



# Institute of Actuaries of India

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09 September 2017

To

All Members

Dear All

**Subject:- Issuance of APS 27 on Employee benefits and withdrawal of other APSs.**

The Council in its meeting held on 3<sup>rd</sup> June 2017 approved APS 27: Employee Benefits after following the due process as per Principles and Procedures for issuance of Guidance Notes (GNs)/Actuarial Practice Standards (APSs) (Version 4.00 /24 08 2012).

The said APS 27 is a Practice Standard i.e., mandatory and will be effective from 1<sup>st</sup> January 2018.

As a result of the introduction of APS 27, following APSs/ GNs shall stand simultaneously withdrawn effective 1st Jan 2018 i.e. the same date as for the implementation of the APS 27.

GN 11	Actuarial Investigations of Retirement Benefit Schemes
APS12	Investigation of Retirement Benefits - Choice of Actuarial Assumptions for the Actuarial Valuations Required under AS 15
APS 13	Investigations of Retirement Benefit schemes: the actuarial reports under FAS 87, FAS 88 and FAS 132
APS 14	Illustrations of Defined Contribution Pension Scheme Benefits
APS 18	Retirement Benefit Schemes - Actuarial Reports
APS 26	Actuarial Reports under Accounting Standard 15 (Revised, 2005) issued by the ICAI
GN 28	Guidance Note on Other Employee Benefits

Yours Sincerely,

**Sanjeeb Kumar**  
President



## Actuarial Practice Standard 27 (APS 27): Employee Benefits

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## 1 Classification

Practice Standard

## 2 Legislation or Authority

This APS is for observance by the members under Section 19(2)(i) of the Actuaries Act, 2006. There is no direct legislation, as such, that has an impact on this APS related to Employee benefits. However, following are examples of legislation that may apply from time to time whilst performing particular actuarial work, as it applies to the relevant piece of advice/assignment. These legislations (as amended from time to time) and any rules/regulations issued thereunder should be taken into consideration. This list is an indicative list and is not meant to be exhaustive. There may also be other legislations from time to time that will be applicable.

- The most recent Professional Conduct Standards (PCS Ver 3.00)
- Indian Accounting Standard (Ind AS) 19 Employee Benefits
- Accounting Standard (AS) 15 (Revised 2005) - Employee Benefits issued by the Institute of Chartered Accountants of India & notified by MOCA – referred to herein after as AS 15 (R)
- Financial Accounting Standards Board Codification (e.g. ASC715 - Compensation — Retirement Benefits)
- International Accounting Standard 19 (Revised 2011) Employee benefits
- Income Tax Act 1961
- The Pension Fund Regulatory and Development Authority Act, 2013
- In case of work done for entities outside India, local laws / rules / regulations applicable in the country in which the entity is based.

## 3 Author

Advisory Group on Pension, Employee Benefits & Social Security

## 4 Compliance and Application

Whenever a member performs actuarial work related to pensions or other employee benefits in the specific areas covered in this standard, this standard will apply whether the member is working in a statutory/regulatory capacity or as a consultant/advisor or is employed by an insurance company and advising the insurance company's clients. In case of any certification or signing of any documents / reports, the Fellow Member certifying must ensure compliance with the requirements of this Standard.

Work that would broadly be covered under this Standard is:

- Calculating liabilities for accounting of the employee benefits and entitlements;
- Supporting and recommending decisions on contribution rates or benefit levels for funding of employee benefits;
- Designing of employee benefit plans;
- Calculating individual benefit values (e.g. defined benefit transfer values between one legal entity to another or actuarial factors); and
- Providing/generating illustrations and projections of defined contribution plan benefits.

The above list is indicative and there may be other situations where the principles may equally apply.



Wherever there is a Practice Standard specifically to cover a particular area (e.g. APS20 – Actuarial Practice for Social Security Programmes), then those standards should be complied with directly. This standard may refer to terms in those standards as appropriate.

## 5 Status

Issued under due process in accordance with the “Principles and Procedures for issuance of Guidance Notes (GNs) (Ver. 4.00) [adopted by the Council on 24 08 2012]

## 6 Version

Version	Effective from
1.00	Applicable from 1 <sup>st</sup> January 2018

## 7 Purpose

It has been recognized that the core principles of actuarial work and professional standards remain consistent across whatever type of actuarial work for employee benefits a member may perform. This standard aims to provide a principle based set of standards that can apply to all actuarial work for employee benefits. It aims to enable the user of actuarial work in the area of employee benefits to be able to place a high degree of reliance on the information’s relevance, transparency of assumptions, completeness and comprehensibility, including the communication of any uncertainty inherent in the work.

The framework of this standard is not meant to be technically prescriptive or designed to interpret specific legislation or rules, especially where the actual work is governed by legislation or another authority. However, there is a “**Technical Application**” section outlining how some of the principles can be applied in the Indian context, given the nuances of the most prevalent type of employee benefit plans with which the members are involved.

## 8 GENERAL PRINCIPLES

This Part contains general principles concerning actuarial work in Employee benefits that supports the purpose of this standard.

### 8.1 Judgement

Judgements concerning the application of this standard shall be exercised in a reasonable and justifiable manner. Judgement might be needed on matters such as:

- Whether the work is actuarial work?
- setting of assumptions;
- selection of model; and
- preparation of actuarial reports.

This standard does not require documentation or disclosure of judgements concerning its application unless stated otherwise.

### 8.2 Responsibility of the member

The member must ensure that his/her role in a particular assignment is clear and understood by the user. The member must state the capacity in which he/she is providing actuarial advice, the scope, its purpose, and for whom the actuarial work has been performed.



The member must clearly state the extent to which any third party can rely on the actuarial work performed and its limitations for use by third parties. Such third parties may include a company's statutory auditor or legal adviser.

It is recognized that a member's advice may be sought by users to guide and recommend appropriate inputs, assumptions and outputs in course of any assignment. This must be taken into consideration while performing actuarial work. In other words, this standard applies to the principles of actuarial work and is not restricted to the calculation of liabilities alone.

## 8.3 Data

### 8.3.1 Parties with influence or control

If any party associated with an employee benefit has any influence or control over matters affecting benefits payable to scheme beneficiaries, the data sought for an exercise shall include all such information from that party about those matters e.g. Sponsoring Company or Trustees.

It might be necessary to seek the information through the client rather than directly from the party concerned. The extent of the information sought is a matter for judgement, for example, it might not be necessary to seek information from all participating employers in a multi-employer pension scheme.

At the outset, while initiating the assignment, the member must indicate what information is required and must also be able to demonstrate the reason for requiring such information. There may be specific information required for certain type of employee benefits either for the core data input or as information to provide advice on appropriate assumptions to be recommended.

Broadly, data may constitute of:

- Employee level information such as dates of birth, joining dates, salary information, employee category, etc.
- Benefit plan information such as governing plan documentation, HR policies or practices or employee communications.
- Information to analyse trends in the development of assumption recommendations.
- Asset information where it is required to be included in the reports.

The Technical Application section outlines some specific data items for plans prevalent in India that should be given specific additional consideration.

The member may place reliance on information received from a third party as an input to perform actuarial work. The information relied upon, its source and the extent of the checks applied by the member in order to the accuracy and relevance of the information must be disclosed in the report.

### 8.3.2 Discretionary Benefits offered

The data sought for any exercise shall include information about any relevant practice concerning the discretionary benefits. Relevant practices may include:

- previous grants of discretionary benefits; and
- any existing policy regarding the exercise of discretion.



The report shall state the extent to which assumptions take account of past experience of discretionary practices and information about the exercise of discretion in the future.

### 8.3.3 Uncertainty

If there is any uncertainty (e.g. impact of legislation on the calculation of benefits), the report should include necessary references to the same.

## 8.4 Methodology

### 8.4.1 Purpose of the Investigation

The member should clearly bear in mind the purpose for which he/she has been asked to carry out an actuarial investigation. The member's choice of valuation method and assumptions will clearly be influenced by the purpose for which he/she is carrying out the investigation. Some of these purposes have been stated in the purpose section of this Standard.

A couple of examples have been explicitly expanded below:

- **Funding**

Funding benefit (e.g. retirement benefit) is resorted to, in order to ensure that by the time an employee becomes eligible for a benefit; the funds which are set aside are adequate to meet the costs of such benefits. Alternative methods of funding can be devised to ensure that the burden of financing past service liability, relating to current employees at the time of introduction of scheme benefits, is spread over a period. While selecting a funding method, guidance is provided to an employer regarding his ability to find necessary cash over different time-spans and the applicable rules of revenue authorities for tax relief, if any.

The methodology used must reflect the situation of the particular plan and the company. The member must be able to demonstrate that the funding method applied is scientific and appropriate for the exercise and must describe the method used in his/her actuarial work report.

- **Accounting**

Determining the cost of an employee benefit for accounting in the books of the employer is different from funding. Many schemes cover the benefits which are directly or indirectly related to the years of service rendered by an employee. Under the accrual principle of accountancy, for each year of service put in by an employee some benefit accrues to the employee (accrual being different from vesting) and the cost of such accrual needs to be accounted for in that year. The size of benefit accruals in accounts in a particular year will depend on the scheme rules, which will determine the benefits payable under different contingencies.

Accounting Standards usually prescribe the type of actuarial method to be applied. The most prevalent methodology applied is the Projected Unit Credit ("PUC") Method. The member must be able to demonstrate that he/she has complied with the relevant Accounting Standard. Some specific nuances on applying the PUC method for calculation of defined benefit obligations/liabilities for typical plans in India are given in the Technical Application section.



## 8.5 Assumptions

### 8.5.1 General considerations

Paragraphs related to assumptions in this standard do not apply to assumptions used in models if the assumptions are specified in regulations or in some other legal documents governing the work. Where this is the case, it must be stated explicitly in the report.

Assumptions used in, or proposed for use in the, models shall be appropriate for the purpose of the calculations for which they are used. Assumptions used in, or proposed for use in the models shall be derived from as much relevant information as is sufficient or, if there is insufficient relevant information, as is available. What information is relevant is a matter of judgement and might depend on matters such as the effective date of the calculations, the purpose and the nature of the calculations for which the assumptions will be used.

In case the assumptions are not determined by the member but received as an input for the valuation (e.g. in case of valuations carried out to support accounting of defined benefit plans) and the member has relied on the same or has not validated the appropriateness or adequacy of the assumptions, the same must be clearly spelt out in his/her report along with his views on general appropriateness of the assumptions.

Actuarial work in employee benefits involves assumptions about many matters, including:

- discount rates;
- mortality/disability rates;
- future levels of inflation;
- future levels of salary increases;
- future levels of medical inflation;
- the proportion of scheme beneficiaries withdrawing;
- the number of scheme beneficiaries exercising options such as early retirement and exchanging pension for cash on retirement; and
- running costs, etc.

Some specific considerations for calculating the defined benefit obligations/liabilities for typical plans in India are given in the Technical Application section.

Information that might be relevant to develop assumptions include matters such as:

- financial and economic outlooks;
- mortality, morbidity and other demographic projections; and
- recent experience of the client's employee benefit scheme if it is credible, as well as general industry trends.

If there is substantial relevant information from which assumptions for use in models might be derived, what relevant information is sufficient is a matter of judgement and might depend on matters such as the cost of obtaining additional relevant information, the benefit that users receive from the use of additional relevant information and the degree of uncertainty that users are prepared to accept.

If there is limited relevant information from which assumptions for use in models might be derived, what relevant information is available is a matter of judgement and might depend on matters such as the cost of obtaining additional relevant information and the time it takes to



collect. The limited relevant information that is available might need to be supplemented by other information which serves as a proxy, and by judgement.

Any opinion in a report on an assumption or a set of assumptions to be used for an exercise shall include a statement about the appropriateness of the assumptions for the purpose of the calculations for which they will be used.

The selection of assumptions might take account of any material events which are known to have occurred after the effective date of the calculations.

Special attention is to be given to those assumptions to which the Actuarial Liability and Contribution Rate are especially sensitive. Whether it is a pension scheme or a gratuity scheme, or leave encashment scheme, the calculations of liability, contribution and cost estimates will be highly sensitive to assumptions relating to withdrawal rates, salary escalation and discounting rate. Relatively mortality in service will be less significant than mortality during post-retirement in the case of pension schemes or post-retirement medical schemes.

Assumptions relating to salary escalation and discounting rate both involve an implicit assumption about rate of inflation. The past experience of the 'fund' relating to interest earnings on the fund and salary escalation will also necessarily reflect to some extent the rate of inflation experienced in the past.

## 8.5.2 Application

Given below are some examples of applying the above principles to specific purposes of actuarial task:

### 8.5.2.1 Discount Rates

In deciding the rate of interest to be assumed for discounting purpose, any statutory prescribed pattern of investment if applicable to the fund, the nature, term and yields under such prescribed investments, the likely delays and time lags in obtaining income from investments and the need of reinvestment of funds to match future liabilities and the interest rates at which such reinvestments are likely to be reinvested, must be considered. It must be borne in mind that one is looking at a long term rate and the present trend of liberalization and globalization of the Indian economy may lead towards lower real interest rates in the long term.

In the case of funds which are in existence, current experiences, possible changes including restructuring of investments to new money rates or otherwise have to be considered before deciding the rate of interest reflecting factors as mentioned above.

In the case of valuation for accounting for employee benefits, the discount rate may be chosen having regard to the accounting standard's requirements. When the accounting standard specifies that a discount rate should be chosen with reference to an appropriate term of the liabilities; due consideration should be given to a term that reflects the influence of benefit amounts and decrements assumed on that term.

### 8.5.2.2 Salary Increases

In projecting the salary increases it is necessary to keep in mind three factors -first is inflation level leading to a general change in salary level. The other two are career progression of the employees and productivity gains for the organization. Public sector





plans may have further nuances in components of pay that get used for determining benefits payable, others could be cases where rates are negotiated in advance (such as union agreements). The member may combine the various influences and arrive at suitable salary growth level. Where appropriate, a periodic salary experience study with the client's data should be conducted as an input for the client, when setting the assumption.

### 8.5.2.3 Mortality / Morbidity

When considering mortality assumptions, the latest relevant published mortality tables should be considered as the reference in setting mortality/morbidity assumptions. An in-service period against a post-retirement period may be considered separately. However, the member has to examine suitability of these rates, and where necessary, a basis with an adjustment to the table by a rating up/down or by a mathematical formula, may be used. This may apply with respect to allowing for longevity for mortality assumptions in retirement as well as allowing for the fact that the latest published relevant mortality table may be outdated.

Under retirement benefit arrangements, where on retirement the benefit amount is bought out by the company from a life or a pension office, an assumption in respect of mortality-in-retirement may not be required, since the buy-out terms offered by the life or the pension office can be used for the purposes of quantifying the liabilities, so long as the terms offered by the life or the pension office are guaranteed and the annuities bought by the company exactly replicate the benefit cash flows promised under the plan. However, in all other cases, for instance, when liabilities of an unfunded arrangement are being quantified or where the benefits on retirement are being directly disbursed by the company or the trust or when the terms offered by the life or pensions office are not guaranteed, an assumption in respect of mortality-in-retirement will be required.

It has to be appreciated that the actual experience of mortality of the scheme beneficiaries of an employer-sponsored employee benefit scheme may not replicate the experience of any published mortality table for a variety of socio-economic factors. Therefore, wherever practicable for sufficiently large schemes (say of 20,000 scheme beneficiaries or more), the past mortality experience of the scheme should be analyzed and based on the results of such an analysis, consideration be given to the extent that experienced is used for a suitable assumption for the future (this may include simply making the adjustment made to a standard table). For smaller schemes, where due to small size, statistically credible estimates are not possible, the member can rely more on published tables with an appropriate rating, if desired.

### 8.5.2.4 Attrition / Withdrawal

Withdrawal rates, both at early durations of service and near retirement date, not only have a significant impact on estimates of 'liability' and 'contributions' (more than of mortality in service) but are most difficult to estimate. The past may not be a guide to the future. Even if the past experience can be statistically analyzed and produce some meaningful rates, the future experience of withdrawals will depend on general economic conditions as also the particular conditions affecting the given employer's business. Furthermore, withdrawal rates differ significantly from scheme to scheme and within a scheme from year to year. The member has to examine these rates and any other information available to him/her and use his/her best possible judgement to cater to the long term nature of the actuarial estimates he is carrying out.



## 8.5.2.5 Other

In the case of new schemes or where the question of choice of assumptions comes up for the first time, the member will have to use his experience of other schemes, currently accepted actuarial opinion and his/her judgement, having regard to factors such as group size, type of employer's business, nature of employees' occupation, etc and maintain a certain amount of consistency in the choice of assumptions in his work.

## 8.6 Reporting

### 8.6.1 Introduction

This section of the Standard relates to the contents of reports. It is recognized that the purpose of the exercise will dictate the extent to which all the items below must be included. Much like other sections, paragraphs related to reports in this standard do not apply if the formats of reporting and disclosure are specified in regulations or in some other legal document governing the work.

The items in the following list are normally to be regarded as essential components of any report. Other information may often be desirable and suitable explanations of some features may be very important, for example, effect on the funding ratios of an improvement in benefits with retroactive effect.

### 8.6.2 Basic Information

- An opening statement indicating to whom the report is addressed, the purpose for which the investigation has been made, the date as at which the investigation has been made and the date of the report.
- A brief summary of the data on which the investigation is based, including but not limited to the number of employees, total wages/salaries, etc. The report provided should state that the member is satisfied with the accuracy and sufficiency of the data. In case of any reservation as to the reliability of the data, appropriate qualification should be made therein. Some specific data items for typical plans in India are given in the Technical Application section.
- A statement of benefits which have been valued and highlighting any changes since the most recent similar investigation. Some specific benefit plan items for typical plans in India are given in the Technical Application section.
- The report should disclose if there is a history of discretionary benefits, and it should make reference to allowance, if any, that has been made for discretionary increase in benefits. If in the inter-valuation period, the benefits have been varied, a specific mention thereof should also be made in the report.
- A brief resume of the investigations carried out, if any, to arrive at the assumptions should be described.

### 8.6.3 General

- A statement as to whether the investigation has been carried out in accordance with this Standard and any other legislative/regulatory reference that the report is designed to be in



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accordance with the applicable regulations (e.g. Accounting Standards), as on the date of signing of the report.

- There should be a statement indicating any departure from this Standard. Members are expected to comply with the Standard, unless convinced that full compliance would be inappropriate, in which case, a complete explanation and justification of all departures should be given.
- In case of exercise of actuarial judgment, the report shall include an explanation of the basis of judgment.
- The report shall make it clear to what extent any third party can rely on the actuarial work performed and its limitations for use by third parties.
- The report shall disclose the information that has been relied upon, its source and the extent of the checks applied as to the accuracy and relevance of the information.
- The report shall state the extent to which assumptions take account of past experience of discretionary practices and information about the exercise of discretion in the future.
- In case the assumptions have been received as an input for the valuation and the same has been relied on or has not been validated for appropriateness or adequacy, the report shall clearly spell out the same.
- A statement of the various assumptions made in valuing the liabilities and reasons for changes, if any, from the previous investigation.
- A commentary on any material developments in the inter-investigation period which have led to a significant variation in the experience from the assumptions last made and their impact on the valuation.
- A description of the actuarial methodology applied in calculation of the liabilities and approach to the valuation of assets, as applicable should be included.
- When describing the method and assumptions used, the report should highlight the factors that the results will be most sensitive to, and where appropriate, also indicate the quantum of this sensitivity through scenarios.
- For a funded employee benefits scheme a statement of the rates of contribution payable during the inter-investigation period; and a commentary on any material developments during such period and on any significant variations in experience from the assumptions made at the previous investigations.
- A mention of the assets held, if any, to meet the liabilities. In particular, the source from which the information of the assets is obtained and if it is obtained from unaudited accounts or has been estimated by the actuary, a statement clearly stating this should be included in the valuation report. A table showing the nature of asset categories in which investment has been made by the fund should be mentioned.

## 8.6.4 For funding recommendation valuations

- The report shall include a description / explanation of the funding objectives and of the method being employed to achieve those objectives.



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- A statement of the assumptions made in valuing both the liabilities and assets and of the method employed in deriving the contribution rate should be included. Attention should be directed particularly to those assumptions to which the contribution rate is sensitive.
- Comments should be made on the compatibility of the basis of valuing the assets with that of valuing the liabilities. Normally the assets will be valued on a basis which is compatible with the basis of valuing the liabilities. However, owing to accounting or tax or other (including practicality) considerations and requirements, the assets may be valued on a different basis and commented upon.
- The appropriate contribution rate should be recommended to achieve the funding objectives. If such objectives imply a changing contribution rate (as a percentage of the qualifying pay), an indication as to the extent and timing of such change should be given.
- It is the practice of some organisations to contribute to the Fund the maximum amount of contribution allowed by the Revenue authorities whether that contribution rate is justified by the chosen funding method and the benefits payable or not. In such case, this fact should not be glossed over by merely saying that the fund is solvent. The member needs to draw the attention of the client in his report about the actuarial surplus and what in his view should be the future contribution rate.
- A statement as to the on-going funding position including, where relevant, a comparison between assets and liabilities should be included. The latter should consider pensionable salaries projected, where appropriate, to normal retirement date, if this is not otherwise conveyed by comments on the funding objectives and the contribution rate. A statement also clearly setting out the On-going Funding Ratio on the chosen set of funding method and assumptions.
- A statement should be included as to whether or not the assets would have been sufficient at the valuation date to cover liabilities arising (including any dependents contingent benefits) in respect of pensions in payment, preserved benefits for scheme beneficiaries whose pensionable service has ceased and accrued benefits for scheme beneficiaries in pensionable service the last of which will normally be related to pensionable service to, and pensionable earnings at the date of valuation i.e. a measure of Discontinuance Funding Ratio. The purpose of this statement is to give an indication of the accrued solvency position were the scheme to discontinue at the valuation date (with cessation of accrual and salary linking) but not necessarily to wind-up. The approach adopted should bear this principle in mind.
- According to proper application of judgment and the nature of the scheme i.e. if it is a pension scheme, the statement may be based on:
  - a) the normal valuation basis, or
  - b) the estimated cost of purchasing deferred and/or immediate annuities from a Life Office or a Pensions Office.
- The approach used must be disclosed and, if it be the case, it should be pointed out that the value of the liabilities does not represent the cost required to secure the liabilities of the scheme were the scheme to wind-up as at the date of the investigation.



- If there is any shortfall in the coverage, an indication of the degree of shortfall should be given, having regard to the priorities attaching to various categories of benefits on winding-up.

## 9 TECHNICAL APPLICATION SECTION

### *(Minimum Considerations for Valuation of Defined Benefit plans for Accounting Purposes)*

The following section lists down certain specific aspects which must be considered and demonstrated while carrying out valuation for accounting purposes for certain typical defined benefit plans in India.

It should be noted that these aspects / considerations are not exhaustive and there may be other relevant aspects which should be considered while carrying out a valuation.

#### 9.1 Gratuity Benefit Valuation

##### Data

The valuation report shall include an appropriate summary statistics of data used in valuation. The summary statistics, at the minimum, shall include the following information:

- Numbers of employees valued;
- Total salary used in the valuation;
- Average age;
- Average past service / completed years of service, etc.

##### Assumptions

The valuation report shall give details of the assumptions used in the valuation. The assumptions shall typically include:

- Salary growth rate;
- Discount rate;
- Attrition rates;
- Mortality / disability rates

##### Benefit Valued

The valuation report shall include complete description of the benefits valued. This shall, inter alia, include:

- Specifying whether the gratuity benefit is considered with or without any monetary limit;
- Giving a complete description of the benefits considered for valuation, including if the benefit offered is different from the minimum benefit prescribed under the Gratuity Act and / or if there are non-uniform accrual rate for gratuity benefit (e.g. a higher benefit is offered for later years of service).
- Vesting period, if any;
- Retirement / superannuation age

##### Modeling / Model

The member shall ensure application on the Projected Unit Credit (PUC) Method in attributing benefit to the service rendered in the past. This shall mean:



- In case of employee's service in later years leading to a materially higher level of benefit than in earlier years, an enterprise should attribute benefit on a straight-line basis from:
  - (a) the date when service by the employee first leads to benefits under the plan; until
  - (b) the date when further service by the employee will lead to no material amount of further benefits under the plan, other than from further salary increases.

## Report / Output

The valuation report shall clearly and completely spell out all the inputs (data, assumptions and benefit structure) considered for valuation, including adequate disclosures and disclaimers on the extent each of the inputs have been validated. The report shall also clearly highlight the limitations and extent to which the user of the report and third parties can rely on the valuation report.

## 9.2 Leave (Privilege / Earned, Sick etc) Valuation

### Data

The valuation report shall include an appropriate summary statistics of data used in valuation. The summary statistics, at the minimum, shall include the following information:

- Numbers of employees valued;
- Leave balance as on the valuation date;
- In case of limit on maximum accumulation on leaves, leave balance considered in the valuation;
- Total salary used in the valuation for each type of projected consumption of leave (i.e. salary considered for encashment and avilment of leaves);
- Average age;

### Assumptions

The valuation report shall give detail of the assumptions used in the valuation. The assumptions shall typically include:

- Salary growth rate;
- Discount rate;
- Attrition rates;
- Mortality / disability rates;
- Assumption used for projecting future consumption of leaves (i.e. rate of leave avilment and rate of leave encashment during employment).

### Benefit Valued

The valuation report shall include complete description of the benefit valued. This shall, inter alia, include specifying how the employee may consume the leave lying to his credit i.e.:

- Specifying whether leave encashment during service is allowed or not;
- Specifying whether encashment of leaves upon termination of employment is allowed or not;
- Any limitations of utilization / avilment of leaves by the employee during employment.
- Annual rate of accrual of leaves and any limit on maximum accumulation of leaves.

### Modeling / Model



To ensure appropriate value is put on the projected consumption of leaves, the model used for valuation of accumulated leave shall be capable of projecting the consumption of leave and leave balance at each future time period. In other words, the model shall take leave balance as on the valuation date as an input and project for each time period the number of leaves availed, number of leaves encashed and the remaining number of leaves.

## Report / Output

The valuation report shall clearly and completely spell out all the inputs (data, assumptions and benefit structure) considered for valuation, including adequate disclosures and disclaimers on the extent to which each of the inputs have been validated. The report shall also clearly highlight the limitations and extent to which the user of the report and third parties can rely on the valuation report.

## 9.3 Post-Retirement Medical Benefit Schemes

### Data

The valuation report shall include an appropriate summary statistics of data used in the valuation. The summary statistics of data shall be included separately for each beneficiary type i.e. current employees, retirees, spouse of retirees in case of death of the employee etc.

### Assumptions

The valuation report shall give complete details of the assumptions used in the valuation. The assumptions shall typically include:

- Frequency and severity of benefit considered for projecting benefit outgoes under the scheme. In case the availability of data constrains use of proper frequency and severity assumptions, average cost per beneficiary may be used to project benefit outgoes under the scheme. In such a case, the average cost per beneficiary considered for valuation must be included in the valuation report;
- Future medical cost inflation;
- Discount rate;
- Attrition rate;
- Mortality and disability rates (both pre and post-employment and for all beneficiaries);
- Description of how impact of mortality improvements that may have happened since the publication of mortality tables used in the valuation until the projected benefit outgoes under the scheme has been considered in the valuation;

### Benefit Valued

The valuation report shall include necessary description of the benefit valued in the valuation report, specifying the contributions payable under the scheme by the employees and / or beneficiaries under the scheme.

### Modeling / Model

In case of benefit under the post-retirement medical benefit scheme extending to spouse of the employee as well, the model used by for valuation shall appropriately allow for joint-life probabilities.



## Report / Output

The valuation report shall clearly and completely spell out all the inputs (data, assumptions and benefit structure) considered for valuation, including adequate disclosures and disclaimers on the extent to which each of the inputs have been validated.

The report shall include the valuation output (i.e. liability) by beneficiary type i.e. the liability in respect of current employees as well as current beneficiaries.

The report shall also clearly highlight the limitations and extent to which the user of the report and third parties can rely on the valuation report.

## 9.4 Pension Valuation

### Data

The valuation report shall include an appropriate summary statistics of data used in valuation in his / her valuation report. The summary statistics of data shall be included separately for each beneficiary type i.e. current employees, retirees, spouse of retirees in case of death of the employee etc.

### Assumptions

The valuation report should include details of the assumptions used in the valuation. The assumptions shall typically include:

- Salary growth rate considered during employment for each component of salary (e.g. for basic salary, dearness allowance, grade pay, etc);
- Pension growth rate considered post-employment for each component of pension (e.g. for basic, dearness allowance, grade pay, etc);
- In case of pension valuation of public sector undertakings, whether the impact of future merger of dearness allowance is considered in the valuation;
- Discount rate;
- Attrition rate;
- Mortality / disability / morbidity rates (both pre and post-employment);
- Description of how impact of mortality improvements that may have happened since the publication of mortality tables used in the valuation until the projected benefit outgoes under the scheme has been considered in the valuation;

### Benefit Valued

The valuation report shall include necessary description of the benefit valued, including specifying the contributions payable under the scheme by the employees and / or beneficiaries under the scheme.

### Modeling / Model

In case of benefit under the pension scheme extending to spouse of the employee as well, the model used by for valuation shall appropriately allow for joint-life probabilities.

### Report / Output

The valuation report shall clearly and completely spell out all the inputs (data, assumptions and benefit structure) considered for valuation, including adequate disclosures and disclaimers on the extent to which each of the inputs have been validated.





The report shall include the valuation output (i.e. liability) by beneficiary type i.e. the liability in respect of current employees as well as current beneficiaries.

The report shall also clearly highlight the limitations and extent to which the user of the report and third parties can rely on the valuation report.

## 9.5 Long Service Award Valuation

### Data

The valuation report shall include an appropriate summary statistics of data used in valuation in his / her valuation report.

### Assumptions

The valuation report shall include details of the assumptions used in the valuation. The assumptions shall typically include:

- Salary growth rate, if relevant;
- Discount rate;
- Attrition rate;
- Mortality / morbidity / disability rates (both pre and post-employment);
- In case of benefit based on commodities (e.g. gold, silver etc), the current cost / price of the commodity used for valuation as well as assumption for future increase in the cost / price of the commodity.

### Modeling/ Model

The valuation model must ensure proper application on the Projected Unit Credit (PUC) Method in attributing benefit to the service rendered in the past. For example, in case of long service award payable after completion of 10 years of service, the model should ensure that for an employee who has completed, say, only 3 years of services, then only 3 / 10<sup>th</sup> of the benefit is recognised at the current valuation date.

### Report / Output

The valuation report shall clearly and completely spell out all the inputs (data, assumptions and benefit structure) considered for valuation, including adequate disclosures and disclaimers on the extent to which each of the inputs have been validated. The report shall also clearly highlight the limitations and extent to which the user of the report and third parties can rely on the valuation report.

## 10 Illustrations of Defined Contribution Pension Scheme Benefits

Any member providing an illustration of defined contribution benefits (including defined contribution underpins and target benefit arrangements) provided by a pension scheme shall ensure the following:

### 10.1 General

- The member should be satisfied that, in his or her opinion, the illustrations are meaningful and realistic for individual scheme beneficiaries at all relevant ages.



- The assumptions used should be consistent and reasonable keeping in view the provisions contained in other Actuarial Practice Standards relevant to the illustrations under the defined contribution pension schemes.
- Existing assets and future contributions (if any) taken into account in the illustration should be measured on basis consistent with the assumptions used.
- The member should describe or illustrate how the result will differ if the assumptions used are not borne out.
- The member should describe or illustrate how income draw down benefits will differ if the assumptions used (including annuity purchase rates) are not borne out.
- If the illustration shows different investment returns for different categories of investment, the relative risks of these different classes of investment should be explained.
- Benefit illustrations may be in real or monetary terms. For illustrations in monetary terms, an explanation of how the illustrated benefits should be adjusted to allow for inflation should be provided.
- Administrative expenses charged to a scheme beneficiaries' account, if any should be taken into account.

## 10.2 Report

- it should be ensured that the illustration is presented to the ultimate recipient in a complete and balanced way.
- If a specific calculation method (i.e., one required by a regulatory or other appropriate authority) has been used, then the illustration should make this clear. Where illustrations do not follow a particular regulatory method, it should be considered whether it is appropriate to draw attention to this in the illustration and to make clear that the illustration is not suitable for comparing with projections prepared other specified basis.
- The illustration should contain a statement of the principal assumptions used to calculate the illustrated benefits.
- The illustration should provide sufficient information to allow the ultimate recipient of the illustration to relate the benefits shown to his or her current income. The illustrated benefit may be a monetary amount, in real terms, or a percentage of projected salary.
- The illustration should make clear what death benefits and what level of pension increases in payment have been included in the illustrated benefits.
- In addition to providing basic information, the illustration should make clear:
  - which of the employee's / scheme beneficiaries' funds have been included in the illustrated benefits.
  - what level of future contributions has been assumed (including increases to future contributions);



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- whether any adjustment has been made to future contributions, for example to cover the cost of insured death benefits; and
- if any asset values used are not market values, why these values have been used.
- Income draw down illustrations should explain the way in which the absence of the normal cross-subsidy from early deaths under an annuity contract may affect the benefits eventually secured when an annuity is purchased.
- All illustrations should include appropriate risk warnings and advise the ultimate recipient to obtain regular updates of the illustration.

## 10.3 Comparison of Defined Benefit and Defined Contribution Benefits

- Particular care should be taken in preparing an illustration that will be used to compare defined benefits and benefits from defined contributions, since it is possible that scheme beneficiaries will make an irrevocable choice of future benefit arrangements based on such an illustration.
- Sufficient information should be provided to enable the scheme beneficiaries to understand the difference between defined benefit and defined contribution as regards the relative risk borne by the employer and the employee. The assumptions used to project the defined benefit and defined contribution benefits should be consistent.
- An illustration prepared for this purpose should show separately the illustrated benefits from existing assets and the illustrated benefits from future contributions, if any, so the recipient can compare both current accrued benefits and ultimate retirement benefits assuming service continues to the illustrated retirement age.
- It should be ensured that the illustration draws the scheme beneficiaries' attention to other benefits that may be advantageous to that beneficiary and which differ significantly between the arrangements being compared.

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