NWCG IRM-PMO Document Review Guidelines

Policy, Process & Standards

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Information Resource Management

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Document Review
Policy & Process

Policy

The PMO conducts courtesy reviews of documents when requested, as well as the mandatory reviews of NWCG project documents. For NWCG projects, mandatory reviews include reviews of project charters, project plans, and other project documents and deliverables as identified in project plans.

The essential difference between these two types of reviews is in the expectation of the requestor to accept and use the recommendations of the PMO review. The final recommendations from a mandatory review are expected to be accepted and incorporated into the final document. The recommendations from a courtesy review are offered to the requestor, without obligation, for use as the requestor sees fit.

If any of the recommendations from a mandatory review are not acceptable to the requestor, the requestor is expected to document the objection and then discuss the recommendation and objection with the PMO to resolve the conflict in an acceptable manner. In reaching a consensus, the PMO and the requestor both reserve the right to documented dissent.

The PMO will conduct courtesy reviews only as the PMO workload permits.

Adequate time must be allowed for the review and potential follow-up discussions, as well as time for the requestor to finalize the document.

Process

In response to a request for a mandatory review of a document:

1. The PMO will review the document and prepare a Document Review Report using an observation/recommendation format and give the report to the requestor.
2. The requestor should then respond to the report by either:
    a. Accepting and using the recommendations, or
    b. Documenting the reason for not accepting and using the recommendation(s).
3. If any recommendations were not accepted, the PMO will review the requestor's objections. After review, the PMO will either:
    a. Concur with and accept the objection(s), or
    b. Will engage in discussion with the requestor to resolve the disagreement.
4. The requestor will send a copy of the final document to the PMO. This copy should be electronic, if possible.

In response to a request for a courtesy review of a document,

1. The PMO will review the document and prepare a Document Review Report using an observation/recommendation format and give the report to the requestor.
2. The PMO will offer to engage in discussion with the requestor if any recommendations are questioned or not acceptable.
3. The PMO may ask the requestor to send a copy of the final document to the PMO. This copy should be electronic, if possible.

Review Focus

Unless otherwise requested and agreed upon, a document review will focus on the document's content, context, format, and grammar. The document quality attributes of concern in IRM-PMO document reviews are correctness, usability, appropriateness, and maintainability. As appropriate and applicable to the document under review, the review factors and criteria may include:

- Adherence to documentation standards,
- Compliance with contractual requirements,
- Consistency and traceability,
- Readability, comprehensibility and general understandability,
- Technical adequacy and feasibility of approach,
- Appropriate degree of completeness,
- Testability of requirements,
- Use of appropriate requirement, design, or coding techniques,
- Appropriate level of detail,
- Appropriate allocation of sizing, timing, or resources,
- Adequate test coverage of requirements,
- Adequacy of proposed tools, facilities, procedures, or resources,
- Appropriate content for intended audience,
- Support of NWCG enterprise architectures,
- Alignment with NWCG & IRM-PMO project management objectives.

Document Review
Review Standards

Factors & Criteria

The following individual quality factors and criteria may or may not apply to a specific document review, depending on the type of document being reviewed and depending on the focus of the review. The quality evaluation matrices at the end of this document identify which criteria apply to a specific document type or review focus.

Adherence to documentation standards

This factor identifies appropriate and applicable documentation standards and required or recommended document formats and assesses adherence to these. In most cases, required formats for documents will be given by NWCG IRM-PMO guidelines and formats. Other sources are project or contractor-proposed formats and special contract-specified formats. Evaluation should be relatively straightforward based upon the applicable guidance.

Compliance with contractual requirements

Contractual requirements are cited in the statement of work (SOW) and standards and specifications included by reference in the contract. These are the sources that should be used in evaluating documents with respect to this criterion.

Consistency

Internal consistency

Internal consistency means that the document being evaluated does not contradict itself in either content or style. Criteria for consistency include:

1. All statements must be compatible,
2. A given term must have the same meaning throughout,
3. A given item or concept must be referred to by the same name or description throughout, and
4. The level of detail and presentation style must be the same throughout.

Consistency with indicated documents

Consistency between documents means that two or more documents are free from contradictions with one another in either content or style. Criteria for consistency include:

1. All statements must be compatible,
2. A given term must have the same meaning throughout,
3. A given item or concept must be referred to by the same name or description throughout, and

4. The level of detail and presentation style must be the same, taking into account inherent differences in the document types.

Understandability

Understandability, also known as Comprehensibility or Logical Readability, is defined as the ease with which the document can be comprehended. Understandability is a subjective, yet critical component of quality. Criteria for understandability include:

1. Use of generally accepted rules of grammar, capitalization, punctuation, symbols, and notation,
2. Non-standard terms, phrases, acronyms, and abbreviations are defined,
3. The level of complexity is appropriate to the intended audience, and
4. The material being presented can be interpreted in only one way.

Technical adequacy

Technical adequacy is a subjective factor that covers the following types of questions:

1. Is the overall approach sound?
2. Does the document violate known facts or principles?
3. Is it consistent with approaches known to be successful on other projects?
4. Is it well researched or based on proven prototypes?
5. Does the document appear well thought out, not thrown together?
6. Does the approach make sense both technically and practically?

Appropriate degree of completeness

Completeness means that all constituent parts are present and that each part is addressed in adequate detail. A document or product may be in process and not yet final at the time of the review. Because of this, the reviewer must judge whether the degree of completeness at a particular time is adequate. Sources of information to assist in making this determination include project schedules and project plans. At every stage of document development, all required sections and section headers should be present. Completeness of paragraph content depends upon when the required information is, or should be, known. Criteria that may apply, depending on the document, include:

1. Identified and appropriate timeframes,
2. Identified and appropriate contact information,
3. Identified intent and purpose of the document,
4. Identified and appropriate document audience, and
5. Identified and appropriate reviews and approvals.

Traceability

Traceability to indicated documents

Traceability, as used in this standard, means that the document being reviewed is in agreement with any predecessor documents. Traceability has three criteria:

1. The document fully implements the applicable stipulations of a predecessor document,
2. All material in a subsequent or lower-level document has its basis in the predecessor document, that is, no untraceable material has been introduced, and
3. The two documents do not contradict one another.

Internal Traceability

Internal traceability means that a section of the document is in agreement with other sections of the document. Such logical traceability is the ability to follow the logical train of thought in the document through all of the pertinent parts, regardless of whether the parts are contiguous or not. Traceability has three criteria:

1. A referenced section contains the information or otherwise fully implements the applicable stipulations indicated in the reference,
2. All material in a lower-level or detailed section of the document has its basis in the predecessor sections, that is, no untraceable material has been introduced, and
3. The sections of the document do not contradict one another.

Feasibility

Feasibility is the degree to which plans, requirements, or design can be implemented given the state of the art, schedule and resource constraints, available tools and techniques, and other factors affecting the software development project. An additional consideration is that items that are feasible in isolation may not be feasible when taken together. Each item must therefore be evaluated in the context of accompanying items.

Appropriate allocation of sizing, timing, and resources

A straightforward aspect of this factor is whether the total of the allocated amounts is within the overall allocation. More subtle assessments include:

1. Do the allocations seem realistic and feasible?
2. Do the allocations take into account the demands on each unit component, or do they seem to be mere mechanical allocations, such as dividing available resources by number of units?
3. Are the allocations based on prototyping and other analysis, or just on guesswork?

Testability of requirements

A requirement is considered to be testable if an objective, feasible test can be designed to determine whether the requirement is met by the solution. An example of an untestable

requirement is “The module shall be composed of small units that execute as quickly as possible.” A testable requirement would state “The module shall be composed of units each smaller than 100 lines of executable code, and each executing in under *5* microseconds.”

Use of appropriate requirement, design, or coding techniques

Agency and NWCG policies may specify acceptable requirement, design, and coding techniques. A contract may describe exceptions or augmentations to the techniques that have been approved by the contracting agency. The SOW may also expand upon, clarify, or change the technique to be used. These sources should be the basis for determining the techniques to be used and for evaluating compliance.

Appropriate level of detail

Level of detail is a subjective factor whose evaluation must be based on the intended use and audience of the document. A document can err in either direction: a document that is supposed to provide an overview might be too detailed and a document that is supposed to provide details might be too high-level. Review of the applicable documentation plan, document descriptor, and other documents of the same type may aid in determining whether the level of detail is appropriate.

Adequate test coverage of requirements

This factor applies to test planning documents. Questions to be asked include:

1. Is every requirement addressed by at least one test?
2. Have test cases been selected for an “average” situation as well as for “boundary” situations such as minimum and maximum values?
3. Have “stress” cases been selected, such as out-of-bounds values?
4. Have meaningful combinations of inputs been selected?
5. Are test cases efficient in that they do not test the same feature over and over?

Adequacy of proposed tools, facilities, procedures, or resources

This review factor applies to planning documents. Evaluation requires judgment as to whether the proposed items will be adequate to fulfill their intended purpose. A useful evaluation technique is comparison with past projects, when possible.

Appropriate content for intended audience

Each document has an intended audience, and must be evaluated according to how well it addresses the needs of that audience. A system user, for example, does not need design details, but those same details are critical for software support personnel. The applicable documentation plan and document descriptor provides the best guidance for making this decision. Within the guidance provided, however, there may still be room for judgment as to whether the material provided is suitable for the intended audience.

NWCG enterprise architectures alignment & support

The NWCG has defined an IRM strategy and Wildland Fire Business Model. This factor evaluates the document's agreement with such defined strategies and models. Questions to be asked include:

1. Does it agree with defined NWCG enterprise views?
2. Does it support/align with NWCG data architecture?
3. Does it support/align with NWCG application architecture?

Alignment with established project management objectives

This factor applies to project management and planning documents. Documents will be evaluated for adherence to, and support of, project management objectives and guidelines established by the NWCG IRM-PMO. Documents will also be evaluated for adherence to, and support of, published project management best practices.

Quality Evaluation Matrices

Quality factor applicability by attribute

The following matrix identifies the various factors that apply or influence the evaluation of a specific quality attribute. Example: if evaluating for correctness, the technical adequacy and feasibility factors should be used while the consistency and readability factors do not apply. Consistency and readability factors do apply, however, when evaluating a document for usability.

Factor \ Attribute	Correctness	Usability	Maintainability	Appropriateness
Consistency		X	X	
Understandability		X		
Readability		X		
Technical adequacy	X			
Traceability		X	X	
Feasibility	X			
Appropriate allocation of …	X			X
Testability	X	X	X	
Adherence to standard(s)		X	X	
Contractual compliance	X			
Completeness	X	X		
Use of appropriate techniques	X			X
Appropriate for audience		X		X
Appropriate level of detail		X		X
Adequacy of test coverage	X	X		X
Adequacy of proposed …	X	X		X
Support of enterprise architectures				X
Alignment with project management objectives				X

Quality factor applicability by document type

The following matrix identifies the various factors that apply or influence the evaluation of a specific type of document. Some documents may be a combination of more than one type – such documents should be evaluated for combined set of factors from all applicable document types. Example: A user's manual is an instructional document. If the manual is developed by a contractor, it is a contracted deliverable. Such a manual should be evaluated for the factors identified in the "Instructional" column *and* those identified in the "Contracted Deliverable" column.

Factor / **Document type**	**Planning**	**Requirements or Specification**	**Instructional**	**Contracted Deliverable**		
Consistency						
Understandability						
Readability						
Technical adequacy						
Traceability						
Feasibility						
Appropriate allocation of …						
Testability						
Adherence to standard(s)						
Contractual compliance						
Completeness						
Use of appropriate techniques						
Appropriate for audience						
Appropriate level of detail						
Adequacy of test coverage						
Adequacy of proposed …						
Support of enterprise architectures						
Alignment with project management objectives						

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