: Table of experience adjustments

Particulars	31-Mar-2019 (12 months)	31-Mar-2018 (12 months)
	Rs.	Rs.
Defined Benefit Obligation	8,71,84,79,966	5,68,75,52,270
Plan Assets	-	-
Surplus/(Deficit)	(8,71,84,79,966)	(5,68,75,52,270)
Experience adjustments on plan liabilities	2,71,20,59,076	(1,15,06,11,493)
Actuarial loss/(gain) due to change in financial assumptions	(3,31,45,818)	(13,44,06,950)
Actuarial loss/ (gain) due to change in demographic assumption	-	-
Experience adjustments on plan assets	-	-
Net actuarial loss/ (gain) for the year	2,67,89,13,258	(1,28,50,18,443)

Annexure 9: Principle actuarial assumptions

Particulars	31-Mar-2019 (12 months)	31-Mar-2018 (12 months)
Discount Rate	7.65%	7.60%
Expected Return on Plan Assets	Not Applicable	Not Applicable
Salary Growth Rate	9.00%	9.00%
Withdrawal Rates	1% at younger ages reducing to 0% at older ages	1% at younger ages reducing to 0% at older ages
Leave Availment Rate	5% p.a.	5% p.a.
Leave Encashment Rate	0% p.a.	0% p.a.

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.