



Tool: Assessment checklist with a scoring matrix for information quality

(Step 4. Assess the quality of information in Source Regulator's review)

Introduction to the tool

This tool (*Assessment Checklist with a Scoring Matrix for Information Quality*) is intended to support implementation of Step 4 of the process introduced in the IAEA TECDOC-2098, *Collaborative Reviews and Effective Leveraging* [1].

The tool includes a qualitative assessment checklist (Section 'Assessment checklist with a scoring matrix') using criteria corresponding to key dimensions of the information quality supported by a scoring matrix. The checklist can, in principle, be used without the scoring matrix; however, the use of a scoring system is highly recommended to assess the quality of information provided by the Source Regulator (Regulator A in Ref. [1]).

It is expected that the Recipient Regulator (Regulator B in Ref. [1]) would fill in the Checklist Table below using the criteria and suggestions/recommendations for their interpretation (Section 'Suggestions/recommendations for interpreting criteria and questions to help with the assessment checklist (if applicable)') and would also score each of the quality dimensions based on the scoring recommendations provided (Section 'Recommendations regarding the use of the scoring matrix'). The outcomes can then be actioned in line with the recommendations in Section 'General recommendations on how to action the scoring results'. The final Section 'Use cases for the assessment checklist with the scoring matrix' provides an example of the use of the tool.

Assessment checklist with a scoring matrix

Aspect/ topic	Relevance 	Score (1–5)	Timeliness 	Score (1–5)	Clarity 	Score (1–5)	Accuracy 	Score (1–5)	Reliability 	Score (1–5)	Completeness 	Score (1–5)	Sufficiency 	Score (1–5)	Other	Score (1–5)
Topic 1																
Topic 2																
Topic 3																

* Overall, it is recommended to have clarity about the Recipient Regulator's own 'use case' in terms of the needs and objectives, as that would inform the way in which the above criteria will be applied. It is important to remember that relevant IAEA Safety Standards can be used to assess various dimensions of data quality.



Relevance (i.e. does it meet the needs): Does the review align with the Recipient Regulator's regulatory requirements?



Timeliness (i.e. is it up to date, especially if long time span, new operating experience (OPEX), design changes): Have there been any significant design updates or regulatory changes since the review? Is there a way to check for design updates? (Is there a designated party responsible for updating information?)



Clarity (i.e. understandability, interpretability, organization, logic, coherence): Are key terms well-defined? Is the document logically structured? Are the terms understandable to the Recipient Regulator?



Accuracy (i.e. are there any major errors, contradictions, inconsistencies): Are data sources cited and verified? Are assumptions correct? Are methodologies appropriate?



Reliability (i.e. sources, references, strength of evidence, level of peer review): Were confirmatory calculations or peer reviews conducted? Is there peer review literature supporting the conclusions? Do you have confidence the information is correct?



Completeness (i.e. having all necessary elements): Are all required elements covered? Are key safety aspects addressed?



Sufficiency: Is this information adequate in scope and detail for the Recipient Regulator?

Suggestions/recommendations for interpreting criteria and questions to help with the assessment checklist (if applicable)

Recommendations regarding the use of the scoring matrix

Consider developing a scoring system (e.g. 1–5 scale) to rate each dimension of information quality. This helps in quantifying the level of confidence in the review. The suggested scoring system is an example, and any other scoring system can be used; it is advisable to have some type of scoring system, however.

Scoring guidance for the matrix (can be adjusted as needed)

Score	Grade description	Guidance for application
1 Poor Cannot be leveraged	Significant deficiencies, unreliable or incomplete	- The information lacks clarity, contains major inconsistencies or is difficult to interpret. - Critical safety aspects are missing or inadequately addressed. - No or insufficient references to credible sources or independent reviews. - Significant gaps exist, requiring substantial additional information or reassessment.
2 Weak Cannot be leveraged	Some deficiencies that impact usability, limited reliability	- The information is somewhat unclear, requiring interpretation or assumptions. - Several inconsistencies or inaccuracies are present. - Some references are missing, or the evidence is weak. - There are some gaps in the information that would require additional information not readily available.
3 Might need more work	Meets minimum requirements, but could be improved	- The information is generally clear and follows a logical structure. - Minor inconsistencies exist, but do not significantly impact reliability. - References are provided but may lack depth or independent validation. - Some gaps exist but are not critical to the assessment.
4 Good	Clear, reliable, and well-supported information	- The information is well-structured and easy to understand. - No major inconsistencies, and minor discrepancies are explained. - References and supporting materials are strong, including independent reviews. - Few or no gaps, with minor improvements possible.
5 Excellent	Highly detailed, comprehensive and fully reliable	- The information is exceptionally clear, structured and unambiguous. - No inconsistencies or inaccuracies found. - Strong and diverse references, including internationally recognized standards and independent peer reviews. - No gaps or missing information, and all safety aspects are fully addressed.

General recommendations on how to action the scoring results

Aggregate scores across different criteria to determine the overall confidence in the Source Regulator's review (reviews with low scores (1–2) cannot be leveraged)	Flag middle scores (3) for additional investigation, requests for more information or independent verification	Consider prioritizing certain areas and doing them first*
---	--	---

* This aligns with a standard recommendation for the information quality assessment of large volume documents to perform purposeful sampling (selection of the most important/most appropriate sections for the effective use of limited resources; sections should, however, be sufficient for extrapolating with respect to the document as a whole). For example, some least impactful areas could be chosen for preliminary screening, and even if those were to be found lacking in quality, then there would be no need to proceed. In any case, it is recommended to document sampling decisions, including criteria, rationale and any adjustments made.

Use cases for the assessment checklist with the scoring matrix

Scenario 1: The Recipient Regulator is considering leveraging the safety evaluation of a fuel qualification technical report from the Source Regulator.

Goals/objectives of the Quality Assessment: Determine the extent to which Recipient Regulator can leverage the Source Regulator's safety evaluation.

Aspect/ topic	Relevance 	Score (1–5)	Timeliness 	Score (1–5)	Clarity 	Score (1–5)	Accuracy 	Score (1–5)	Reliability 	Score (1–5)	Completeness 	Score (1–5)	Sufficiency 	Score (1–5)
Topic 1	Fuel design proposed for the Recipient Regulator is identical to the design evaluated by the Source Regulator.	5	Safety evaluation was completed in 2023, and there is no new OPEX that would call any of the findings into question. The Source Regulator is still relying on this assessment.	5	Safety evaluation lists findings against the Source Regulator's regulations. Limitations or conditions associated with the findings are listed.	4	No apparent contradictions or inconsistencies between the technical report and safety evaluation. Revisions are consistent between the report and evaluation, and both are the most current version.	5	The Source Regulator has experience performing fuel qualification. The safety evaluation clearly documented the basis for the findings. Report includes confirmatory calculations, and there has been significant OPEX with this fuel design after the analysis.	5	Safety evaluation appears to address all items in the technical report.	5	Need to review results of Step 3 for fuel qualification to determine if the Recipient Regulator needs to make any additional findings.	3

Conclusion: The Recipient Regulator has confidence to leverage the Source Regulator's safety evaluation.

References

[1] INTERNATIONAL ATOMIC ENERGY AGENCY, *Collaborative Reviews and Effective Leveraging* — The IAEA's Nuclear Harmonization and Standardization Initiative, IAEA-TECDOC-2098, IAEA, Vienna (2025), <https://doi.org/10.61902/iaea.psrj-fkjj>