

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

Subject:	Operating Practices and Procedures for High- and Significant-Hazard Dams (and other facilities, as applicable)
Purpose:	To ensure that operating practices and procedures are uniformly applied for Bureau of Reclamation high- and significant-hazard dams (and for other facilities where specifically noted.) The benefits of this Directive and Standard (D&S) include protection of the federal investment, asset management, and safe and reliable operation of project facilities.
Authority:	Reclamation Project Act of 1902 (Act of June 17, 1902, 32 Stat. 388) and amendatory and supplementary acts; and Departmental Manual Part 753, <i>Dam Safety Program</i>
Approving Official:	Director, Dam Safety and Infrastructure
Contact:	Asset Management Division (86-67200)

1. **Introduction.** Although each of Reclamation's high- and significant-hazard dams (and related facilities) have specific and unique operating practices and procedures, it is important that certain minimum requirements be established on certain operations-related activities on a Reclamation-wide basis. The uniform application of these requirements will help ensure the operational reliability, structural integrity, and safe operation of these facilities. These topics include Standing Operating Procedures (SOPs); dam operating training; operating logbooks; gate exercising and testing; and related safety and security procedures.
2. **Applicability.** This D&S applies to all Reclamation staff and offices having jurisdiction and oversight responsibility for Reclamation-owned high- and significant-hazard dams (and other facilities, as determined by Paragraph 5.A.(3) of this D&S).
3. **SOP.**
 - A. **Requirements.**
 - (1) SOPs are required to be available for each high- and significant-hazard dam upon transfer to O&M status. Prior to transfer of the dam to operational status and initial filling of a reservoir, a draft copy of the SOP will be made available to the responsible operating office or entity.
 - (2) SOPs are also required for all multi-facility control centers.

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

- (3) The regional director or area manager having jurisdiction will determine whether SOPs are needed for other dams (i.e., low-hazard dams) and operating facilities (i.e., canals, pumping plants, etc.).
- B. **Contents.** The SOP will include all applicable operating instructions to adequately, safely, securely, and reliably operate the dam and its appurtenant structures and equipment. The Asset Management Division, Attention: 86-67200, will make available the *Standing Operating Procedures Guide for Dams, Reservoirs, and Power Facilities*. In addition, the SOP content is to include all non-sensitive security operations.
- C. **Issuance.** All copies of the SOP will be issued by the regional office or the authorized operating office (i.e., area office) and kept current. The initial letter of transmittal will be dated and signed by the regional director (or area or field office manager with delegated authority) to show that the SOP has been established as an official document. This letter will be retained with the SOP. Letters transmitting SOP revisions will not replace the initial letter of transmittal unless a completely new SOP is issued.
- (1) A record of the complete distribution list will be kept with the SOP by including the letter of transmittal, showing the complete distribution list (see the example below), and supplying a control number for each copy to each office. This will ensure that revised pages are furnished to all copyholders whenever revised instructions are distributed.
- (2) All SOP supporting documents will be listed or otherwise identified in the SOP.
- D. **Distribution.** The regional office, or area office with delegated responsibility, is responsible for publishing and distributing official SOPs and related supporting documents. Distribution of official copies of the SOP will be restricted to offices, entities, or government agencies having jurisdictional responsibilities for the facility as determined by the regional director. The distribution will include information on securely storing and handling the documents according to Reclamation Manual (RM) D&S, *Identifying and Safeguarding Controlled Unclassified Information (CUI)* ([SLE 02-01](#)). In addition, official copies will also be distributed to the following:
- (1) One copy of the SOP will be made available at the dam site or adjacent power facility and kept in a secure and readily accessible location for use by operating personnel.
- (2) An electronic copy of the current, complete SOP with all revisions will be maintained in the Enterprise Content System (ECS). For the purposes of this meeting this requirement, each volume of a multi-volume SOP is a complete document. The complete SOP is to be electronically furnished to Dam Safety and

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

Infrastructure's Asset Management Division (86-67200) (asset-mgt-div@usbr.gov), Technical Service Center (TSC) Instrumentation and Inspections Group (86-68360), and to eap-sop-library@usbr.gov.

- (3) If the SOP contains information on a Reclamation-operated power facility, a copy of the transmittal memorandum is to be sent to the Power Resources Office, Attention: 86-51000.

Example - SOP Official Distribution List

Location ¹	Number of SOP copies	Other supporting documents transmitted with the SOP ²	SOP copy control No.
Office at dam	1		
Operating entity	1		
Reclamation Field Office			
Reclamation Area Office			
Regional Office			
Asset Management Division ³	1		
Instrumentation and Inspections Group ³	1		

¹Give precise office name.

²Specifically name each document (e.g., Reservoir Regulation Manual, Water Control Manual, etc.)

³Electronic copies will be provided to the Asset Management Division and the TSC.

E. Reviews and Revisions.

- (1) **Reviews.** The SOP will be kept current by reviewing the document at least annually and revising as needed. Reviews are to be made by key operating personnel at the dam, the field office, the area office, the regional office, and facility review team members, as necessary, to ensure that instructions are adequate.
- (2) **Responsibility for Revisions.** The area manager is responsible for ensuring the SOP is current. The area manager is to be made aware of significant revisions, particularly those which are drafted and transmitted by the area office to the regional office. Any changes made by the regional office to the draft revisions will be communicated back to the area manager or assigned staff. Any updated Schedule for Periodic Monitoring (i.e., L-23 schedule) or Onsite Visual Inspection Checklists (OVICs) received by the responsible regional or area office will be processed and distributed as a revision to the SOP within 90 days of their receipt.
- (3) **Transmittal of Revisions.** Revisions to the SOP will be transmitted to all official copy holders. The letter transmitting the revised pages of the SOP will be signed by the regional director (or assigned designee), except for updated L-23

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

and OVIC revisions, to indicate official approval of the changes. An SOP Revision Sheet will accompany the letter and a revision date and revision number will be noted at the bottom of each revised page, to ensure the latest revision has been filed. The old revision sheet will be discarded if the new revision sheet shows all previous revisions. SOP text must be designated as CUI, and all SOPs must be handled, stored, and disposed of in accordance with [SLE 02-01](#).

Revisions to the SOP that are transmitted to Dam Safety and Infrastructure and TSC must be provided as part of a complete document in electronic format only, following the requirements of Paragraph 3.D.(2).

- (4) **Funding.** Reclamation's activities involved with reviewing, revising, updating, and transmitting SOPs are considered administrative in nature by ensuring safe and effective management of the facilities, and are not deemed to be project operations & maintenance (O&M) or dam safety activities. Based on this rationale, these costs are non-reimbursable and are to be funded accordingly. All related costs incurred by operating entities, as applicable, will be borne by them.
- F. **Deviations.** Operating procedures as stated in the SOP are to be strictly adhered to. If the need arises to deviate from the instructions stated in the SOP (unless during an emergency), deviations will be pre-approved by the responsible regional director.
- G. **Outside Requests.** If requests for SOPs or other operating documents are received from the general public (including Freedom of Information Act (FOIA) requests), or other federal, state, or local agencies, only certain portions of these documents will be provided. The local FOIA Officer will be contacted to ensure all pertinent requirements are met for each request. Areas/sections to be removed from the operating documents prior to fulfilling such requests include:
- (1) critical operating and site security information related to equipment and appurtenant structures at the dam or powerplant (including equipment operating procedures and related drawings) (pursuant to exemption 2 of the FOIA);
 - (2) information related to access of operating areas of the dam, powerplant, and related appurtenant structures (including procedures, locations, and drawings) (pursuant to exemption 2 of the FOIA);
 - (3) communication information related to personal or restricted use telephone numbers, and radio frequencies, including any contained within an Emergency Action Plan (EAP) (pursuant to exemption 6 of the FOIA); and
 - (4) operational and site security drawings, designs, computer source code, communication/control procedures and protocols, along with other information

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

related to the supervised remote control of dam, powerplant, and waterway systems (pursuant to exemption 2 of the FOIA).

4. **Dam Operator Training/Proficiency Review and Validation.**

A. **Requirements.**

- (1) For all attended dams, a minimum of two personnel is required to have the following outlined training: one as the primary dam operator; and one as the designated alternate. In some cases, it will be necessary to include more than two personnel to adequately provide primary and backup coverage of the duties as outlined later for each of the onsite training/review requirements. For unattended dams with powerplants, powerplant maintenance personnel must be encouraged to attend dam operator training.
- (2) All new dam operators (and newly designated alternates) are required to receive onsite dam operator training within 90 days of being on duty at the dam. As practical, they are also required to receive on-the-job training by the previous operator (or equivalent) to ensure continuity of adequate O&M practices and procedures. Additionally, all new operators and alternates must complete a classroom training session within 1 year of beginning their duties. Classroom training will be provided using alternate means, such as videoconferencing or teleconferencing, when necessary.
- (3) All established dam operators and designated alternates are required to receive refresher classroom training and onsite training at the prescribed frequency outlined in Paragraph 4.B of this D&S, which will form the basis of a “proficiency review” program to validate their knowledge and abilities related to expected duties and responsibilities. The only exceptions to this requirement are the following:
 - (a) Control room operators for powerplants where adequate technical personnel are available to assist in O&M, dam safety, and security activities as determined by the area manager.
 - (b) Dam operators employed by water districts that manage several high- and significant-hazard dams and have their own “proficiency review” program for dam operators, if the program is determined adequate by the area manager.

B. **Frequency.**

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

- (1) Each dam operator and designated alternate is required to regularly attend:
 - (a) classroom training no less than every 4 years, and
 - (b) onsite training no less than every 8 years.
 - (2) However, determination of the appropriate frequency of both classroom and onsite training will be the responsibility of the regional or area office staff conducting the training. Such a determination for more frequent training will be based on the need due to operational complexities of the dam, dam operator proficiency, a change in dam operator or alternate operator, changes in equipment, instrumentation, following a Safety of Dams or security modification, etc.
- C. **Scheduling.** The regional director, or as delegated to the area manager, is responsible for scheduling and providing both classroom and onsite dam operator training sessions, to meet the requirements of this D&S.
- D. **Training Instructors.** The instructors for providing both the classroom and onsite training are to be experienced Reclamation staff and have a thorough knowledge of the principles, practices, and procedures related to the O&M, and the safety of a dam. Other areas of training, such as security, will be provided using other Reclamation staff, as applicable, particularly during the classroom training sessions.
- E. **Content of Classroom Training.** Because classroom training typically is conducted for groups of dam operators and their designated alternates representing different facilities, the training will present a more general discussion of the subject material. Classroom training is to accomplish the goal of providing the participants with a fundamental knowledge of the full range of operations required for dams of all sizes. Classroom training also provides an opportunity for operators to meet and to share information with other operators. As a minimum, the classroom training will cover the following topics:
- (1) purposes of Reclamation projects (and how the dams interrelate);
 - (2) design and construction of safe dams;
 - (3) awareness of dam failures, incidents, and risks from natural or man-made hazards;
 - (4) instrumentation (purposes, types, locations, readings, and maintenance requirements);

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

- (5) dam tender/operator duties and responsibilities, including general safety and security awareness and procedures;
- (6) emergency management;
- (7) documentation (operating and reference);
 - (a) SOP, EAP, Site Security Plan (SSP), Designers' Operating Criteria, and any other critical documents (Continuity of Operations Plan (COOP), Defense/Response Plan, etc.);
 - (b) reference material and supporting documents;
 - (c) equipment manufacturers' instructions; and
 - (d) operating logbook;
- (8) facility reviews/site examinations; and
- (9) hydrology and reservoir operations.

F. **Content of Onsite Training.** Onsite training will be conducted for dam operators and their designated alternates at their respective facility and will consist of at least 4 hours of onsite instruction and discussion. For a facility that is small and associated operations are considered simple, the area manager must approve training sessions less than the minimum of 4 hours. The goal of onsite training is to provide participants with site-specific information that is pertinent to all facets of their unique facility. The onsite training will cover the following topics specific to each facility:

- (1) SOP, SSP (only to the extent not addressed as part of periodic security reviews), COOP, and other site-specific operating and reference documents;
- (2) reservoir operating procedures for both normal and emergency events;
- (3) EAP and emergency management responsibilities (only to the extent not addressed as part of emergency management exercises);
- (4) operations related to major control gates/valves and other associated mechanical, electrical, and electronic equipment used for local or remote operations, security, etc.;

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

- (5) instrumentation purposes, locations, reading requirements and gathering, and maintenance;
- (6) operating logbook;
- (7) performance parameters and potential natural failure modes, as well as general information and awareness regarding potential man-made/security-related failure modes;
- (8) general understanding of the use of a maintenance management system and related documentation needs;
- (9) personnel safety and operational security procedures (access/key control, identification badges, alarm assessment and response, etc.);
- (10) communication, attendance, and access factors related to operations; and
- (11) other specific duties and responsibilities related to the dam.

G. **General Training Content.** The Asset Management Division, Attention: 86-67200, will make available additional general training content in the *Training for Dam Operators Instructors Manual* and will make available information on conducting onsite training within the *Guidelines for Onsite Dam Operator Training*.

H. **Proficiency Review/Validation.**

- (1) Validation of each dam operator's and the designated alternate's knowledge and proficiencies related to their expected duties and responsibilities will be documented on Form No. 7-2533, *Dam Operator Proficiency Review* (Appendix A). Upon completion of the onsite training, Form No. 7-2533 will be signed and dated by the dam operator (or designated alternate) and the principal onsite instructor to verify the completion of the onsite training and, note the attendance (date/location) of the most recent classroom training session. A separate form is to be completed for each individual being trained/reviewed. Copies of the form will be provided and maintained in the area and/or the regional office, and a copy provided to the operating entity, as applicable.
- (2) The standard form (Appendix A) provides for documentation of any needed improvements in the proficiency of the dam operator (or the designated alternate) resulting from the onsite training. Timely efforts will be made by appropriate regional or area office personnel to assist the dam operators in addressing these needs and bringing the dam operator (or the designated alternate) to an acceptable

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

proficiency level. To record these efforts, another completed form or other documentation is to be provided to indicate the improvement of the areas cited on the initially completed form.

5. **Operating Logbook.**

A. **Requirements.** An operating logbook (paper or electronic) will be maintained at each high- and significant-hazard dam. Previously completed operating logbooks will be kept in a secure and dry location that will allow for ready reference by the dam operating personnel or by Reclamation staff. Regardless of the attendance or site visit frequency, records will be kept of all activities. A permanent logged record (paper or electronic) will be maintained by either the dam operator or the designated alternate on duty.

B. **Content.**

- (1) The operating logbook will contain chronological entries of all events to provide a continuing record of operating activities for future reference. Entries in the operating logbook will include documentation of the following activities:
 - (a) normal and emergency operation of outlet works and/or spillways including individual gate position changes (unless recorded on another database);
 - (b) water elevations and discharges (unless reported on water supply forms or approved daily record);
 - (c) startup and stopping of mechanical, electrical, and electronic equipment;
 - (d) test of standby equipment or gate controls, including applicable security equipment;
 - (e) testing and exercising of outlet and spillway control devices (gates and valves);
 - (f) minor and major maintenance activities, including scheduled maintenance;
 - (g) reservoir surveillance;
 - (h) initial acknowledgment of an emergency or unusual condition;
 - (i) security alarms, suspicious activities, or incidents, including the date/time the incident was forwarded to the regional or Reclamation duty officer;

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

- (j) request and concurrence to change from normal operation during an emergency or unusual conditions or record deviation when prior approval cannot be obtained (i.e., no communications);
 - (k) communications network checks and emergency exercises conducted;
 - (l) record of names (and addresses where appropriate) of all visitors, including Reclamation employees (e.g., facility review teams and other onsite assessments);
 - (m) acknowledgment of SOP/EAP/SSP review by operating personnel and supervisor (in the case of a water user-operated dam, it is permissible for Reclamation to serve as the supervisor for this acknowledgement);
 - (n) verification of annual site inspections, facility reviews, OVIC completion, instrumentation data collection, and special examinations;
 - (o) documentation of receipt of dam operator training (onsite and/or classroom); and,
 - (p) miscellaneous items pertinent to operation, emergency, or unusual conditions at the structures.
- (2) On larger facilities, it is acceptable for some of the above items to be recorded through other means, such as computerized maintenance management systems.

C. **Operating Logbook Entries.** All entries in the operating logbook will be made legibly in ink, dated, and signed. Neither erasures nor ink eradicators are to be used to make the corrections. Errors are to be lined out lightly, so that the incorrect notation is still legible after the correct entry is made. If electronic logs are used, they are to be password protected or other appropriate actions taken to prevent loss or alteration of past records.

D. **Forms.** Form No. 71792, *Telephone Report of Water and Power Interruptions and Facility Failure* (emergency or unusual conditions) or other approved daily records or forms, where needed, will be considered part of the operating personnel's operating logbook. They will always be available. A listing of these additional forms will be recorded in the front of the operating logbook, as well as their location, if not maintained onsite.

6. General Operating Practices.

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

- A. **Outlet Works Gate/Valve Exercising.** Because of the different types of outlet works gates/valves and site conditions, site-specific exercising procedures will be developed and outlined within the facility's SOP. To assist in this determination, Asset Management Division, Attention: 86-67200, will make available information provided within the *Standing Operating Procedures Guide for Dams, Reservoirs, and Power Facilities*. General exercising requirements and procedures include:
- (1) Each gate or valve that releases reservoir water through an outlet works, including those designated as emergency (guard) and regulating gates or valves, will be exercised through a complete opening and closing cycle at least annually under a balanced-head condition.
 - (2) A 10 percent unbalanced-head (flow) condition exercising of emergency (guard) gates and valves is to be performed on a 6-year frequency. When practical, the exercising is to be done in conjunction with the mechanical inspection portion of the Comprehensive Review (CR).
 - (a) Unbalanced-head exercising is not to be performed on butterfly valves to avoid damaging the valve seats or as determined, for other reasons, at site-specific facilities through the CR process.
 - (b) All unbalanced-head (flow) condition exercising of emergency (guard) gates will be coordinated with area office personnel.
 - (c) Penstock emergency gates for powerplants are recommended for exercising about every 5 years but less than 10 years (refer to Facilities Instructions, Standards, & Techniques (FIST) Volume 2-8 for applicable procedures).
 - (3) All gate and valve exercising operations will be documented in the operating logbook or other appropriate means (e.g., computerized maintenance management system) to serve as a permanent record for reference purposes. A copy of data related to unbalanced-head exercising of emergency (guard) gates and valves will be sent to the TSC, Attention: 86-68410, for inclusion in a Reclamation-wide database for gate and valve tests, and to Attention: 84-44000 to be scanned into Reclamation's Dam Safety Document Management System (DSDaMS). A gate testing form to collect necessary data, along with related testing guidelines, are available, upon request, from the TSC, Attention: 86-68410.
 - (4) Any site-specific exceptions or variances from these exercise requirements, as determined and documented as part of the CR process, will be reflected and documented in the SOP for the facility. Exercise requirements must include the use of emergency or backup power sources.

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

- B. Spillway Gate Exercising.** Because of the different types of spillway gates and site conditions, site-specific exercising procedures will be developed and outlined within the facility's SOP, in accordance with the guidance set forth in the *Standing Operating Procedures Guide for Dams, Reservoirs, and Power Facilities*, available from the Asset Management Division, Attention: 86-67200. General exercising requirements and procedures include:
- (1) Spillway gates will be exercised annually to confirm that the gates will open and close satisfactorily. The extent of the travel distance will be determined by each region and specified in the SOP.
 - (2) Full travel exercising must be performed on an annual basis under a balanced-head (unwatered) condition. However, in the event of a continuously high reservoir, which prohibits full travel exercising, exercising is to be postponed until conditions allow or stoplogs can be installed. Additional information for verifying full-travel operation of spillway gates with continuously high reservoir levels is provided within the "Guidelines for Testing Gates and Valves at Major Facilities," published in the *Water O&M Bulletin No. 146, dated December 1988*.
 - (3) All gate exercising operations will be documented in the operating logbook or other appropriate means (e.g., computerized maintenance management system) to serve as a permanent record for reference purposes. A copy of data related to full-travel exercising of spillway gates will be sent to the TSC, Attention: 86-68410, for inclusion in a Reclamation-wide database for gate and valve tests, and to the Instrumentation and Inspections Group, Attention: 84-44000, to be scanned into Reclamation's DSDaMS.
 - (4) Any site-specific variances from these exercise requirements will be reflected and documented in the SOP for the facility; however, such variances will be subject to appropriate processes outlined in RM Policy, *Decisions Related to Dam Safety Issues* ([FAC P02](#)) prior to documentation within the SOP.
 - (5) Exercise requirements must also include the use of emergency or backup power sources.
- C. Safety Procedures.** All Reclamation operating procedures will incorporate measures which fulfill the provisions of the most current publication of *Reclamation Safety and Health Standards*.
- (1) When Reclamation projects are not operated by Reclamation, the operating entity is subject to either federal or state occupational safety and health requirements, or more stringent standards, if specified by contract with Reclamation.

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

- (2) When safety and health standards require compliance with multiple and comprehensive safety and health program elements, procedures will be established which will allow for the safe and efficient accomplishment of the operations. Examples of operations which may require this degree of attention include entry into confined spaces, rope-supported work, and O&M activities involving hazardous energy. For activities involving the control of hazardous energy, the procedures will comply with the *Hazardous Energy Control Program* (FIST Volume 1-1) and the area office's local hazardous energy control procedures.
- D. **Security Procedures.** All Reclamation operating procedures will be in compliance with RM D&S, *Facility Security* ([SLE 03-02](#)) and any site-specific security measures needed to optimally maintain the security posture onsite. Additionally, documentation shall exist of the access control in place at each facility (i.e., a "Key Control" or "Authorized Access" program). Such documentation is to include dates and names (and addresses where appropriate) of all persons that have keys, keycards, and/or other access (including local or remote cyber access) to each asset/area at the facility and pertinent updates to those controls such as when a person is suspended, leaves the position requiring access, or leaves employment.
- E. **Temporary Reservoir Surcharge.** Whenever possible, authorization must be received from the responsible regional director to store water in surcharge prior to the surcharge event. In an emergency, the regional director is to be informed of the surcharge storage as soon as possible. In lieu of seeking an individual authorization for each surcharge event, a more general authorization documented with the facility SOP or within a dam safety decision memorandum will serve as concurrence by the regional director. Enhanced security measures will be considered in accordance with the EAP/SOP/SSP as applicable.
- F. **Maintenance Management System.** A documented maintenance management system will be established at each reserved works dam (and Reclamation must encourage the establishment of such a system at each transferred works dam) to track all pertinent maintenance and inspection operations scheduled and accomplished at the facility.
- G. **Reservoir Capacity Allocations (RCA).** Up-to-date files of RCA sheets (Form No. 7-1686, *Reservoir Capacity Allocations*) will be approved and maintained for all reservoirs in which Reclamation has a demonstrated responsibility by reason of its involvement in the design, construction, operation, and/or ownership of the dam or appurtenant facilities. Initiation of updating the RCA sheets will be made by the area office. The RCA sheets will be approved and distributed by the regional director, or as delegated to the area manager, with a copy of the approved RCA sheet included in the

Reclamation Manual

Directives and Standards

TEMPORARY RELEASE

(Expires 05/14/2022)

SOP. However, prior to approval and distribution of an updated RCA sheet, where changes in reservoir storage levels or operations have a potential effect on dam safety or security, such actions will be subject to appropriate processes outlined in RM Policy, *Decisions Related to Dam Safety Issues* ([FAC P02](#)).

7. **Definitions.**

- A. **Dam Operator.** The person responsible for the daily or routine O&M activities of a dam and its appurtenant structures. The dam operator (also referred to as the dam tender) commonly resides at or near the dam.
- B. **High-Hazard Dam.** Those dams where failure or mis-operation will probably cause loss of human life.
- C. **Operating Logbook.** A dated, written or electronic record of performed operation and maintenance items or observations pertinent to a dam, facility, or structure.
- D. **Significant-Hazard Dam.** Those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or other considerable impacts.
- E. **SOP.** A comprehensive single-source document covering all aspects of a specific dam and reservoir's O&M and emergency procedures. Its purpose is to ensure adherence to approved operating procedures.

- 8. **Review Period.** Certification by the originating office will not exceed 4 years.

RECLAMATION MANUAL TRANSMITTAL SHEET

Effective Date: _____

Release No. _____

Ensure all employees needing this information are provided a copy of this release.

Reclamation Manual Release Number and Subject

Summary of Changes

NOTE: This Reclamation Manual release applies to all Reclamation employees. When an exclusive bargaining unit exists, changes to this release may be subject to the provisions of collective bargaining agreements.

Filing instructions

Remove Sheets

Insert Sheets

All Reclamation Manual releases are available at <http://www.usbr.gov/recman/>

Filed by: _____

Date: _____