



Institute
and Faculty
of Actuaries

Review of Actuarial Work

Guidance on APS X2

by the Regulatory Board

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This guide imposes no obligations upon Members over and above those embodied in APS X2.

The guide does not constitute legal advice, nor does it necessarily provide a defence to allegations of misconduct.

While care has been taken to ensure that it is accurate, up to date and useful, the IFoA will not accept any legal liability in relation to its contents. The defined terms used in APS X2 apply to this guide.

Introduction

Regulatory context

[Actuarial Profession Standard \(APS\) X2](#) places requirements on **Members** of the Institute and Faculty of Actuaries (IFoA) which call for the exercise of professional judgement in relation to the review of **Actuarial Work**. The provisions of APS X2 are of general application and build on principles in the [Actuaries' Code](#) (the Code).

The requirements in APS X2 are intended to be substantially consistent with related provisions of model standards [International Standard of Actuarial Practice \(ISAP\) 1](#), issued by the [International Actuarial Association](#) (IAA), and [European Standard of Actuarial Practice \(ESAP\) 1](#), issued by the [Actuarial Association of Europe](#) (AAE). Those model standards use the term 'Peer Review' where '**Independent Peer Review**' (IPR) is used in APS X2. However, the substantive requirements of APS X2 remain substantially consistent with ISAP 1 and ESAP 1.

Purpose of APS X2

The purpose of APS X2 is to enhance the quality of **Actuarial Work**, ensuring that users of such work, in both in-house and client-facing settings, can make good decisions based on that work. In this way, the purpose of APS X2 is to help maintain and enhance the reputation of the profession and protect the public interest.

Actuaries and the organisations for which they work make significant use of review in a variety of ways. APS X2 requires individual **Members**, responsible for specific **Actuarial Work**, to ensure that appropriate and proportionate review is applied. A **Member** may judge existing governance or review processes at their organisation to meet the requirements of APS X2 with respect to specific work. To that extent, the purpose is not to replace such processes.

Purpose of this guidance

This guidance is issued by the IFoA [Regulatory Board](#) for the use by, and the benefit of, **Members**. It is designed to support **Members** through the decisions and considerations they will need to make when applying APS X2, addressing when and if a review is needed and what form that review should take.

The IFoA acknowledges that review processes will often be implemented at an organisational level. To that extent, this guidance may be of particular interest to professionalism committees, or other groups of **Members**, taking responsibility for the application of APS X2 at their organisation. However, **Members** are reminded that it is individuals, and not organisations, who are responsible for ensuring that APS X2 has been applied.

The material in this guide may be helpful to IFoA [Quality Assurance Scheme](#) (QAS) organisations when developing quality assurance arrangements for the purpose of meeting the requirements in [APS QA1](#).

Other sources of support

If you have a query about a specific situation and would like advice about the application of APS X2, you can contact the IFoA's [Professional and Regulatory Support Helpdesk](#). The Helpdesk is available to all **Members** and provides a confidential space to ask questions on the application of standards. By submitting a query to the Helpdesk, **Members** benefit from a tailored response to their query incorporating the views of the IFoA's experienced panel members.

Members working at an organisation accredited under the [QAS](#) may also find the quality assurance sections of [APS QA1](#), and the accompanying [QAS Handbook](#), helpful.

[Contact us](#)

Please direct any queries or feedback to regulation@actuaries.org.uk.

About this guidance

APS X2 requires **Members** to apply professional judgement in making decisions when considering whether to review to their work, and what form that review should take. This guidance highlights the questions **Members** may want to ask throughout that process to satisfy themselves that they have appropriately applied APS X2.

These questions are shown in the section entitled “Flowchart for applying APS X2,” which is followed by one section relating directly to each of the questions highlighted in the flowchart. In each of those sections a case study relevant to the matter at hand is embedded. In this way the guidance relates directly to the provisions of APS X2 as they are given in the standard and provides context for **Members** to consider when applying APS X2.

Professional judgement

As noted, the application of APS X2 requires **Members** to apply professional judgement at every stage. When reading this guidance, **Members** should give thought to the extent to which they will need to apply professional judgement throughout the process of applying APS X2 and are reminded of their obligations under Principle 3 (Impartiality) of the Code when applying professional judgement:

Impartiality

3. *Members must ensure that their professional judgement is not compromised, and cannot reasonably be seen to be compromised, by bias, conflict of interest, or the undue influence of others.*
 - 3.1 Members must take reasonable steps to ensure that they are aware of any relevant interests that might create a conflict.
 - 3.2 Members must not act where there is an unreconciled conflict of interest.

Flowchart for applying APS X2

If you judge the following questions to have been appropriately addressed, you should have confidence APS X2 has been applied appropriately. The questions are ordered by the related provisions in APS X2, but you may wish to approach them in a different order and return to questions iteratively throughout a review process.

Provision(s)	Question to consider
1.1	<div data-bbox="392 421 1449 539" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>1. Am I (as a Member) responsible for this piece of work?</p> </div> <div data-bbox="762 555 1075 607" style="text-align: center;">  </div> <div data-bbox="392 622 1449 741" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>2. Is it Actuarial Work?</p> </div>
1.1 and 1.3 (hence 1.3.1 - 1.3.7)	<div data-bbox="392 831 1449 949" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>3. Does the work require Work Review?</p> </div> <div data-bbox="762 965 1075 1016" style="text-align: center;">  </div>
1.2 and 1.3 (hence 1.3.1 - 1.3.7)	<div data-bbox="392 1043 1449 1162" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>4. Should review be enhanced to Independent Peer Review?</p> </div> <div data-bbox="762 1178 1075 1229" style="text-align: center;">  </div>
1.4	<div data-bbox="392 1249 1449 1368" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>5. Am I in a position to justify the approach?</p> </div> <div data-bbox="762 1384 1075 1435" style="text-align: center;">  </div>
2.1.1	<div data-bbox="392 1458 1449 1576" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>6. Does everybody involved have appropriate experience and expertise and a clear understanding of their relevant role?</p> </div> <div data-bbox="762 1592 1075 1644" style="text-align: center;">  </div>
2.2 (hence 2.1.2)	<div data-bbox="392 1664 1449 1783" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>7. Are those undertaking the review in a position to do so, and be seen to do so, with objectivity?</p> </div> <div data-bbox="762 1798 1075 1850" style="text-align: center;">  </div>
2.3 in conjunction with 1.1 and 1.2	<div data-bbox="392 1877 1449 1995" style="border: 1px solid black; padding: 10px; text-align: center;"> <p>8. Can the review be undertaken at a time such as to be capable of influencing the conclusions and outputs of the work?</p> </div>
<p>If the conditions outlined above have been satisfied, proceed with review</p>	

1. Considering responsibility for work

- 1.1 APS X2 requires that **Members** consider whether review should be applied for work for which they are responsible. APS X2 paragraph 1.1 states:

Members must consider whether to apply **Work Review** to **Actuarial Work** for which they are responsible and should, to the extent it is appropriate and proportionate, ensure that **Work Review** is applied, either in totality or by component, to that **Actuarial Work**.

- 1.2 It is therefore essential that **Members** can appropriately identify work for which they are responsible. For senior actuaries, signing-off reports produced by a team for which they have overall responsibility, this will often be clear-cut, even if they have not undertaken the initial work themselves. However, APS X2 applies to all **Members**, including students. When undertaking a particular piece of work, therefore, **Members** may need to give careful consideration as to whether they are wholly responsible for the work or if the work constitutes a contribution to a wider piece of work for which another, usually more senior, actuary has overall responsibility.

Case study 1 – considering responsibility for work

Scenario

Amahle is a student **Member** of the IFoA, working for a local government pension scheme. Much of her work is standardised, with data inputted into software templates. Her employer has made a policy decision that standard template work is not subject to review at the point of entering data, as it is unrealistic to review every piece of work at that stage. The associated templates are reviewed at regular intervals, as well as when there is a regulatory change. Amahle has concerns that, in the absence of **Work Review** at the point of data entry, inaccurate data could be entered into the template and go undetected.

Matters to consider

It is not appropriate and proportionate to apply **Work Review**, which may include **IPR**, to every piece of work at certain stages.

Amahle might want to check whether the templates she is using are able to detect data entry mistakes, or, more broadly, be satisfied that the controls applied are reasonable. She might also consider whether final reports produced from the initial work she is undertaking will be subject to **Work Review** by the individual responsible for the final report; whether it might be apparent at that stage if there have been incorrect data entries; and where her responsibility starts and ends with respect to the overall piece of work.

The **Member(s)** with overall responsibility for work of this kind at the organisation, may wish to take steps to satisfy themselves that the relevant template systems are working sufficiently well to consider it not appropriate to review work as data is being entered. It may be prudent to review templates periodically.

2. Identifying Actuarial Work

- 2.1 APS X2 specifically requires **Members** to review their **Actuarial Work**, (as opposed to work of a more general nature). APS X2 paragraph 1.1 states that:

Members must consider whether to apply **Work Review** to **Actuarial Work** for which they are responsible and should, to the extent it is appropriate and proportionate, ensure that **Work Review** is applied, either in totality or by component, to that **Actuarial Work**.

- 2.2 The term **Actuarial Work** has a broad meaning in this context and in the definition provided in APS X2.

Actuarial Work

Work undertaken by a **Member** in their capacity as a person with actuarial skills on which the intended recipient of that work is entitled to rely, which may include carrying out calculations, modelling or the rendering of advice, recommendations, findings, or opinions

- 2.3 In certain cases, it will be clear-cut that pieces of work are **Actuarial Work**, such as actuarial reports in the insurance and pensions industries where there may be a statutory requirement in a certain jurisdiction for the work to be undertaken by an actuary. However, actuaries may conduct work, perhaps numerical in nature, which could reasonably be undertaken by other professionals. For the purposes of APS X2, such work may still be considered **Actuarial Work**, in so far as the user of the work may have certain expectations about the quality of the work on the basis that it is being undertaken by a regulated professional.

Case study 2 – identifying actuarial work

Scenario

Jessica is the head of the actuarial reporting team at an insurance firm. The firm's Finance Ops director (a chartered accountant) has suggested using a new generative-AI tool to replace data checking and assumption setting parts of the quarterly valuation process carried out by Jessica's team. They have said this will save on both the 'doing' and 'reviewing' parts of the process as the AI "can be trusted" after testing is completed. Previously, although there were aspects of these steps which had some automation following prior finance transformation projects, there were still 'human-in-the-loop' checks, and these were documented as part of the APS X2 compliance approach.

Matters to consider

Paragraph 1.1 of APS X2 pertains in so far as **Members** should consider applying review to "**Actuarial Work** for which they are responsible". The work remains a piece of **Actuarial Work** and the **Member** remains responsible for it. This is true, independently of the tool used to produce the work, whether that be generative-AI, bespoke modelling software, spreadsheet packages, or a pocket calculator. Jessica should tell her team that considerations about the application of APS X2 should continue to be made according to whether a review would be "appropriate and proportionate".

3. Assessing the need for Work Review

3.1 APS X2 paragraph 1.1 states that:

Members must consider whether to apply **Work Review** to **Actuarial Work** for which they are responsible and should, to the extent it is appropriate and proportionate, ensure that **Work Review** is applied, either in totality or by component, to that **Actuarial Work**.

3.2 This requirement is of particular relevance to situations where risk management frameworks in respect of review and challenge are not already in place or where those existing frameworks are not sufficiently robust or adequate for situations involving significant pieces of work. It is not intended to place additional burdens on **Members** where there are sufficient and appropriately sophisticated systems in place.

Understanding Work Review for the purposes of APS X2

3.3 At its simplest, **Work Review** for the purposes of APS X2 is the use of a second pair of eyes to review and challenge some or all of a piece of work. More generally, it provides a mechanism to test work and the associated decisions taken. **Work Review** is defined as follows in APS X2.

Work Review

The process by which a piece of **Actuarial Work** (or one or more parts of a piece of **Actuarial Work**) for which a **Member** is responsible is considered by at least one other individual for the purpose of providing assurance as to the quality of the work in question

3.4 This is a wide definition, reflecting the broad range of contexts in which it may be applied, and requires judgement as to the form **Work Review** should take in different circumstances. **Work Review** may take several forms, including verifying that calculations have been checked; considering compliance with appropriate standards; evaluating the assumptions used; and reviewing the clarity of communications.

Deciding whether to apply Work Review

3.5 The decision as to whether to apply **Work Review** will depend on several factors including the consequences and implications of the piece of work in question. Often these factors will not be clear-cut, and **Members** will have to exercise professional judgement as to when and how a review process should be applied.

3.6 APS X2 sets out factors for **Members** to consider when deciding whether and what form of **Work Review** should be carried out (paragraphs 1.3.1 to 1.3.7). These factors will be relevant when considering the appropriateness of the review and whether it is proportionate for the circumstances of the work. The greater the significance of a piece of work, the greater the potential impact of a shortcoming in the work on those who will rely upon the work, and the potential consequential impact for the public. Greater significance will imply a greater need for review.

3.7 If an actuary can reasonably say that existing processes and controls constitute a **Work Review**, then there is no requirement to duplicate such processes and controls. Examples may include cases where the work is subject to effective challenge by a client or other third parties, such as auditors and their reviewing actuaries; challenge by in-house boards or committees for which the work is being produced; or review and challenge from other colleagues or leaders. Other quality controls affecting the work may also be stipulated by other regulators, based on the regulatory context in which the deliverer or recipient of the work operates, eg an organisation may be subject to separate regulatory oversight because it provides other regulated financial services, such as investment advice.

Case study 3 – assessing the need for Work Review

Scenario

Carlos is a consulting actuary in the UK insurance industry. He has been commissioned to produce a mortality experience analysis for an annuity book, by a major insurance firm. This is work that the actuaries at the insurance firm would normally conduct in-house, but owing to stretched resources, they have commissioned Carlos to produce this one-off piece of work to help meet approaching deadlines. Carlos is a sole practitioner, so if he wants to have his work reviewed before submitting it to his client, he will have to pay another actuary, or actuarial firm, for the review. Carlos is concerned that paying for a review will take up too high a proportion of his fee for the work.

Matters to consider

Carlos may first want to clarify whether he has overall responsibility for the work (paragraph 1.1 of APS X2). If the team within the insurance firm contracting Carlos has itself received a commission from, for example, a Board within the firm, then the individual with overall responsibility for that team may reasonably be considered by the Board to have overall responsibility for the work (and hence responsibility for review under APS X2).

Otherwise, paragraph 1.1 of APS X2 states that review should be applied “to the extent that it is appropriate and proportionate”. The cost of the review may be an appropriate consideration with respect to proportionality; however, it is important that such a consideration is weighed carefully against any concerns under the criteria set out at 1.3 of APS X2.

Carlos may want to suggest that the cost of an external **Work Review** (potentially **IPR**) is included in addition to his fee. Although such an approach may not be typical, the insurer may not want to conduct the review if resources are stretched, and this approach would certainly ensure that obligations under APS X2 have been met.

Alternatively, if Carlos intends to conduct the work according to a conventional or well-established methodology, he may judge that an **IPR** is not appropriate or proportionate and **Work Review** could be conducted by individuals at the insurer requesting the work, as long as Carlos has sufficient sight of that review, in light of the fact he is ultimately responsible for the work.

However, if Carlos is concerned that he cannot source appropriate review, he should reconsider whether he can reasonably take on the work.

4. Assessing the need for Independent Peer Review

- 4.1 When considering whether to apply **Work Review**, **Members** must consider whether it is appropriate and proportionate for the review to take the form of **Independent Peer Review (IPR)**. APS X2 paragraph 1.2 states:

In complying with paragraph 1.1, **Members** must give particular consideration to whether it would be appropriate and proportionate for such **Work Review** to be in the form of **Independent Peer Review** and, if so, should, to the extent it is appropriate and proportionate, apply **Independent Peer Review** to that **Actuarial Work**.

Understanding Independent Peer Review for the purposes of APS X2

- 4.2 **IPR** is a type, or subset, of **Work Review**. It is defined in APS X2 as a particular form of **Work Review** with additional requirements relating to the independence, experience, and expertise of the individual(s) reviewing the work. In APS X2 **IPR** is defined as follows.

Independent Peer Review

Work Review undertaken by one or more individual(s) who is, or are, not otherwise involved in the work in question and who would have had the appropriate experience and expertise to take responsibility for the work themselves

- 4.3 The IFoA acknowledges that applying **IPR** is likely to be more onerous than applying **Work Review** within the team undertaking the original work. **IPR** is more likely to be appropriate and proportionate where the relevant piece of work is particularly significant in terms of complexity, value, or the potential consequences for the users of the work or the public, should there be issues with the quality of the resulting advice. **Members** should consider paragraph 1.3, when judging whether **IPR** is required, which states:

In considering for the purposes of paragraphs 1.1 and 1.2 whether and to what extent **Work Review** should be applied to a piece of work (including whether and to what extent **Work Review** should be in the form of **Independent Peer Review**), **Members** should have regard to all of the relevant circumstances, including the following:

- 1.3.1 the degree of difficulty of the piece of work and its complexity;
- 1.3.2 the significance of the piece of work, including any financial, reputational or other consequences for the person(s) for whom the work is produced;
- 1.3.3 whether the circumstances of the piece of work make it more likely that errors could be made;
- 1.3.4 the reasonable expectations of the person(s) for whom the work is produced;
- 1.3.5 the extent to which judgement and/or analysis is required;
- 1.3.6 the application of other quality assurance controls to the piece of work; and
- 1.3.7 the desirability of assuring public confidence in the quality of the work in question.

Working in multidisciplinary teams

- 4.4 In a multidisciplinary environment, **Members** may be working with other experts who are not bound by professional regulation, or who are subject to different professional regulations. This may present challenges for **Members** in ensuring that their own obligations are met. On the basis that **IPR** is likely to be more resource intensive, this may be particularly acute in cases where a **Member** judges that **IPR** is required. However, **Members** should consider the wider review practices of the organisation or project team in which they are working and exercise judgement as to whether those practices amount to review for the purposes of APS X2.

- 4.5 The IFoA's [Ethical and professional guidance on climate change: A Guide for Members](#) and [Ethical and professional guidance on Data Science and Artificial Intelligence: A Guide for Members](#) offer specific guidance on two important areas of multidisciplinary work in which **Members** may be involved.

Case study 4 – assessing the need for Independent Peer Review

Scenario

Yan is a pricing actuary for a small insurance firm, working within a pricing team of non-actuaries. She gets on well with the team but is concerned they don't understand the complexities of her work and the duties she owes to her profession. She sometimes finds it difficult to access **IPR**, particularly in circumstances when there is pressure from underwriters to quickly alter a price. She is concerned that she might feel under pressure to submit work that could have significant financial impacts without being able to access **IPR**.

Matters to consider

APS X2, paragraphs 1.1 and 1.2 require **Members** to consider whether it is appropriate and proportionate to apply **Work Review**, including **IPR**, to a piece of **Actuarial Work**. Paragraph 1.3 sets out a non-exhaustive list of factors to consider when deciding what type of review, if any, should be applied. These include complexity, financial and reputational significance, the extent to which judgement is required, and the desirability of assuring public confidence in the quality of the work.

Given the considerations outlined at paragraph 1.3 of APS X2, Yan should first consider whether it is appropriate and proportionate to apply **IPR**, or whether internal governance and processes will provide sufficiently robust review of her work for the purposes of APS X2. If, considering the relevant circumstances, Yan judges that **IPR** is appropriate and proportionate, then she should seek an **IPR**. If **IPR** is not reasonably accessible, Yan might consider discussing the issue with her employer, explaining her professional duty to have work reviewed where appropriate and proportionate.

Yan may wish to consider speaking up, under Principle 5 (Speaking up) of the Code, which states that **Members** should speak up if they believe that a course of action is unethical or unlawful. The IFoA has [speaking up guidance](#) for **Members** which contains further information.

5. Justifying the approach

- 5.1 APS X2 requires **Member** to be able to justify the approach they have taken to **Work Review**, (including cases where they have judged that undertaking a review would not have been appropriate or proportionate). APS X2 paragraph 1.4 states that:

Members must ensure that they are in a position to justify the approach which they have taken to the application of **Work Review** for the purposes of this **APS**, if reasonably called upon to do so.

- 5.2 This relates specifically to justifying the approach taken with respect to decisions taken under paragraphs 1.1 to 1.3 of APS X2, where the **Member** responsible for a piece of work must judge whether or not it is appropriate and proportionate to apply **Work Review** (including **IPR**) to **Actuarial Work** for which they are responsible.
- 5.3 APS X2 does not explicitly require **Members** to document decisions around whether or not to apply **Work Review** (including whether or not to apply **IPR**), however, it does require **Members** to be in a position to justify the review they have applied, so **Members** may wish to document their decision-making process, as well as the outcomes of any **Work Review** undertaken. This might include documenting the reasons for deciding what form of **Work Review** to apply and an explanation as to why an **IPR** was or was not conducted.

Case study 5 – justifying the approach

Scenario

Bimala and David established their own consultancy several years ago. When they set up the business, they implemented a policy stating that actuaries at the organisation must consider whether a piece of work should be subject to **Work Review**. Their team now includes three other qualified **Members** and a student **Member**. Bimala has been looking back on a recent file to assist with a new, but similar, instruction. It's not clear to her whether the substantive and complicated work in the file was reviewed. Bimala and David are concerned that, while there might be a reasonable explanation for a review not being carried out, the approach taken and the reasons for that approach are not evident in the file.

Matters to consider

APS X2 paragraph 1.4 requires that **Members** are able to justify decisions as to whether or not to apply **Work Review** (including **IPR**) under paragraphs 1.1 to 1.3. In the first instance, Bimala and David could revisit the wording of their policy and consider adding a requirement for a note to be placed in the file, particularly with complicated work, explaining the review approach. They might then hold a meeting with the team to ensure everyone is aware of the change.

Bimala and David could consider reviewing a proportion of closed files each year to check whether **Work Review** is taking place; the nature of the reviews carried out; and whether the approaches were justified. While cold file review is not a requirement of APS X2, it is consistent with it and may assist organisations to support **Members** in applying APS X2 and assist them in assuring the quality of **Actuarial Work**.

Documenting review outputs

- 5.4 There is a range of practices regarding review outputs. Non-exhaustively, this may include a:
- record of the review taking place;
 - record of the review taking place and all issues having been resolved;
 - record produced in the form of completed checklist of review issues considered; or
 - detailed record of review feedback and resolutions arising.
- 5.5 APS X2 does not prescribe the format of review outputs; however, **Members** may find that it is useful, in terms of being able to demonstrate that review has taken place, to keep a record of that fact along with the date(s) on which review activity took place and the name(s) of the individual(s) involved.
- 5.6 While standard forms and checklists can ensure all relevant aspects of a review have been completed, a more superficial 'tick box' approach should be avoided. The recording of review outputs can assist **Members** responsible for work if the work is challenged at a later point and may be useful when reviewing the effectiveness of policies and processes.

6. Identifying appropriate reviewers

- 6.1 Everyone involved in conducting a review must be appropriately qualified and understand their role in the review. It is for the **Member** responsible for the work to ensure this is the case. APS X2 paragraph 2.1.1, in the context of paragraph 2.1, states that:

Where **Work Review** is to be undertaken in relation to **Actuarial Work** for which they are responsible, **Members** must take reasonable steps to ensure that:

2.1.1 everybody involved has appropriate experience and expertise and a clear understanding of their relevant role...

Sourcing appropriate experience and expertise

Responsibilities of individual(s) responsible for the work

- 6.2 Different review roles require different skill sets. It will be up to the **Member** responsible for the work to determine the necessary mix of skills. It is important in any type of review that the reviewer has the necessary skills and experience. A particular factor that the **Member** responsible for the work may wish to consider is whether the individual conducting the review has been involved in work of a similar nature.
- 6.3 **Members** are encouraged to develop their experience in new fields and pursue new areas of work. It is increasingly common for **Members** to find themselves working in multidisciplinary teams which may include other professionals and experts, with specific qualifications, skills, or domain knowledge, (eg data scientists, climate scientists, investment professionals, or insurance or banking specialists). APS X2 does not specify that the individuals carrying out **Work Review** should be qualified actuaries, and recognises that, depending on the circumstances, many other individuals may be suitable. It is, however, important that the individuals identified have suitable skills and experience to undertake the review being sought to provide reasonable assurance about the quality of the work.
- 6.4 The **Member** responsible for a piece of work should keep in mind that individuals who are not **Members** may be subject to different regulatory regimes and that the regulations and standards that apply to them might be less comprehensive than those applying to **Members**.
- 6.5 Some types of work may require specialist skills, for which the supply of available reviewers is limited. It may be the case that only a small group of individuals have the necessary skills and experience to carry out the review. The **Member** responsible for a piece of work is expected to take reasonable steps to identify a suitable reviewer. Where the **Member** is unable to identify a suitable individual (or individuals), they might consider what alternative arrangements can be put in place to manage risks and assure quality. The **Member** might also ensure that the commissioner of the work is aware of the limitations and is able to consider whether to modify their instructions.
- 6.6 Some **Actuarial Work** will make use of review and challenge by the recipient of the work. This is particularly the case for work undertaken by in-house actuaries or those in similar roles. This may also apply to work commissioned from an external actuary (a consultant or contractor) by members of an in-house actuarial team, where the users of the work are themselves appropriately qualified to review the work received. In such a case, **Members** will need to apply professional judgement, as to appropriateness and proportionality, in the usual way.
- 6.7 There may be cases where, for the purposes of APS X2, the individual responsible for a piece of work is also the reviewer of the work, eg when that individual is responsible for the work of an actuarial team performing the work, and where that individual does not participate in the production of the work itself, but reviews the work at the point

they are signing it off. It is unlikely, although not impossible, that such an individual could be considered sufficiently independent of the work for such a review to be considered **IPR**.

- 6.8 When this approach is taken, it will be important that the **Member** responsible for the work takes particular care to ensure that, in circumstances of disagreement, suitable objectivity is maintained (see “7. Ensuring objectivity,” below). This is likely to include giving proper consideration to the opinion provided and providing a reasoned explanation for the final position adopted.
- 6.9 It is also important to be mindful of the risks arising from inequality of status between a reviewer and the **Member** responsible for the work, and that, where the individuals are at different levels of seniority, this does not impact any individual’s willingness or ability to express their views or to provide challenge.

Responsibilities of individual(s) undertaking a review

- 6.10 **Members** are reminded of their obligations under amplification 2.1 of the Code:

2.1 Members must ensure they have an appropriate level of relevant knowledge and skill to carry out a piece of work.

- 6.11 Where the individuals undertaking a review are **Members**, they must be satisfied that they are competent to undertake the review.

Understanding individual roles in a review

- 6.12 Where a review process is carried out, it is important that all of those involved in the process understand their role and what is expected of them. It is the responsibility of the **Member** responsible for the work to ensure this is the case and it is important that this is addressed early in the process. The individual(s) taking part in the review will need to be provided with all the information regarding the work, and the context in which it is being undertaken, that is necessary to enable them to carry out the review in accordance with the agreed scope. The following non-exhaustive list includes some activities which might be carried out as part of the process:

- verifying whether calculations have been checked or, in some circumstances, checking the calculations;
- a review of the methodology and assumptions underpinning the work;
- a review of the reasonableness of the results;
- a review of the extent to which the work has been carried out in accordance with the Code, APSs, technical actuarial standards in the relevant jurisdiction, and other applicable regulatory or legislative requirements;
- assistance with professional or ethical considerations, including the scoping of a piece of work or identifying or managing conflicts of interest (see the IFoA’s [conflicts of interest guidance](#));
- a review of the clarity or quality of communications associated with the work; or
- a review of the extent to which the work is suitable for the needs and reasonable expectations of the user of the work, or of the user of the outputs to which it gives rise.

- 6.13 If the reviewer is a **Member**, they should comply with any applicable actuarial standard(s) in performing the review.

Sourcing appropriate Independent Peer Review

- 6.14 APS X2 specifically requires **Members** to consider whether it is appropriate and proportionate for a review to take the form of **IPR**. For the purposes of APS X2, **IPR** will involve the individual carrying out the review being a 'peer' in the sense of being someone who would have had the appropriate experience and expertise to take responsibility for the work themselves. The reviewer, therefore, need not necessarily be an IFoA **Member** or an actuary, as long as they would have been capable of taking responsibility for the work they are reviewing.
- 6.15 For the review to fall within the scope of **IPR** it should be carried out by an individual (or individuals) who is (or are) not otherwise involved in the work. However, in some circumstances, it may be sufficient for the reviewer not to have been involved in one specific element of the work, if that is the element they are reviewing.
- 6.16 Review by the recipient of the work can represent a valuable form of quality assurance. However, the knowledge and experience of the recipient should be considered. Their role may be limited and there is a risk that the recipient may have interests that introduce a bias into the process. Care should be taken where the inclusion of the recipient in the **Work Review** process introduces a significant risk of bias.
- 6.17 Although **IPR** requires the individual(s) carrying out a review to be independent of the work being reviewed, it does not necessarily require them to be independent of the organisation carrying out the work. There will be situations where members of another team within the same organisation have sufficient independence to carry out **IPR** for work conducted in-house. **Members** working in a 2nd or 3rd line capacity at an insurer, for example, are likely to be sufficiently independent from the original work to be able to provide **IPR** when there is clear agreement on the scope of the review. Similarly, structures may exist in a consultancy setting, either within or between client teams, where a colleague has sufficient independence from work relating to a particular client to carry out an **IPR**.

Case study 6 – identifying appropriate reviewers

Scenario
Returning to the case of Carlos, who is a consulting actuary in the UK insurance industry, consider his case in the context of who may be appropriate to conduct review. Carlos has been commissioned to produce a mortality experience analysis for an annuity book, by a major insurance firm. This is work that the actuaries at the firm would normally conduct in-house but, owing to stretched resources, they have commissioned Carlos to produce this one-off piece of work to help meet approaching deadlines. Carlos is a sole practitioner, so if he wants to have his work reviewed before submitting it to his client, he will have to pay another actuary or actuarial firm. Carlos is concerned that paying for a review will take up too high a proportion of his fee.
Matters to consider
Carlos should clarify whether he has overall responsibility for the work, within context at the insurance firm. He should ensure that his engagement letter is clear about roles and responsibilities in terms of review.
For the purposes of a review, paragraph 2.1.1 of ASP X2 states that “ Members must take reasonable steps to ensure that: everybody involved has appropriate experience and expertise...”.
The actuaries at the insurance firm who have commissioned the work, are used to carrying out the type of work they are asking Carlos to do and are therefore sufficiently expert to conduct a review.

7. Ensuring objectivity

7.1 APS X2 requires objectivity from those undertaking reviews. APS X2 paragraph 2.2 states:

Individual(s) undertaking **Work Review**, including **Independent Peer Review**, must be in a position to do so, and be seen to do so, with objectivity.

7.2 If the individual carrying out the review has a conflict of interest, then this may impact the objectivity requirement. In such circumstances, **Members** can find guidance on identifying conflicts of interest in the IFoA's [conflicts of interest guidance](#), which also explores how a review process might help mitigate conflicts.

7.3 There may be circumstances in which it is appropriate for two or more individuals of suitable experience to carry out a piece of work together and provide reciprocal review of the elements which have initially been undertaken by another, as long as the individuals undertaking review have been sufficiently independent of the initial work, they may undertake review with objectivity. However, it may be important to clearly document roles with respect to the work, to ensure that each reviewer can clearly be seen to be objective.

7.4 In some circumstances, reviewers might co-develop a solution with the individual responsible for the work. However, **Members** may consider that there are benefits in involving a fresh pair of eyes in the process and where a reviewer becomes a significant contributor to the work it may be appropriate to obtain further review.

7.5 Where another **Member** takes over responsibility for the work, it will be important to consider whether the individual previously responsible will be capable of being sufficiently objective to perform a review. However, in some circumstances the insights provided by such an individual may provide a more effective review, given their knowledge and understanding of the work and its context.

Impartiality

7.6 With respect to ensuring objectivity, **Members** are reminded of Principle 3 (Impartiality) of the Code:

Members must ensure that their professional judgement is not compromised, and cannot reasonably be seen to be compromised, by bias, conflict of interest, or the undue influence of others.

7.7 This is particularly relevant where there is an inequality of status between the individual responsible for the piece of work and the individuals conducting the review. An inequality in status could arise from material differences in positions within an organisation's hierarchy or simply arise from differences in professional standing. The risk when material differences of this type arise is that the individual(s) taking part in the review exert(s) too little or too much influence. **Work Review** is a process applied for the purpose of providing assurance as to the quality of work. As such, the **Member** responsible for a piece of work may wish to consider whether they are satisfied that they have had appropriate regard to the comments of the reviewer(s).

Resolving issues

7.8 Effective **Work Review** (including **IPR**) has the potential to involve robust challenge. Therefore, differences of opinion may arise. Review can be an iterative process which involves the reviewer passing comments back to the **Member** responsible for the work, with that **Member** responding to those comments until they are satisfied that the work has been suitably reviewed. Where there are differences of opinion, these can normally be resolved through discussion or further analysis. Throughout the process, it is important that both parties remember that the **Member** responsible for the work is ultimately accountable.

- 7.9 It is acceptable for the **Member** responsible for the work and the individual conducting the review to disagree on a point. There can be different levels of disagreement, for example, it may be the case that the individual who is not responsible for the work will be happy for the individual who is responsible to make a decision to resolve the disparity. Where the issue is material, it may be prudent to mitigate risks to users of the advice by ensuring that the element of reasonable professional difference is given sufficient prominence in any reports provided to the user. In some circumstances the disagreement might be so significant that it is preferable to obtain a third opinion.
- 7.10 Where the **Actuarial Work** in question is being carried out by a **Member** in their capacity as a reserved role holder (such as a Chief Actuary or Scheme Actuary), it is important for the **Member** to bear in mind they will remain legally responsible for the work in terms of their statutory duties. This means they must be content with the opinion that they are providing even where that piece of work is subject to review by other individuals who take a different view (even if there are two or more such reviewers who both, or all, take this different view). The fact that the reviewers have taken a different view should not mean that a reserved role holder is providing an opinion which goes against their own professional judgement.

Case study 7 – Ensuring objectivity

Scenario

Sophie is the Actuarial Function Holder at a medium-sized insurer. For a high-profile product repricing, she leads on the methodology and signs off the advice. The Chief Commercial Officer (CCO) has asked Raj, a senior actuary in Sophie's team, to perform the review because he "knows the context" and can "help land this" with the Board next week. However, Raj co-developed a key elasticity assumption with Sophie during early scoping, and his bonus partly depends on meeting a new-business target that will be easier to achieve if prices move in the direction proposed; and the CCO has set an aggressive timetable and informally indicated that "we just need a light-touch review so we don't miss the launch window". Sophie is concerned that these factors could compromise, or appear to compromise, the objectivity of the review.

Matters to consider

Under APS X2 paragraph 2.2, individuals undertaking **Work Review** must be able to act, and be seen to act, with objectivity. Raj's prior involvement in developing a material assumption and his outcome-linked remuneration introduce real and perceived threats to objectivity.

Under Principle 3 (Impartiality) of the Code, Sophie must ensure that her professional judgement is not compromised by bias, conflict of interest, or undue influence. Commercial pressure from the CCO should not dilute objectivity.

Sophie should consider appointing an alternative reviewer or using a dual-review setup, (eg adding a reviewer from the insurer's risk function or 2nd line), to mitigate conflicts. Raj should also be aware of his own conflict in this case and consider his own responsibilities under the Code.

Objectivity must be demonstrable. Sophie should document any conflicts identified, safeguards implemented, and why the approach is proportionate. If a sufficiently objective review cannot be completed in time, Sophie should escalate the issue and potentially request a revised timeline or issue advice with clear caveats.

8. Considering timing

- 8.1 APS X2 requires reviews to be conducted at a time which ensures the review can influence the conclusions and outputs of the work. APS X2 paragraph 2.3 states:

Where any form of review is applied to meet the requirements of this **APS**, it should be undertaken at a time such as to be capable of influencing the conclusions and outputs of the work.

- 8.2 Often reviews will not be undertaken at the end of a piece of work but will form part of an ongoing process undertaken throughout the production of the work. **Members** should therefore incorporate adequate time for a review into their work plan so that it can be carried out before the work is finalised.
- 8.3 Some **Members** may also find it helpful to carry out a review after the work has been finalised or after it has been issued to the user as part of a control cycle. While such reviews do not meet the requirements of APS X2 for the purposes of the particular piece of work, they can still be helpful and may assist in identifying improvements in processes and procedures which can be put into practice for future pieces of work. To the extent that such retrospective reviews have a material impact on the outputs of similar future work, they may be considered **Work Review** for the purposes of APS X2.
- 8.4 While the circumstances will often make the position obvious to the user, the **Member** may judge it helpful to stress when advice has not been subject to a review process (or alternatively that it has been subject to review but that this review has in some way been limited, for example, it did not take the form of **IPR**) and that the user should therefore exercise caution when acting or taking decisions based on the advice.

Case study 8 considering timing

Scenario

Zara is an actuary who regularly provides expert witness reports to both business and consumer clients for use in court proceedings. At short notice, she has been asked to provide a report on a complex issue that could have significant financial consequences for the parties involved. Were it not for the timescales involved, Zara would seek **IPR**. However, in the time she has been given by the instructing party, this will not be possible. Instead, she is considering pressing ahead with the report and having it reviewed after it has been submitted.

Matters to consider

Paragraph 2.3 of APS X2 requires that review should be undertaken at a time such as to be capable of influencing the conclusions and outputs of the work. If Zara considers it appropriate and proportionate for her report to be reviewed, taking into account all relevant circumstances (APS X2 paragraph 1.1 to 1.3) and cannot do this in the time she has been given by the instructing party, then Zara should consider whether she can reasonably accept the instruction.

Zara should be clear as to whether the timeframe given to her is the result of court rules, or simply a result of the instructing party providing an unrealistic timeframe. If the prior, the Code allows that such rules take precedence (over the Code, and hence APS X2). If the latter, Zara should contact those instructing her to explain the need for review and see if an extension can be granted. If not, she should consider whether this is enough to justify not having her work reviewed (in accordance with APS X2 paragraph 1.4).

Periodic checks relating to standardised pieces of work

- 8.5 Organisations may adopt standardised approaches to pieces of **Actuarial Work** which are of a similar type and produced on a frequent basis (eg pensions scheme valuation reports within an actuarial consultancy), or of an identical type and produced on a regular basis (eg a quarterly Chief Actuary report within an insurer). In such cases, the associated template(s) and model(s) that an organisation uses to produce such work may be subject to periodic review as part of a continuous improvement process. Such reviews, where they lead to changes to the standardised approach, may be considered appropriate for the purposes of APS X2 paragraph 2.3, in so far as they take place at such a time as to have a material impact on future pieces of **Actuarial Work** based on the improved template(s) or model(s). This would include cold file review, which leads to changes in approach to standardised pieces of work.



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