



United States Department of the Interior

BUREAU OF RECLAMATION
Washington, D.C. 20240



IN REPLY REFER TO:

86-60000
ADM-1.10

JAN - 5 2007

MEMORANDUM

To: Denver Office
Attn: 86-60000, 86-68000, 84-50000, 84-40000
Regional Directors
Attn: PN-1000, MP-100, LC-1000, UC-100, GP-1000

From: Robert W. Johnson
Commissioner

Subject: Decisions Related to *Managing for Excellence* Recommendations – Action Item 16 –
Engineering Standards

Team 16 has completed its task. A copy of their report is attached for your information. While many of us believe that the Bureau of Reclamation has a substantial inventory of design standards to support our design efforts, the report points out several needs for improvement to assure that we have the appropriate design standards in place and knowledge of those standards throughout the organization. You are directed to review the report and implement all recommendations that apply to your office and staff in accordance with the implementation schedule in Section 10 of the report.

Note that several of the recommendations emphasize the need to be following existing policy and directives. A major area of emphasis is the role of the Director of the Technical Service Center (TSC) in developing and implementing design standards. While it is important to have one Director responsible for this function, it is also important to carry out this function in a manner that provides an opportunity for input from technical experts across Reclamation, industry organizations, and water and power customer organizations.

For design standards that have the potential to impact public safety, the Director of the TSC shall closely coordinate with the Director of Security Safety and Law Enforcement to ensure that risks to the public have been adequately considered.

Attachment

cc: 91-00000, (Collier), 91-10000 (Burman), 94-00000 (Todd), 94-30000, (Wolf) 96-00000,
96-40000 (Quint)

86-60000 (Muller, Medina), 86-62000 (Hensley), 86-68100 (Pimley), 86-68440 (Zeiger)
84-20000, (Beckman, Moon), 84-21000 (Feurstein, Wendling), 84-27000 (Harrison,
Mattingly)

SRA-3300 (Hieb), LCD-1050 (Bruninga), UCA-1000 (Kelso, Ries), PRO-100 (Barrett)

GP-3000 (Macartney), GP-2600 (Schoessler)

MANAGING FOR EXCELLENCE RECOMMENDATIONS – TEAM 16

Engineering and Design Services

Executive Sponsor: Maryanne Bach

Team Members: Bruce Barrett, Bill Bruninga, Larry Hieb, Jerry Kelso, Lowell Pimley, Roberta Ries, Larry Schoessler, Jim Zeiger

Key Organizational Function Interfaces: Reclamation-wide design and engineering services.

Action item statement from the Managing for Excellence Action Plan: Analyze Reclamation's engineering standards; both the appropriateness of them and how they are applied internally and externally.

Scope Statement from Managing for Excellence Project Management Plan:

Team 16 is to collect, review and analyze both internal and external engineering standards to determine the appropriateness, effectiveness, and application of Reclamation's existing engineering standards.

Approach and Methodology: The report was prepared by a team of eight Reclamation employees familiar with the technical aspects of Reclamation's design and construction activities and representing a cross-section of Reclamation's organization. Data were gathered on past and current standards in hard copy, via the internet and intranet; interviews and written responses to questionnaires. The audience for data collection was Reclamation staff, other agencies, private engineering firms, Reclamation Water Districts, and power utilities as well as input from public meetings. The team evaluated Reclamation's engineering standards in four areas: design data collection, design standards, design process, and closeout process,.

Deliverables:

1. **Report** which presents the findings and provides best practice recommendations for Management action.
2. **PowerPoint presentation** for stakeholder meeting in Sacramento, CA
3. **PowerPoint presentation** for RLT meeting in Las Vegas, NV
4. **PowerPoint presentation** for stakeholder meeting in Albuquerque, NM

Recommendations:

Design Data Collection

- 1) The Director of the TSC should finalize the draft Data Collection Guidelines and distribute them in a manner which ensures all Reclamation offices are aware of their existence and of the benefits of their use. Implement the guidelines Reclamation-wide and provide training as needed.

- 2) Regional Directors should assign design data collection responsibilities for each region to one or more offices in that region which possess the necessary expertise to collect the data in a timely manner with either in-house staff or through contractors. This concept would be modeled after the regional construction office model. The team does not recommend that offices staff to specifically perform this task, rather Reclamation should take advantage of the staff that already has the skills and capabilities to perform this task.

Design Standards

- 1) The Director of the Technical Service Center should assemble a team, including retired Reclamation design staff if needed, to comprehensively review the old Reclamation Instructions, Series 130, and all Reclamation design standards such as formal design standards, design manuals, engineering monographs, technical memoranda, and commonly accepted practices to identify:
 - a. Standards to be retained as is, including Reclamation design standards for high hazard / high risk projects and project features.
 - b. Standards to be updated by Reclamation ensuring they utilize and reference all applicable current national standards.
 - c. Standards to be eliminated including alternative sources for design guidance such as applicable national standards.
 - d. Standards that don't currently exist and need to be established.
- 2) The Reclamation Leadership Team should identify sources of additional funding and reallocate the funding necessary for the Technical Service Center to perform the previous recommendation
- 3) The Director of the Technical Service Center should ensure that the conduct of the preceding review is done in a manner that allows input from all Reclamation offices as well as Reclamation's water and power users.
- 4) The Director of the Technical Service Center should ensure that the needed internal standards identified in the preceding are updated and/or created. This activity will, by its nature, be an ongoing process that will need to be supported by adequate funding.
- 5) The Director of the Technical Service Center should formally announce the selection of each current standard for use by Reclamation, the update of each out-of-date standard, and each decision to eliminate un-needed Reclamation standards to all Reclamation Offices.
- 6) The Director of the Technical Service Center should post Reclamation Design Standards on Reclamation's Internet web page to ensure they are readily accessible.
- 7) The Director of the Technical Service Center, in consultation with the Dam Safety Office, should maintain and update internal standards for Dam Safety, new dam design, and other high hazard/high risk facilities.

Design Process

- 1) The Commissioner should communicate the responsibility of the Director of the Technical Service Center to develop directives and standards related to design and engineering and the provision of the design and construction related Reclamation Manual documents. Include in this letter a clear statement of the need for all of Reclamation to comply with design policies.
- 2) The Director of the Technical Service Center should supplement the "Final Design Process" with recommended procedures to establish and implement a Communications Plan between stakeholders, local Reclamation office(s), and the design provider (either in-house or architect and engineering firms) to ensure critical stakeholder input can be integrated into the development of designs.
- 3) The Director of the Technical Service Center should enlist the Reclamation Design and Construction Coordination Team to evaluate more efficient methods to produce Reclamation designs, including an assessment of the impact to total project cost of using more performance based specifications and off-the-shelf components in lieu of prescriptive designs.
- 4) In response to the internal and external criticism regarding the cost of Reclamation designs and the time required to produce a product, the Director of the Technical Service Center should monitor internal schedules and costs and collect the same for externally prepared designs and other documents to determine:
 - a. How accurate the original cost estimate was for the proposed work.
 - b. How many changes were required and at what cost.
 - i. Changes in scope
 - ii. Changes in cost estimate
 - iii. Changes in schedule
- 5) Regional Directors should determine capabilities of area and field offices to interact with and coordinate with stakeholders on design and construction projects, and designate a project leader (FAC 03-03) for those area offices that do not have capability
- 6) Regional Directors should ensure that those delegated the authority to perform program functions initiate the appropriate technical and economic dialog between the producers and receivers of design services.

Close-Out Process

- 1) The Reclamation Design and Construction Coordination Team should develop guidelines and/or standards for a non-discretionary close-out process that involves the users and beneficiaries of Reclamation's designs.
- 2) The Director of the Technical Service Center should develop a directive and standard to communicate the close-out process to all Reclamation offices.
- 3) The Director of the Technical Service Center should develop a web-based close-out questionnaire that can be e-mailed to all organizations involved in a design.
- 4) Regional Directors should task one individual within each region to input the responses into an agency-wide read-only accessible database available for reference by future project managers.

Other

- 1) The Director of Technical Resources should provide a copy of the report to Managing for Excellence Team 12 for their consideration in the right sizing effort.

Submitted by:


 Gerald Kelso, Team Leader Dec. 22, 2006

Date


 Maryanne Bach, Executive Sponsor Dec 27, 2006

Date


 Larry Todd, Deputy Commissioner, PAB 1/5/07

Date

Concur: 
 Robert W. Johnson, Commissioner 1/13/07

Date