South Florida Water Management District – Jacksonville District, U.S. Army Corps of Engineers

CGM NUMBER-REVISION: 027.00

EFFECTIVE DATE: 12/18/ 2003

CATEGORY: RECOVER

SUBJECT: Independent Peer Review of RECOVER Documents

DESCRIPTION:

This memorandum provides guidance to both Jacksonville District, U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) staff for conducting external, independent peer review of technical and scientific documents and other products of the REstoration COordination and VERification (RECOVER) team. The USACE and SFWMD fully endorse the practice of independent peer review, and expect that all technical and scientific documents and reports produced by RECOVER be considered for peer review.

GUIDANCE:

What is independent peer review?

Peer review is a structured and independent (external to RECOVER) critical review of the content of scientific and technical documents, which is conducted before those documents are finalized. It is a process designed to provide independent endorsement of a method or conclusion, uncover technical problems, identify unresolved issues, and provide guidance using independent experts. It provides a process for independent experts to provide constructive criticism, advice, and guidance for the purpose of strengthening the overall credibility and relevance of a scientific or technical document. Peer review can be conducted by separate reviewers or by a panel of experts.

What is not scientific peer review?

Scientific Peer Review excludes any form of expression regarding the content, methods, assumptions, scientific understandings, and conclusions in a scientific or technical document that is provided by anyone participating in the development of that document, by other RECOVER members, or provided by sources outside the relevant technical or scientific disciplines.

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Peer input versus independent peer review.

Peer input, public comment, and stakeholder involvement, while important in the development of scientific and technical reports, are not independent peer review. Peer input provides ongoing, and often informal, discussions and written comments during the development of the product. RECOVER editorial and adhoc teams, as well as internal reviews by other RECOVER members and teams, are forms of peer input. Public comment is an opportunity for the public to express their views on technical and management issues related to a product. Stakeholder involvement provides a mechanism for a consensus approach for technical and non-technical issues and occurs during product development.

Why independent peer review?

Peer review provides a process for both enhancing the credibility and maximizing the strength of the contribution of scientific and technical reports and products. As such, it is a process that increases confidence in the scientific and technical basis for management and policy decisions. Though peer review does not guarantee that a product or conclusion will not be challenged, it can help to ensure that the product is technically sound, thus enhancing the acceptance, and potential application, of that product.

Peer review and RECOVER.

RECOVER has a commitment to provide the best available scientific and technical opinion and information in support of the design and implementation of the Comprehensive Everglades Restoration Plan (CERP). The inclusion of peer review into RECOVER protocols is a way to ensure a strong scientific and technical basis for CERP. In addition, peer review is identified as a key feature in the authorization for RECOVER in the Design Agreement executed May 12, 2000 between the Department of the Army and the SFWMD. Peer review is also identified as a specific task of RECOVER teams in the RECOVER Program Management Plan.

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What should be peer reviewed?

Each RECOVER team should have a process for deciding which of the documents it produces should be peer reviewed. Following are guidelines for determining which documents should be recommended for peer review.

Generally included for peer review are any documents that present new scientific and technical findings, new assumptions, interpretations and conclusions, new technical protocols, or present scientifically and technically controversial issues and recommendations. This includes all data, materials and even software required to reproduce or verify new findings. Assembly, tracking, and return of all required data and material for peer review is the responsibility of the RECOVER team. Generally excluded from peer review are procedural documents dealing with planning and organizational protocols, as well as review or synthesis documents that do not present new interpretations or conclusions or deal with controversial topics. If a RECOVER team is uncertain about the need for peer review, the question should be brought before the RECOVER Leadership Group (RLG).

The following list provides criteria that have been adapted from the U.S. Environmental Protection Agency (EPA) Peer Review Handbook (EPA 2000) or the SFWMD Water Resources Evaluation Department (Redfield and Urban 1996) to determine if a product should undergo Peer Review. If one or more of the following conditions are met for a RECOVER product, peer review should be considered.

- 1. The product establishes a significant precedent, model, or methodology.
- 2. The product considers an innovative approach for a previously defined problem, process, or methodology.
- 3. Expert guidance by professional staff has been identified as a requirement for completion of a product, due to technical uncertainties or lack of specialized expertise.
- 4. The product addresses significant controversial or emerging issues or has significant interagency implications.
- 5. The product satisfies a statutory or other legal mandate for peer review.
- 6. The review is requested by upper-level management (in relation to critical technical or positional issues of importance), has a high profile

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or unusual significance to decision-makers or is requested by Office of Counsel for legal purposes.

7. The program or project requires a large, long-term investment (ca. >\$100k per year), or involves multiple projects (e.g., research plans).

Levels of RECOVER peer review.

RECOVER documents can be reviewed at several levels. Draft versions of all RECOVER documents will be reviewed internally by the full RECOVER team as part of a routine process for internal quality control. Although internal review is an essential step in the production of RECOVER documents, it is not part of the independent peer review process.

Internal review, in the context of RECOVER, is any review conducted either individually or collectively by members of RECOVER teams who have not participated in the development of the document. In RECOVER, internal review is used to improve the quality of a document before it is prepared as a final draft, released to the public and agencies for more formal review, and before external peer review occurs. Internal review also serves to improve internal communication among RECOVER teams, and to create a sense of "ownership" or approval for all documents produced by the teams. The team that has the sole or lead responsibility for producing the document is responsible for conducting internal reviews.

True independent peer review includes any category of peer review that is conducted by any person(s) who is (are) not a member or participant in RECOVER. Peer review can be conducted at different levels of effort, in part determined by the role of the document in supporting management decisions, and in part by the nature and complexity of the scientific issues and topics that are addressed.

The chairs of the lead technical team, in consultation with the members of the team(s) that prepared the document, make decisions regarding submittal of RECOVER documents for external peer review. The decision about the level of peer review is made jointly between the team chairs and the RECOVER Leadership Group, usually based on a recommendation from the team chairs.

External peer review can be done by individual experts or by a review panel. For both individual and panel reviews, the reviewers must be provided with a clear

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statement of their charge, including the specific set of questions to address in their reviews, background on the product, due date for the review, the format for the review, and the point of contact in RECOVER for the review. Selection of the reviewers is a critical step in the peer review process and must be done by an independent party. Recommendations for reviewers can be obtained from Agencies, Native American Tribes, Environmental Groups, the South Florida Ecosystem Restoration (SFER) Task Force Science Coordination Group, Universities and private sector experts; however, a party that is independent of the product development process should make the final selection. In some cases, the editor of a journal may select reviewers, if the RECOVER document is submitted to that journal for publication. Care should be taken to ensure that there are no conflicts of interest between reviewers and any component of CERP or RECOVER.

For individual reviews, generally two to five people who are technically knowledgeable in the field are selected. Review by individual experts may be accomplished more quickly (one to two months), and is less expensive than panel reviews, but does not provide an opportunity for direct interaction between the reviewers and those who developed the product. Panel reviews, though more costly and time consuming, can provide more detailed guidance and an opportunity for cross-disciplinary interactions. Panel reviews are particularly appropriate for products that cover several disciplines (modeling for example), are broad in scope, or could benefit from the more detailed guidance that can be provided through direct interaction among panel members and between the panel and RECOVER.

In general, individual reviewers may be the preferred approach for documents that have an exceptionally strong science focus (e.g., the scientific basis for conceptual ecological models) where limited expertise exists, or when a successful review may call for complete independence of the reviewers (i.e., extreme candor or anonymity are paramount considerations). Panels may be the preferred approach for documents that raise complex management issues (e.g., the trade-offs between single species and ecosystem management objectives). Because of these differences, it can be appropriate for panels to include (but not be dominated by) members who have local background knowledge pertaining to the topics in question.

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Who in RECOVER is responsible for coordination of peer review?

Within RECOVER, the team chairs will have the responsibility for selecting a team member to serve as team manager for each peer review task (see Appendix A). Often the peer review manager will be a person who also participated on the editorial team that prepared the document. The peer review manager has the responsibility to see that the peer review is conducted according to a pre-determined scope and schedule, and that reviewer comments are addressed. The RECOVER team chairs have the responsibility to budget adequate funds to cover the expense of peer reviews. Budgeting for independent peer review should take into consideration cost share requirements associated with appropriate design agreements or other controlling guidance. The peer review manager will keep the team chairs informed on the progress of the review, organize the review, and maintain all records of the review.

A general checklist for tracking a peer review process, modified from EPA's Peer Review Handbook (U.S. Environmental Protection Agency 2000) is provided as Appendix A. RECOVER peer review managers should use this checklist as a guide for organizing and documenting each peer review process.

Incorporation of peer review comments

Once the peer review comments are received it will be the responsibility of the chairs of the RECOVER team that has the lead responsibility for that document to ensure that the reviewer's comments are appropriately addressed. This will include the preparation of a written record outlining which comments have been accepted and incorporated into the final product and which have not.

The cost of peer review

Peer review requires an investment of time, effort, and money. It is critical to identify the level of resources required early in the development of a product and appropriately incorporate these resources into the schedule and budget. Clear goals of the review process and the reviewer's roles must be spelled out at the onset, as well as a commitment to conduct the review in a structured, documented manner. Depending on the nature of the review, the cost in time for planning may range from days to weeks and the cost in dollars from several thousand to more than one hundred thousand dollars. In addition, there will be costs of staff time needed to prepare the appropriate background materials for

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the reviewers. While the costs of peer review may seem high, the benefits should justify the cost. In general, conducting peer reviews as a routine process and identifying technical issues in a timely fashion should always be an essential component of complex resource management and restoration programs.

References

- Brosnan, D.N. 2000. Can peer review help resolve natural resource conflicts? Issues in Science and Technology, vol. XVI, number 3. University of Texas, Dallas.
- Redfield, G. and N. Urban. 1996. Technical Review of District Programs, Projects and Products: A Process Description and Summary. Water Resources Evaluation Department. South Florida Water Management District, West Palm Beach, FL.
- U.S. Environmental Protection Agency. 2000. Science Policy Council Handbook, Peer Review. EPA 100-B-00-001. Office of Science Policy, EPA, Washington DC.

APPLICATION:

Effective the date of this memorandum, the provisions of this CGM shall provide guidance and govern the process for internal and external, independent peer review of technical and scientific documents and other products of the RECOVER Team.

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APPROVAL

John R. (Jack) Maloy Chief Executive Consultant, Water Resources CERP Program Manager South Florida Water Management District

DATE: 12/18/03

Dennis R. Duke U.S. Army Corps of Engineers

DATE: 12/18/03

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Checklist for Conducting a Peer Review

Title of Document	
Description_	
Document Produced by (Team, Contact, email, phone)	
Date Produce	d
Peer Review	Manager
Planning	 Peer review proposal brought before RLG. Key questions and issues have been identified to include in the charge to the Peer Reviewers. Procedures for documenting review process including the creation, maintenance, and retention of electronic and paper files and correspondence have been established. The location of Peer Review Records will be Cost estimate for the review has been made. Cost estimate \$ Adequate funds are available for the Peer Review. Funding will be provided, in the following amounts, by
Peer Review (Appropriate funding mechanisms are in place for the Peer Review. Funding mechanism Amount of time necessary for the review has been estimated. Estimated time needed Charge and Mechanism
	A clear, focused charge has been formulated that identifies issues, asks specific questions, and invites comments or assistance.
	The charge has been included in the Peer Review record.

- File name
- A Peer Review mechanism (individual experts or panel) has been selected. Mechanism

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Timeline

- A start date for the review has been set. Start Date
- The amount of time the Peer Reviewers will be given to conduct the review has been determined. Number of Day for Review
- _____A due date for comments from the reviewers has been set. Due date _____
- _____ The amount of time necessary to incorporate comments from the reviewers
 - into the product has been determined. Number of days for revision_
 - A deadline for final completion of the product has been determined. Due Date

Selection of Peer Reviewers

- The expertise required for the Peer Review has been determined.
- Advice was sought in developing a list of potential Peer Reviewer candidates who are independent of the work product and have appropriate scientific and technical expertise.
- In reviewing the candidates, a balance and broad spectrum was considered.
- In reviewing the candidates, any potential conflicts of interest were considered.
- The Peer Reviewers have been selected and the process has been documented and included in the Peer Review record.

Obtain and Transmit Materials for Peer Review

- Instructions have been given to the Peer Reviewers which ask for written comments in a specified format by the specified deadline.
- _____ The Peer Reviewers have been provided with the essential documents, data and information to conduct their review.
 - Date Peer Reviewers given charge and material
- The Peer Reviewers have been instructed not to disclose draft work products to the public.
- The Peer Review record/file contains all the materials given to the Peer Reviewers.

Conduct the Peer Review

- Written comments have been received from all Peer Reviewers
- Date all comments received by
- _____ All clarification or additional information necessary from the Peer Reviewers are received.
 - _ The validity and objectivity of the comments have been evaluated.

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- _____ Tri-chairs have been informed of the potential impacts of the comments on the deadline for the final product.
- _____ The Peer Review comments have been included in the Peer Review record/file.

Addressing Peer Review Comments

- Decisions have been made regarding which comments are accepted and will be incorporated into the final product, and which comments will not be incorporated.
- A written record has been prepared which responds to the Peer Review comments and specifies acceptance, or where appropriate, rebuttal and non-acceptance.
- Tri-chairs are informed on how comments will be responded to.
- _____ Product is revised to incorporate comments.
- _____ The Peer Review performed during the process of product development has been included in the final product.
- All documents regarding review, acceptance, or non-acceptance of comments and consultation with tri-chairs have been filed in the Peer Review record.

Finalize Product and Close Out Peer Review

- ____ The product has been completed.
- The tri-chairs approve the product.
- The final product and record of tri-chair approval is included in the Peer Review record.
- _____ The Peer Review record is appropriately filed.
- All materials used for the Peer review have been returned.
- _____ The final product is released.

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