

# Reclamation Manual

## Directives and Standards

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- Subject:** Reclamation Dam Safety Program
- Purpose:** Describes Reclamation Dam Safety Program activities and the allocation of costs to Safety Evaluation of Existing Dams (SEED) and Safety of Dams (SOD) funding authorities for Reclamation Dam Safety activities.
- Authority:** Reclamation Project Act of 1902 and supplemental Acts, Reclamation Safety of Dams Act of 1978, as amended
- Contact:** Director, Security Safety and Law Enforcement, Dam Safety Office, D-1440, Office of Policy and Program Services, Water Resources Office, D-5500
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1. **Background.** Procedures for identifying, communicating, and documenting decisions are described in Reclamation Manual (RM), *Decisions Related to Dam Safety Issues*, FAC P02. Additional program requirements are found in other policy and directives and standards contained in the RM. Day-to-day operations and management of emergencies at facilities are prescribed in official documents including Standing Operating Procedures and Emergency Action Plans.
2. **Scope.** This directive applies to all dams that are either owned by Reclamation or are included as part of an authorized Reclamation project, the improper operation or failure of which would result in probable loss of life or severe economic or environmental consequences. This directive establishes the decisionmaking requirements for determining activities to be performed within Reclamation's SEED and SOD portions of the Dam Safety Program. This directive also defines how project costs are determined and defines certain criteria for projects to be considered under the authority of the Reclamation Safety of Dams (SOD) Act.
3. **Definitions.**
  - A. **Dam Safety Issue.** An issue that, if not resolved:
    - (1) Could lead to a failure or malfunction resulting in an uncontrolled release of stored water that would place the public and/or resources at risk, or
    - (2) Would compromise Reclamation's ability to detect developing adverse dam performance and prudently respond to that performance.
  - B. **Probable.** Likely to occur; reasonably expected; realistic.
  - C. **Risk.** Possibility of loss or injury; exposure to the chance of injury or loss.

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- D. **High-Hazard Dam.** A dam where failure or misoperation will probably cause loss of human life.
  - E. **Significant-Hazard Dam.** A dam that would not be expected to cause loss of life if it failed, but would cause appreciable economic, environmental, or lifeline losses (rural area with notable agriculture, industry, work sites, or outstanding natural resources).
  - F. **Contractor.** Water and/or power user organization (a customer) that has an active repayment or water/power service contract with Reclamation, a Federal power marketing agency, or a non-Federal operating entity and pays or shares in the cost of the reimbursable portion of a proposed dam safety risk reduction action.
4. **Responsibilities.**
- A. **Commissioner.** Authority and responsibility for Reclamation dam safety is delegated from the Secretary of the Interior to the Commissioner of Reclamation in the Departmental Manual (DM), Parts 255 and 753.
  - B. **Regional Directors.** Authority to make decisions to resolve dam safety issues is delegated by the Commissioner to the Regional Directors in RM, *Decisions Related to Dam Safety Issues*, FAC P02. Each Regional Director is responsible for decisions related to issues at specific dams within their Region. All decisions will be made in collaboration with the Chief, Dam Safety Office and the responsible Area Manager for a specific dam. Authorizations of dam safety related structural modifications under the Reclamation Safety of Dam Act, as amended, are delegated in the DM, Part 255 and remain the responsibility of the Commissioner. Regional Directors will assure that decisions requiring risk reduction actions are communicated to the contractors and power marketing agencies, that a plan will be developed for periodic communication and reporting of project status to contractors during the period of the dam safety modification, and contractors are provided an opportunity to participate in the development of the risk reduction alternatives.
  - C. **Regional Directors and Chief, Dam Safety Office.** The Regional Directors and the Chief, Dam Safety Office are responsible for keeping the Commissioner adequately informed of dam safety issues and decisions.
  - D. **Reclamation Employees.** All Reclamation employees are responsible for communication of dam safety issues that have been identified or that have been called to their attention. This communication may be through the official channels of the employee's particular organization to the Chief, Dam Safety Office, the Regional Director, or the Area Manager for a specific dam. Employees may also communicate directly to the Chief, Dam Safety Office, the Regional Director, or the Area Manager.

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- E. **Reclamation Contractors.** Reclamation contractors who have elected to participate in the process of determining a risk reduction action are responsible for meeting the security requirements according to Reclamation policy. Regional Directors and Area Managers are responsible for assuring that these requirements are communicated and met.
5. **Dam Safety Program.** The objective of the Reclamation Dam Safety Program is to ensure that Reclamation facilities do not present unreasonable risks to the public, public safety, property, and/or the environment. To achieve this objective, Reclamation monitors, examines, and evaluates the performance of dams in its inventory of facilities. Issues will be evaluated in terms of loading conditions, structural response, and the potential consequences of dam failure. When Reclamation determines that risk reduction is necessary, reasonable risk reduction actions will be implemented. In addition to SEED and SOD activities described herein, there are many activities funded from a variety of sources that help Reclamation achieve its Dam Safety Program objectives.
6. **SEED Activities.**
- A. **SEED Activities and Non-Reimbursable Costs.** SEED activities provide assurance that Reclamation dams perform in a manner to achieve Reclamation's Dam Safety Program objective. The SEED portion of the Dam Safety Program provides for data collection, performance monitoring, periodic examinations, technical studies, and analyses to identify and evaluate potential dam safety issues. SEED activities are performed at Reclamation's high- and significant-hazard dams that pose a risk to the public. Costs associated with activities performed in the SEED program will be non-reimbursable. SEED activities benefit the public by ensuring that prudent and reasonable practices are used to manage risks and identify dam safety issues that place the public, property, or the environment at unreasonable levels of risk. The results of SEED activities allow Reclamation decisionmakers to identify and prioritize risk reduction actions based on their relative effectiveness in reducing risk to the public. SEED program activities comply with criteria established in RM, *Reclamation-Wide Program Funding Criteria*, BGT 04-02, because the activities are designed to ensure that Reclamation facilities serve their intended purposes safely, productively, and economically.
- B. **Decisionmaking.** Two decisions may be developed within the SEED program. The first decision determines whether a dam safety issue requires a risk reduction action. Studies to support this type of decision may include review of available data, collection of additional data, analyses of existing conditions, risk analysis of existing conditions, and other studies as determined to be necessary to adequately characterize the risk at a dam. If the decision is made that risk reduction is required to address public safety or to avoid significant property or environmental loss, a second decision is required to

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determine if a corrective action is justified to preserve all or a portion of the project benefits.

- C. **Communication of Decisions.** Decisions will be communicated to Reclamation contracting entities and they may participate in the decisionmaking process to provide input to Reclamation's potential course of action. The authority to make public safety decisions remains with Reclamation. Procedures for identifying, communicating, making, and documenting decisions are set forth in RM, *Decisions Related to Dam Safety Issues*, FAC P02. When decisions are made to reduce risk, the risk reduction action will be documented consistent with the SOD Act, as amended.

### 7. Safety of Dams (SOD) Program Activities.

- A. **Initiation of SOD Activities.** The Reclamation SOD Act (Public Law 95-578) as amended by Public Law 98-404, Public Law 106-377, and any future amendments will subsequently be referred to as the SOD Act. The SOD Act provides authority for Reclamation to modify structures or take non-structural actions to reduce risk. When the decision is made that a risk reduction action to address public safety and preserve all or a portion of project benefits is justified and the purpose and need requirements for funding through the SOD Act have been met, all subsequent activities will be performed under the authority of the SOD Act. Reclamation may use SOD Act authority when the purpose and need for risk reduction actions is the result of changes from new hydrologic or seismic data, or changes in the state-of-the-art. Safety of Dams costs associated with cultural resources may be non-reimbursable in accordance with the April 1, 1997, memorandum from the Commissioner addressing cost reimbursability from cultural resources activities related to SOD actions.
- B. **Involvement of Water and/or Power Contractors and Power Marketing Agencies.** While final risk reduction action decisions remain with the Commissioner of Reclamation, all contractors who share in the repayment responsibilities for the Safety of Dams modifications to a dam will be actively provided the opportunity to fully participate in the process leading to the determination and implementation of the appropriate risk reduction actions. Reclamation believes that efforts to reduce risk at Reclamation dams are enhanced by working in partnership with our water and/or power contractors to develop, review, and implement the necessary actions to assure that Reclamation dams safely perform their intended functions. To encourage this partnership, Reclamation will:
- 1) Provide contractors with a written explanation of the need to reduce risk within 30 days of a decision that such action is required.

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- 2) Provide contractors with an explanation of the process for identifying, seeking authorization for, and implementing an appropriate risk reduction alternative.
- 3) Work with contractors to develop a plan for periodic communication and reporting of project status during the period of the dam safety modification. The plan will identify the areas of implementation in which the water/power contractors wish to be involved (project management, cost tracking, engineering design and evaluation, NEPA compliance, etc.). This plan will be documented in writing and transmitted to water/power contractors.
- 4) Invite the contractor(s) to participate on the Project Management Team which will manage the activities necessary to carry out the risk reduction process. Whether or not the contractors decide to participate as part of the Project Management Team, minutes of the Project Management Team meetings will be provided to the contractors.
- 5) Document decisions concerning evaluation of risk reduction alternatives and provide that documentation in writing to contractors within 30 days of a Reclamation decision.
- 6) Identify opportunities (where appropriate) for the contractors to enter into contracts with Reclamation to perform certain activities for which the contractors may be uniquely qualified.
- 7) Document the participation of the contractors in the modification report. The modification report will also include any alternative risk reduction actions recommended in writing by the contractors
- 8) Obtain any necessary background investigations for contractor representatives who will participate in the process leading to the determination and implementation of an appropriate risk reduction action.

C. **Risk Reduction Responsibilities.** Reclamation will retain the responsibility for ensuring the technical adequacy of the risk reduction actions. When developing risk reduction alternatives, consideration will be given only to alternatives that can reasonably be accomplished and which significantly reduce the risk to the public. The judgements associated with "reasonable" and "significant" will be made by Reclamation's decisionmakers. Comparison of alternatives and selection of the preferred alternative will be in accordance with *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies* and the National Environmental Policy Act of 1969, as amended.

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- D. **Dam Modifications Authorized by the SOD Act.** The Federal Guidelines for Dam Safety define a dam as *“any artificial barrier, including appurtenant works, which impounds or diverts water, ...”* For the purposes of determining if a risk reduction action is authorized by the SOD Act, Reclamation will consider a dam modification to be any alternative where any of the significant existing features of the dam, including the water barrier, foundation, abutments, spillways, outlets, or existing dam site will be used in the modified facility. Modifications authorized by the SOD Act for new hydrologic or seismic loadings, or changes in the state of the art may require certain components of the dam to be removed or rebuilt as a cost-effective means to reduce the risk of dam failure and the resultant consequences. Execution of the SOD modification may also require new features to be constructed to cost effectively reduce the risk of dam failure and the resultant consequences. Examples may be the construction of an embankment, or the addition of a new spillway or dike through a saddle in the reservoir rim. If the risk reduction action does not use significant features of the existing dam, the action is not authorized under the SOD Act. If a replacement dam is the most feasible alternative for reducing risk, then authority other than the SOD Act will be identified for the risk reduction action.
- E. **SOD Program Activities.** The SOD Program authority provides that funds may be appropriated for the purpose of collecting data and developing risk reduction alternatives, environmental and economic studies, and other activities that are necessary to determine the extent of required modifications. These funds may also be used for formulating the proposed risk reduction alternatives; preparing the modification report; preparing repayment studies; executing repayment contracts; and final design, data collection, independent review, value engineering, preconstruction site work, construction contracts, security evaluations, construction management, “as-built” drawings, construction documentation, confirmation of risk reduction, environmental mitigation, and any other activities necessary to implement the risk reduction action.
- F. **Repayment and Initiation of Construction.** The Reclamation SOD Act requires that 15-percent of the costs incurred in the modification of a structure shall be allocated to the authorized purposes of the structure. The budget line items for SOD work will consist of the Initiate SOD Corrective Action (ISCA) budget line item and specific dam line items. All appropriations for SOD activities at a dam will generally be to the ISCA line item. Once a proposed risk reduction action has met the Congressional reporting requirement (or has been approved by the Commissioner for actions with an estimated actual construction cost of \$750,000 or less), Reclamation has authority to obligate funds for construction.
- G. **Exceeding Estimated Cost.** If it becomes apparent that the cost of a corrective action performed under SOD program authority will exceed the amount estimated in the

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Modification Report by more than 10 percent, an amended report by memorandum will be prepared and transmitted to the Office of Management and Budget (OMB). Once OMB has advised on the amended report, it will be transmitted to Congress.

### 8. Related Documents.

- A. Reclamation Safety of Dams Act of 1978, Public Law 95-578, November 2, 1978.
- B. Reclamation Safety of Dams Act of 1984, Public Law 98-404, August 28, 1984.
- C. Making appropriations for the Departments of Veterans Affairs and Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 2001, and for other purposes, Public Law 106-377, October 27, 2000.
- D. Ad Hoc Interagency Committee on Dam Safety, *Federal Guidelines for Dam Safety*, Federal Coordinating Council for Science Engineering and Technology, Washington, D.C., June 25, 1979.
- E. Memorandum from the Commissioner, *Criteria for Safety Related Modifications to Dams, Reclamation Safety of Dams Act of 1978*, November 2, 1979.
- F. Memorandum from the Acting Commissioner, *Interim Guidelines for Implementation of the Reclamation Safety of Dams Act as Amended by Public Law 98-404 Signed August 28, 1984*, December 7, 1984.
- G. Memorandum from the Commissioner, *Cost Reimbursability from Cultural Resources Activities Related to Safety of Dams Actions*, April 1, 1997.
- H. Memorandum from the Commissioner, *Safety of Dams Repayment Policy*, December 17, 1996.
- I. DM, 753 DM 1, *Dam Safety Program*.
- J. DM, 255 DM 1, *General Program Delegation, Commissioner of Reclamation*.
- K. Water Resources Council, *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*, February 3, 1983.
- L. The National Environmental Policy Act of 1969, as amended, Public Law 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Public Law 94-52, July 3, 1975; Public Law 94-83, August 9, 1975; and Public Law 97-258, §§ 4(b), September 13, 1982.

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- M. Executive Order 12322, *Water Resources Projects*, September 17, 1981.
- N. *Instructions for Handling Major Modifications of Reports*, Memorandum from the Office of Management and Budget to the Commissioner, April 17, 1985.