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***PROFESSIONAL STANDARD 2 (PS2)***

***OF***

***THE ACTUARIAL SOCIETY***

***OF HONG KONG***

**香港精算學會**

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## **PROFESSIONAL STANDARD 2 (PS2)**

### **Occupational Retirement Schemes - Actuarial Reports and Certification**

#### **APPLICATION**

- Any Actuary responsible for preparing an actuarial certificate when an occupational retirement scheme is registered under the Occupational Retirement Schemes Ordinance (the “Ordinance”), or at intervals thereafter when an actuarial certificate is to be prepared.
- The actuarial certificate is issued following an actuarial review (or “valuation”) on the scheme’s financial status.
- The guidance in this Professional Standard focuses on the preparation of the actuarial report and the actuarial certificate following an actuarial review.

#### **LEGISLATION OR AUTHORITY**

This Professional Standard applies to the preparation of actuarial reports and actuarial certificates following actuarial reviews as required under sections 31, 32, 33, 35 and 36 of the Ordinance.

#### **AUTHOR**

Actuarial Society of Hong Kong

#### **STATUS**

Draft

#### **VERSION**

#### **EFFECTIVE FROM**

1.0  
2.0

2 September 1994  
[to be dated]

## **1. INTRODUCTION**

- 1.1 When an occupational retirement scheme, which is deemed a Defined Benefit Scheme by the Ordinance, is to be registered under the Ordinance, and at periodic certification thereafter, an actuarial certificate should be prepared.
- 1.2 Whilst this Standard is intended to give guidance on the preparation of the actuarial certificate, attention is drawn to the contents of the actuarial report which provides the basis for the content of the actuarial certificate.
- 1.3 This Standard has been prepared with consideration of specific requirements of retirement schemes in Hong Kong and the environment under which they operate.

## **2. PURPOSE OF THIS STANDARD**

- 2.1. The purpose of this Standard is to ensure that the actuarial reports and actuarial certificates contain sufficient information regarding the valuation, to enable the financial status and corresponding recommended contributions to the scheme to be understood. It is not intended to restrict the Actuary's freedom of judgement in choosing the method of valuation and the underlying assumptions.
- 2.2. Although any report or certificate will be addressed to the Actuary's client, normally the relevant employer and/or the scheme's trustees, the Actuary needs to bear in mind that the report or certificate may be made available to third parties. Any limitations on the extent to which third parties can rely on the information presented should be set out in the report.
- 2.3. It should be noted that section 73 of the Ordinance enables the Registrar of Occupational Retirement Schemes to issue regulations. These regulations may impose other demands upon the Actuary when preparing an actuarial certificate which are not covered in this Standard.

### 3. THE REPORT

- 3.1. The items in 3.1.1 to 3.1.5 are regarded as essential components of the actuarial report. Suitable explanations of other features may be very important and therefore additional information may often be desirable. For example, the report may describe how the financial condition of the scheme may be affected by a pending benefit improvement exercise.

#### *Basic Information*

- 3.1.1. The report should be clear to whom it is addressed, the purposes for which the valuation is conducted, and the dates as at which the current valuation and, if applicable, the immediately preceding valuation were conducted.

It would generally be expected that one of the purposes is to form a basis with which an actuarial certificate can be prepared. References to any previous valuations should be at least to the one based on which the existing actuarial certificate in force was prepared.

- 3.1.2. The report should contain a statement confirming that it has been prepared in accordance with the Standard current at the date of the report is signed. Under exceptional circumstances where the Actuary is convinced that full compliance with the Standard is not appropriate, the non-compliant issues and justification of such non-compliances shall be stated clearly in the report.

- 3.1.3. The report should include a summary of the terms of the scheme which have been valued.

Reference should be made to the extent to which allowance has been made for discretionary increases in benefits especially where there has been a recent practice of granting such increases.

- 3.1.4. The report should contain a summary of financial and membership data on which the valuation is based, including a description of the assets, the date as of which the data was compiled, the sources of the data, and any assumptions made with respect to unavailable information.

- 3.1.5. The Actuary should comment in the report whether the data used to conduct the valuation is sufficient and reliable for the purpose of the valuation.

#### *Inter-valuation Period*

- 3.1.6. The report should provide information on the contributions paid during the inter-valuation period, and confirm that the contributions paid are consistent with the actuarial certificate relevant to the inter-valuation period. The report should also include a commentary on any material developments during the inter-valuation period.

- 3.1.7. The Actuary should describe any significant variations in experience during the inter-valuation period from the assumptions made at the previous valuation, including identification of the material sources of experience gains and losses since the previous valuation, to the extent which is reasonable for the purpose of the valuation and the size of the scheme.

### ***Funding Objectives and Funding Method***

- 3.1.8. The report should state the funding objectives adopted by the scheme, and the funding method employed to achieve those objectives. Explanation should be given for any significant changes to the funding objectives and / or the funding method employed from one valuation to another.
- 3.1.9. The Actuary should comment on the adequacy and the mutual compatibility of the funding objectives and the funding method employed, in conjunction with the actuarial assumptions made, in the context of the security of scheme benefits, stability of employer contributions, and how these could impact the future financial health of the scheme.
- 3.1.10. If the valuation reveals an Aggregated Past Service Liability which is higher than the scheme's asset, the report shall comment on how this shortfall will be made good through additional employer contributions.

In accordance with the Ordinance, this shortfall shall be amortised over a period agreed between the employer and the trustees of the scheme. The Actuary should comment on the appropriateness of the amortisation period, and to confirm that the amortisation period is consistent with the funding objectives of the scheme.

### ***Actuarial Assumptions***

- 3.1.11. The report should include a summary on the financial and demographic assumptions which have material impact on the valuation of the scheme's liabilities and assets. A brief description of the rationale underlying these assumptions should also be given.
- 3.1.12. The report should draw attention to those assumptions to which the funded status of the scheme and the recommended employer contribution are particularly sensitive, by commenting how changes in these assumptions would impact the valuation results. These would typically include the long-term rate of future salary increases and the long-term discount rate adopted in the calculation of the Aggregate Past Service Liability.
- 3.1.13. The Actuary should highlight any changes in the valuation assumptions since the previous valuation. For changes that will materially affect the financial position of the scheme, the Actuary should also indicate the impact of such changes.
- 3.1.14. The assumptions selected should reflect the Actuary's judgement on the likelihood of future events, taking into account past experience and expected future trends consistent with the expected duration of the scheme's liabilities, without giving undue weight to recent past experience. The Actuary should give independent consideration to the

reasonableness of each assumption and ensure that the assumptions are, as a whole, consistent, mutually compatible and reasonable.

- 3.1.15. If short-term assumptions are used for the purpose of assessing the scheme's asset sufficiency in the future to cover its Aggregate Vested Liabilities through the next three years (as required under the Ordinance), and that those short-term assumptions are different from the long-term assumptions adopted for the valuation, attention should be drawn to those short-term assumptions. A full explanation and justification of the short term assumptions should be given.
- 3.1.16. The Actuary should comment in the report whether the assumptions adopted for the valuation are adequate and appropriate, and the methods employed in the valuation are consistent with sound actuarial principles for the purposes of the valuation.
- 3.1.17. The report should include a comment confirming that the methods and assumptions adopted in valuing the assets and valuing the liabilities are consistent with each other.

#### ***Post-valuation events***

- 3.1.18. In practice, there will be a time lag between the effective date of the valuation and the date on which the report is signed. If the Actuary is aware of any significant events during this period that may materially and adversely impact the financial status of the scheme, these events should be highlighted in the report together with any limitation on the advice explained.
- 3.1.19. Such events may include, but are not limited to, a significant fall in the scheme asset value, an anticipated membership restructuring (e.g. redundancy program), or a significant change in the investment strategy.
- 3.1.20. If it is in the Actuary's opinion that such events will have a material and adverse impact to the financial status of the scheme, the Actuary may make allowances for such events in the funding and contribution recommendation. These allowances should be explained in the report.
- 3.1.21. If the Actuary is not aware of any such significant events, a statement to this effect should be included in the report.

### ***Assets and Liabilities***

3.1.22. The report should state clearly whether the assets was sufficient to cover the Aggregate Vested Liability and the Aggregate Past Service Liability as at the valuation date. Any surplus or shortfall in the assets should be disclosed.

3.1.23. The Actuary should state that, if all assumptions are borne out in practice, whether the scheme's assets would be sufficient to meet the scheme's Aggregate Vested Liability in the three years following the valuation date, assuming that employer contributions are paid at a level as recommended by the Actuary.

The Actuary should also highlight any major risks that the scheme's Aggregate Vested Liability would not be covered at the end of the three year period following the valuation date. For example, the Actuary may state the minimum investment returns need to be achieved by the scheme assets throughout the three-year period for the scheme to be solvent at the end of that period.

3.1.24. The Actuary should highlight any specific investment-related risks that are relevant for the funding of the scheme, for example, a significant mismatch between the allocation of scheme assets and the liability profile of the scheme.

3.1.25. The Actuary should comment on the appropriateness or otherwise of insurance contracts held by the scheme for the purpose of meeting any of the liabilities of the scheme. The Actuary should also, where appropriate, make recommendation on insurance cover for certain liabilities, and the level of such cover, if adequate cover is not in place.

### ***Contribution Rate***

3.1.26. The Report should state clearly the contribution rate (or rates, if appropriate) and any lump sum contributions, and the timing of such contributions, recommended for the scheme to meet its funding objectives.

3.2. The report should contain information which will be sufficient to permit another Actuary to make an objective appraisal of the valuation.

## **THE CERTIFICATE**

4.1. A certificate prepared pursuant to the Ordinance should include the prescribed contents as per Schedules 1 and 2 of the Ordinance.

4.2. Pro-forma actuarial certificates have been prepared and included as part of this Standard. These pro-forma certificates are expected to be consistent with the requirements set out in 4.1 above. While preparing an actuarial certificate, it is generally expected that an Actuary may adopt these pro-forma certificates directly. However, the Actuary should make amendments as appropriate

to reflect the true position of the scheme, as long as the certificate remains satisfying the requirement set out in 4.1 above.

- 4.3. A statement on the assumptions for salary increases, the valuation rate of interest and other assumptions to which the valuation results are particularly sensitive should be made on an attachment to the certificate.
- 4.4. Whilst the Ordinance does not require an explicit disclosure of the value of the liabilities, it would be informative to include a summary of the financial status of the scheme in an attachment to the certificate. Such a summary may include the value of the assets, value of the Aggregate Vested Liability and value of the Aggregate Past Service Liability.
- 4.5. If the Actuary is aware of any significant events during the period between the date of valuation and the date on which the report is signed that may materially and adversely impact the financial status of the scheme, these events should be highlighted in the attachment to the certificate together with any limitation on the recommendation explained. If the Actuary is not aware of any such events, a statement should be made in the attachment to the actuarial certificate stating that this is the case.
- 4.6. In accordance with the Ordinance, the following additional information should be stated in the attachment to the certificate:
  - 4.6.1. The period upon which a new member's accrued benefits will become fully vested, if the scheme is opened to new entrants.
  - 4.6.2. The difference in amount and an explanation should be provided if the Aggregate Vested Liability is greater than the Aggregate Past Service Liability.
  - 4.6.3. The past service liability weighted average period to full vesting for all existing scheme members should be provided if the value of scheme assets is lower than the Aggregate Past Service Liability.



## QUALIFIED ACTUARIAL CERTIFICATE

### Prepared pursuant to paragraph 1(b) of Part 3 of Schedule 1 in the Occupational Retirement Schemes Ordinance

Name of Proposed Scheme:  
Date of Actuarial Certificate:  
Date of Actuarial Valuation:  
Date of last Actuarial Valuation (if any):  
Representative Employer:  
Relevant Employer{s}:

I hereby certify that:

- (i) I have conducted an initial actuarial valuation as regards the proposed scheme as of the Date of Actuarial Valuation. The basis of the valuation, assumptions used, results and commentary on those results are detailed in a report dated [     ].
- (ii) I have made recommendations to the Relevant Employer{s} of the scheme on the financial implications of the scheme and that, in my opinion, the level of contributions required for [a specified period] to cover liabilities, including contingent and prospective liabilities, under the scheme when implemented would be as follows:
- (A) regular contributions by                     {monthly}                                         {for the periods}                      
- Members:                     {\$/% of salaries}                     [     to     ]  
- Relevant Employer{s}:                     {\$/% of salaries}                     [     to     ]
- (B) a special contribution by the Relevant Employer{s} of {\$/% of salaries} on or before [a specified date].
- (iii) Following the valuation I have received a copy of a written undertaking from {all of} the Relevant Employer{s} of the scheme to the proposed administrator of the scheme, confirming that [they / it] will contribute to the scheme in accordance with those recommendations.
- (iv) I do not expect that on the establishment of the scheme the scheme's assets would be sufficient to meet its Aggregate Vested Liability. However, provided that the scheme is funded in accordance with the above recommendations, and that all assumptions made for the Actuarial Valuation are borne out in practice, I expect that:
- (A) within [a specified period], the scheme's assets would be sufficient to meet the scheme's aggregate vested liability;
- (B) the amount of the shortfall between the scheme's assets and the scheme's Aggregate Vested Liability as at the Date of the Actuarial Valuation (as covered by the first actuarial certificate to be supplied under section 31(1) of the Ordinance) would be [\$     ]; and
- (C) on the expiration of [a specified period], the scheme's assets would be sufficient to meet the scheme's Aggregate Past Service Liability.

Signature

Name:  
Address:

Qualifications:  
Tel:  
Fax:

## FULL ACTUARIAL CERTIFICATE

### Prepared pursuant to paragraph 2(a) of Part 3 of Schedule 1 in the Occupational Retirement Schemes Ordinance

Name of Scheme:  
Date of Actuarial Certificate:  
Date of Actuarial Review:  
Date of last Actuarial Review (if any):  
Representative Employer:  
Relevant Employer{s}:

I hereby certify that:

- (i) An actuarial review has been conducted as regards the scheme as of the Date of Actuarial Review.
- (ii) In the course of the review I have had regard to the financial condition of the scheme.
- (iii) The review included a valuation of the scheme's liabilities (including contingent and prospective liabilities). The basis of the valuation, assumptions used, results and commentary on those results are detailed in a report dated [            ].
- (iv) As at the Date of Actuarial Review the scheme's assets were sufficient to meet the scheme's Aggregate Vested Liability.
- (v) Following the review I have made recommendations on the funding of the scheme for [a specified period] as follows:
  - (A) regular contributions by           {monthly}                     {for the periods}          
    - Members:           {\$/% of salaries}           [    to    ]
    - Relevant Employer{s}:           {\$/% of salaries}           [    to    ]
  - (B) a special contribution by the Relevant Employer{s} of {\$/% of salaries} on or before [a specified date].
- (vi) Following the review I have received a copy of a written undertaking from {all of} the Relevant Employer{s} of the scheme to the administrator of the scheme, confirming that [they / it] will contribute to the scheme in accordance with the above recommendations.
- (vii) (A) Provided the scheme is funded in accordance with the above recommendations, and that all assumptions made for the Actuarial Review are borne out in practice, I expect the scheme's assets would continue to be sufficient to meet the scheme's Aggregate Vested Liability throughout the period of 3 years from the Date of Actuarial Review; and
  - {(B) As at the Date of Actuarial Review, the scheme's assets were sufficient to meet the scheme's Aggregate Past Service Liability.}
  - {(B) Provided the scheme is funded in accordance with the above recommendations, and that all assumptions made for the Actuarial Review are borne out in practice, I expect that on the expiration of [a specified period], the scheme's assets would be sufficient to meet the scheme's Aggregate Past Service Liability.}

Signature

Name:  
Address:

Qualifications:  
Tel:  
Fax:

## QUALIFIED ACTUARIAL CERTIFICATE

### Prepared pursuant to paragraph 2(b) of Part 3 of Schedule 1 in the Occupational Retirement Schemes Ordinance

Name of Scheme:  
Date of Actuarial Certificate:  
Date of Actuarial Review:  
Date of last Actuarial Review (if any):  
Representative Employer:  
Relevant Employer{s}:

I hereby certify that:

- (i) An actuarial review has been conducted as regards the scheme as of the Date of Actuarial Review.
- (ii) In the course of the review I have had regard to the financial condition of the scheme.
- (iii) The review included a valuation of the scheme's liabilities (including contingent and prospective liabilities). The basis of the valuation, assumptions used, results and commentary on those results are detailed in a report dated [        ].
- (iv) {As at the Date of Actuarial Review the scheme's assets were not sufficient to meet the scheme's Aggregate Vested Liability, and the amount of the shortfall as at such date ("the Current Shortfall") was [\$        ].}  
{Although as at the Date of Actuarial Review the scheme's assets were sufficient to meet the scheme's Aggregate Vested Liability, I do not expect that the scheme's assets would continue to be sufficient to meet the scheme's Aggregate Vested Liability throughout the period of 3 years from the Date of Actuarial Review.}
- (v) Following the review I have made recommendations on the funding of the scheme for [a specified period] as follows:
- |     |                          |                    |                          |
|-----|--------------------------|--------------------|--------------------------|
| (A) | regular contributions by | <u>{monthly}</u>   | <u>{for the periods}</u> |
|     | - Members:               | {\$/% of salaries} | [    to    ]             |
|     | - Relevant Employer{s}:  | {\$/% of salaries} | [    to    ]             |
- (B) a special contribution by the Relevant Employer{s} of {\$/% of salaries} on or before [a specified date].
- (vi) Following the review I have received a copy of a written undertaking from {all of} the Relevant Employer{s} of the scheme to the administrator of the scheme, confirming that [they / it] will contribute to the scheme in accordance with the above recommendations.
- (vii) Provided the scheme is funded in accordance with the above recommendations, and that all assumptions made for the Actuarial Review are borne out in practice, I expect that:
- (A) the amount of the shortfall between the scheme's assets and the scheme's Aggregate Vested Liability at the expiry of 12 months from the Date of Actuarial Review ("the Expected Shortfall") would be [\$        ];
- (B) within [a specified period], the scheme's assets would be sufficient to meet the scheme's Aggregate Vested Liability; and
- (C) on the expiration of [a specified period], the scheme's assets would be sufficient to meet the scheme's Aggregate Past Service Liability.

Signature

Name:  
Address:

Qualifications:  
Tel:  
Fax:



## QUALIFIED ACTUARIAL CERTIFICATE

### Prepared pursuant to Part 2 of Schedule 2 in the Occupational Retirement Schemes Ordinance

Registration Number:  
Name of Scheme:  
Date of Actuarial Certificate:  
Date of Actuarial Review:  
Date of last Actuarial Review (if any):  
Representative Employer:  
Relevant Employer{s}:

I hereby certify that:

- (1) An actuarial review has been conducted as regards the scheme as of the Date of Actuarial Review.
- (2) In the course of the review I have had regard to the financial condition of the scheme.
- (3) The review included a valuation of the scheme's liabilities (including contingent and prospective liabilities). The basis of the valuation, assumptions used, results and commentary on those results are detailed in a report dated [ ].
- (4) {As at the Date of Actuarial Review the scheme's assets were not sufficient to meet the scheme's Aggregate Vested Liability, and the amount of the shortfall as at such date ("the Current Shortfall") was [\$ ].}  
{Although as at the Date of Actuarial Review the scheme's assets were sufficient to meet the scheme's Aggregate Vested Liability, I do not expect that the scheme's assets would continue to be sufficient to meet the scheme's Aggregate Vested Liability throughout the period of 3 years from the Date of Actuarial Review.}
- (5) Following the review I have made recommendations on the funding of the scheme for [a specified period] as follows:
  - (A) regular contributions by {monthly} {for the periods}
    - Members: {\$/% of salaries} [ to ]
    - Relevant Employer{s}: {\$/% of salaries} [ to ]
  - (B) a special contribution by the Relevant Employer{s} of {\$/% of salaries} on or before [a specified date].
- (6) Following the review I have received a copy of a written undertaking from {all of} the Relevant Employer{s} of the scheme to the administrator of the scheme, confirming that [they / it] will contribute to the scheme in accordance with the above recommendations.
- (7) Provided the scheme is funded in accordance with the above recommendations, and that all assumptions made for the Actuarial Review are borne out in practice, I expect that:
  - (A) the amount of the shortfall between the scheme's assets and the scheme's Aggregate Vested Liability at the expiry of 12 months from the Date of Actuarial Review ("the Expected Shortfall") would be [\$ ];
  - (B) within [a specified period], the scheme's assets would be sufficient to meet the scheme's Aggregate Vested Liability; and
  - (C) on the expiration of [a specified period], the scheme's assets would be sufficient to meet the scheme's Aggregate Past Service Liability. The weighted average of the periods of members' future membership before all members' accrued benefits become fully vested is [a specified period].
- (8) [The immediately preceding actuarial certificate of the scheme in accordance with the Ordinance was a qualified certificate. The recommended contributions set out in this certificate for the remainder of the period specified in paragraph (5) of that preceding certificate are {not} lower than the recommended contributions set out in that preceding certificate for the same period {, but I expect that even with such lower amount of contributions, the scheme's assets would be sufficient to meet the scheme's Aggregate Vested Liability at the expiry of 12 months from the Date of Actuarial Review, if all assumptions made for the Actuarial Review are borne out in practice.}
- (9) [The immediately preceding actuarial certificate of the scheme in accordance with the Ordinance was a qualified certificate and owing to reasons other than the Relevant Employer{s} failing to contribute to the scheme in

accordance with the recommended contributions set out in that preceding certificate, the Current Shortfall as stated in this certificate has exceeded the Expected Shortfall as stated in that preceding certificate.

- (a) in my opinion, the major reasons giving rise to such excess were [     ].
- (b) the amount of contributions recommended to be made in this certificate includes additional contributions which I consider are sufficient to cover such excess.]

Signature

Name:  
Address:

Qualifications:  
Tel:  
Fax:

## 5. ATTACHMENT

- 5.1. Major assumptions to which the valuation results are most sensitive:
- (a) long term rate of future salary increases : (%)
  - (b) long term discount rate : (%)
  - (c) others : ( ..... )
- 5.2. Summary of financial status of the scheme as at the Date of Actuarial Review:
- (a) value of scheme assets : ( ..... )
  - (b) value of the Aggregate Vested Liability : ( ..... )
  - (c) value of the Aggregate Past Service Liability : ( ..... )
- 5.3. [Statement confirming that the Actuary is not aware of any post-valuation events that will materially impact the financial status of the scheme, or otherwise.]
- 5.4. [The period upon which a new member's accrued benefits will become fully vested should be provided if the scheme is opened to new entrants.]
- 5.5. [The difference in amount and an explanation should be provided if the Aggregate Vested Liability is greater than the Aggregate Past Service Liability]
- 5.6. [The past service liability weighted average period to full vesting for all existing scheme members should be provided if the value of scheme assets is lower than the Aggregate Past Service Liability.]

## **APPENDIX: GLOSSARY OF DEFINED TERMS**

### **(a) Actuarial Certificate**

According to the Ordinance, an actuary has to submit an Actuarial Certificate to the Registrar (as defined in the Ordinance) within 6 months following the Date of Actuarial Review of a scheme. Either a full certificate or a qualified certificate may be issued, depending on the scheme's financial health at Date of Actuarial Review.

The Actuarial Certificate contains information regarding the financial health of the scheme at the Date of Actuarial Review, and the projected financial health at the statutory due date of the next Date of Actuarial Review, based on the actuary's funding recommendation

### **(b) Actuarial Report**

It is the report prepared by an actuary following an Actuarial Review. It contains information regarding the scheme's funded status and it forms a basis for the preparation of the Actuarial Certificate.

### **(c) Actuarial Review**

An actuarial valuation conducted by an actuary with the purpose to assess the ability of a defined benefit scheme to meet its liabilities, based on the agreed Funding Method and actuarial assumptions.

### **(d) Funding Objective**

The Funding Objectives adopted by a scheme will have an influence on the pace at which the scheme is funded, and is typically associated with a specific funding target. Usually, statutory funding requirement is also taken into account while setting Funding Objectives.

### **(e) Funding Method**

The method employed by the actuary in valuing a scheme's liabilities. The method selected shall be consistent with the scheme's Funding Objectives. The funding methods commonly used include (but not are not limited to) the Projected Unit Method, the Current Unit Method, the Attained Age Method and the Entry Age Method.

### **(f) Ordinance**

It refers to the Occupational Retirement Schemes Ordinance.

### **(g) Standard**

It refers to the Professional Standard 2 of The Actuarial Society of Hong Kong.