

# Maintenance and Safety of Dams (PUBLIC)

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BLM manuals and handbooks are online at:  
<http://www.blm.gov/nhp/efoia/index.htm>

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### **.01 Purpose**

This Manual Section provides the policies, objectives, responsibilities, and procedures for the administration of the dam safety program to ensure adequate safety and maintenance of Bureau of Land Management (BLM) dams (for dams meeting the height and capacity requirements set forth in the National Dam Inspection Act, or classified as having a high-hazard or significant-hazard potential) on lands administered by the BLM.

### **.02 Objectives**

The objectives are to (a) maintain dams in a safe way (no unacceptable risk to public safety and welfare, property, the environment, or cultural resources); (b) maintain dams in a satisfactory condition (capable of fulfilling their intended functions); (c) assign appropriate hazard potential classifications; (d) maintain high standards in the practices and procedures the BLM uses for planning, engineering design, construction, repairs, operation, maintenance, evaluation of existing dams (including risk assessments), and emergency preparedness; and (e) remove from service those dams that no longer support resource management programs.

### **.03 Authority**

The legislation, authorities, and references listed below are the more significant citations applicable to the maintenance and safety of dams.

- A. Federal Land Policy and Management Act of 1976, as amended.
- B. Federal Water Pollution Control Act, as amended 1972 and 1977.
- C. Public Rangelands Improvement Act of 1978, as amended.
- D. Soil Conservation and Domestic Allotment Act of 1972, as amended.
- E. National Dam Inspection Program Act of 1972, as amended.
- F. National Dam Safety Program (P.L. 104-303, Section 215)
- G. Executive Order 11988—Floodplain Management, amended by Executive Order 12148—Federal Emergency Management.
- H. Executive Order 11990—Protection of Wetlands, amended by Executive Order 12608—Elimination of Unnecessary Executive Orders and Technical Amendments to Others.
- I. Executive Order 12088—Federal Compliance with Pollution Control Standards. Executive Order 13148 (Greening the Government Through Leadership in Environmental Management) revokes Section 1-4 of EO 12088. Executive Order 12580 (Superfund

Implementation) amends EO 12088 by renumbering Section 1-802 as Section 1-803, and adding a new Section 1-802.

J. Departmental Manual, Part 753 DM-1, Special Programs Dams Safety Program General Criteria, January 5, 1981, as amended April 14, 1982.

K. National Environmental Policy Act.

L. Federal Guidelines of Dam Safety, Federal Coordinating Council for Science Engineering and Technology, June 25, 1979.

M. FEMA 64, Federal Guidelines for Dam Safety Emergency Action Planning for Dam Owners, April 2004.

N. FEMA 93, Federal Guidelines for Dam Safety, April 2004

O. FEMA 94, Federal Guidelines for Selecting and Accommodating Inflow Design Floods for Dams.

P. FEMA 333, Federal Guidelines for Hazard Potential Classification System for Dams, April 1995.

Q. FEMA 1448, Glossary of Terms for Dam Safety

R. The National Dam Safety Program Act Implementation Plan

S. BLM Handbook H-9177-1, Dam Safety Inspection Report Guidelines Embankment Dams, March 27, 2006.

T. BLM Manual 9102, Facility Design

U. BLM Manual 9103, Facility Construction

V. BLM Manual 9104, Facility Maintenance

W. Any subsequent Federal or Departmental policies and guidelines.

#### **.04 Responsibility**

A. The Director, Bureau of Land Management, is responsible for the water resources management program and its interaction with all other BLM programs. This responsibility is exercised through the Assistant Directors. In addition, the Director is responsible for overall operation of a dam safety and security program in accordance with the Federal Guidelines for Dam Safety and the Department of the Interior Departmental Manual 753 DM-2 (which describes the requirements of Bureau Dam Safety and Security Programs). Heads of Bureaus in the Department designate an official, reporting directly to the head of the Bureau or his or her specified representative, to be responsible for dam safety and dam security program functions and duties.

- B. The Assistant Director, Minerals, Realty, and Resource Protection, is responsible for providing leadership for the safety and maintenance of dams. This responsibility is exercised through the Division Chief, Engineering and Environmental Services Division.
- C. The Assistant Director, Renewable Resources and Planning, is responsible for providing leadership for renewable resources and planning, including water resources associated with the public lands, water developments, riparian corridors and floodplain management. This responsibility is exercised through Division Chiefs and program leaders who are assigned responsibility for water, range, riparian, fisheries, and watershed management programs.
- D. The Division Chief, Engineering and Environmental Services Division, is responsible for management of the BLM Dam Safety Program. These responsibilities are exercised through the BLM Dam Safety Officer, as required by Departmental Manual 753 DM-1 and DM-2, and include:
1. Implementing, developing operating, and managing the Bureau Dam Safety and Security Programs consistent with Departmental policies, the authorities listed in 753 DM 1, and any other applicable Federal guidelines or directives for the Bureau's existing dams and any newly acquired or constructed dams.
  2. Performing all planning, design, construction, operations, maintenance, and security of dams by technically qualified personnel, in accordance with all applicable Federal and Departmental dam safety and security guidelines.
  3. Serving as the Bureau lead contact for Interior dam safety and security intra- and interagency coordination. Coordinating Bureau Dam Safety and Security Program development and operation with the Working Group on Dam Safety and Security (see 753 DM 1.7A).
  4. Advising the Bureau head on implementation of the Bureau's Dam Safety and Security Programs, including budgeting and funding of program activities to reduce the risks associated with dams, and delineating clear personnel requirements and costs associated with dam safety and security during the budget formulation process.
  5. Developing and maintaining a common approach to dam safety and security throughout the Bureau, and providing and maintaining an adequate level of safety and security for the Bureau's dams.
  6. Ensuring that the technical and engineering aspects of dam safety and security are adequately considered throughout the development, design, and operation of dam projects.

7. Developing and maintaining Bureau-wide policies and guidelines for the maintenance and safety of dams, including:
    - a. Ensuring that condition assessments, technical inspections, and safety evaluations are conducted.
    - b. Compiling, maintaining, and monitoring the BLM's inventory of dams.
    - c. Establishing and conducting an emergency management program
    - d. Providing Washington Office final approval of Emergency Action Plans (EAPs).
  8. Providing technical assistance for the maintenance and safety of dams.
  9. Serving as liaison with other agency programs, and representing the BLM at the Department of the Interior Dam Safety Working Group.
  10. Providing oversight of the performance of condition assessments, in-depth technical inspections or evaluations, and safety evaluations of dams.
  11. Providing oversight of the dam safety design, construction, operation, maintenance, and condition assessment training program.
  12. Coordinating the maintenance and safety of dams with the program areas of the Assistant Director, Renewable Resources and Planning, and other Assistant Directors as appropriate.
- E. The State Director is responsible for the safety and maintenance of BLM dams within the State. This responsibility is exercised through the BLM State Engineer (State Office). The State Director approves EAPs before their submission to the Washington Office for final approval and appoints the Board of Inquiry as needed.
- F. The BLM State Engineer (State Office) is responsible for:
1. Carrying out the BLM policies, guidelines, and procedures for the maintenance and safety of dams.
  2. Providing the State with technical direction for the safety and maintenance of dams.
  3. Compiling and maintaining a statewide inventory of dams in the Facilities Asset Management System (FAMS).
  4. Ensuring that the statewide inventory is updated as necessary and is included in the Bureau-wide inventory.
  5. Ensuring that condition assessments, complex technical evaluations, and project inspections (during construction activities) are performed uniformly for all dams by qualified personnel.
  6. Monitoring the quality and acceptability of maintenance and rehabilitation work completed on dams.

7. Designating an engineering staff member for oversight of the dam safety program.
8. Ensuring that (a) BLM-owned high-hazard and significant-hazard dams are condition assessed annually, and (b) EAPs are developed, approved, and reviewed and updated.
9. Ensuring that BLM-owned low-hazard dams are condition assessed every 5 years and that a cyclical condition assessment program is developed and maintained in each State.
10. Coordinating with other agency efforts (e.g., the soil, water, and air program and the riparian management program).

G. The District or Field Manager is responsible for providing direction for the safety and maintenance of dams within the District or Field Office jurisdiction, and for ensuring that adequate emergency planning is completed. This responsibility is exercised through the District, Field, or Zone Engineer (supports multiple District or Field Offices) or his or her duly authorized representative. The District or Field Manager approves the EAPs before their submission to the State Director for subsequent approval.

H. The District, Field, or Zone Engineer, as appropriate, is responsible for:

1. Providing the District or Field Office with technical direction for the condition assessments, safety inspections, and maintenance of dams.
2. Compiling and maintaining the District or Field Office inventory of dams through use of FAMS.
3. Ensuring that all BLM-owned high-hazard and significant-hazard dams are inspected annually and that all low-hazard dams have condition assessments performed on a 5-year cycle.
4. Ensuring that all dam condition assessments are performed by qualified engineers or technicians.
5. Developing and implementing maintenance plans for dams.
6. Ensuring that work on dams is properly programmed, planned, and completed.
7. Preparing and annually updating the Emergency Action Plans (EAP).

## **.05 References**

See Manual 9100 (Facilities Planning, Design, Construction, and Maintenance) and 9170 (Surface Resource Facilities).

## **.06 Policy**

It is BLM policy that:

- A. All BLM hazard-classified dams are maintained to standards that promote safe performance and reduce hazards from the dam's possible failure to an acceptable level.
- B. As defined by the National Dam Inspection Program Act, a current inventory of BLM-owned hazard-classified dams is maintained through the Facilities Asset Management System (FAMS).
- C. The Bureau-wide dam inventory includes a hazard classification (high, significant, or low) for each structure inventoried.
- D. Condition assessments and, as necessary, technical in-depth evaluations or inspections are made at least once a year of all BLM-owned dams classified as high-hazard potential and significant-hazard potential dams.
- E. Condition assessments are performed on all low-hazard dams once every 5 years.
- F. All BLM-owned dams classified as having high-hazard potential and significant-hazard potential have a current EAP to avoid or minimize loss of human life in the event of the failure of the dam (see FEMA 64, Federal Guidelines for Dam Safety Emergency Action Planning for Dam Owners, April 2004).
- G. To the extent BLM jurisdiction permits, floodplain management guidelines are administered to ensure that downstream development is not placed in the inundation area, where failure of a dam might cause loss of human life or extensive property damage.
- H. General design criteria for dams is based on the guidelines specified in the Bureau of Reclamation (BOR) publication, "Design of Small Dams," as amended by more recent BOR guidance or other design guidance used or accepted by the dam safety community.
- I. Protocol and implementation requirements for retirement of dams is based on the American Society of Civil Engineers publication "Guidelines for Retirement of Dams and Hydroelectric Facilities, 1997."

## **.07 File and Records Maintenance**

See .7 for establishing, maintaining, and disposing of files.

## **.08 List of Handbooks.**

The following Handbooks accompany and augment this manual:

- H-9177-1. Dam Condition Assessment Guidelines for Embankment Dams
- H-9177-2. Dam Condition Assessment Checklist
- H-9177-3. Reporting Dam Failures

**.1 Inventory.** The inventory list for BLM-owned dams is located in the Facility Asset Management System (FAMS). Maintain a current, electronic inventory of all BLM-owned hazard-classified dams. The inventory must include all structures noted in .06B. The inventory fulfills the legal requirement for a Bureau-wide dam inventory, incorporates the structures into the annual and deferred maintenance planning and programming cycle, and establishes priorities for on-site condition assessments based on Current Replacement Value (CRV)–Facilities Condition Index (FCI) calculations and potential hazard.

A. *Coordinating with the Facilities Asset Management Plan.* The Facilities Asset Management Plan (FAMS) provides information for management decisions on retention, abandonment, or disposal of structures. Structures should be reviewed as part of this process and, dams that do not presently support the resource management programs should be removed from service to reduce the BLM's liability and maintenance needs.

**.11 Project Files.** Individual project files are established in accordance with BLM Manual 9100 for dams located on lands managed by the BLM.

A. *Inventory Record.* Inventory data for each dam must be placed in an individual electronic project file. Prepare a new entry into FAMS when there are any repairs or physical modifications to the structure, when there is an on-site condition assessment, or when there is a change in hazard classification because of changes in downstream land use. Report any update of the inventory that involves a change in size or hazard classification to the BLM Dam Safety Officer.

**.2 Classification of Dams.** The potential hazardous effect of a dam on the safety, economy, and environment of downstream areas varies with the size of the structure and the downstream land use. The hydraulic height of a dam and the detention or impoundment capacity behind the dam are used to classify the size of the dam. Information used to develop or make a classification determination is incorporated into and becomes part of the Condition Assessment Report in FAMS. Records of previous information used to make a classification determination should be reviewed for validity as part of any new condition assessment.

**.21 Size Classification.** The size classification of the dam is determined by either the hydraulic height or the present detention–impoundment capacity of the dam, whichever yields the larger size category. (If it is not practical to determine present capacity, the design capacity of the reservoir may be used for assigning the size classification.)

Dam Size Classification		
Category	Hydraulic height (Feet)	Present capacity (Acre-feet)
Minor* (M)	6–25	15–50
Small (S)	26–40	51–1,000
Intermediate (I)	41–100	1,001–50,000
Large (L)	≥100	≥50,000

\*These dams are not included in the dam inventory, unless they are classified as having high- or significant-hazard potential.

**.22 Hazard Potential Classification.** Dams are classified for hazard potential on the basis of probable loss of life and property downstream from the structure. The hazard potential classification is based on the degree of adverse incremental consequences from failure or operational problems of the dam. The hazard potential classification may change over time. Structures are classified for hazard potential as follows:

Hazard Potential Classification		
Hazard potential classification	Loss of human life	Economic, lifeline, and environmental losses
Low (L)	None expected	Low; limited to owner
Significant (S)	None expected	Yes
High (H)	Probable; one or more.	Yes; not needed for “High”

**.23 Seismic Risk Classification.** Dams are classified for seismic risk on the basis of their geographic location.

A. *Coordination with Geological Survey.* Coordination with the U.S. Geological Survey (USGS) may be useful for the exchange of site-specific, geological, hydrological, and seismological information that may increase the safety of dams.

1. Coordination with USGS is required for construction or modification of any structure that has a high-hazard potential rating.
2. Coordination with USGS is recommended for any structure that will be built or modified to be 25 feet high or higher or that will have a capacity of 50 acre-feet or more.

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**Public Law 92-367**

**92nd congress, H.R. 1595**

**August 8, 1972**

**An Act**

To authorize the Secretary of the Army to undertake a national program of inspection of dams.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That the term “dam” as used in this Act (and as amended in FEMA 93) means “any artificial barrier, including appurtenant works, which impounds or diverts water, and which (1) is twenty-five feet or more in height from the natural bed of the stream or watercourse measured at the downstream toe of the barrier or from the lowest elevation of the outside limit of the barrier if it is not across a stream channel or watercourse, to the maximum water storage elevation or (2) has an impounding capacity at maximum water storage elevation of fifty acre-feet or more. These guidelines do not apply to any such barrier which is not in excess of six feet in height regardless of storage capacity, or which has a storage capacity at maximum water storage elevation not in excess of fifteen acre-feet regardless of height. This lower size limitation should be waived if there is a potentially significant downstream hazard.

The guidelines apply with equal force whether the dam has a permanent reservoir or is a detention dam for temporary storage of floodwaters. The impounding capacity at maximum water storage elevation includes storage of floodwaters above the normal full storage elevation.

In addition to conventional structures, this definition of ‘dam’ specifically includes ‘tailings dams,’ embankments built by waste products disposal and retaining a disposal pond.”

**.3 Condition Assessments.** A condition assessment is an on-site examination and evaluation of the condition of a BLM-owned dam. The condition assessment report is a written record, including color photographs, of the results of the on-site examination and evaluation. Condition assessments or the equivalent may have been done by other authorities (such as the Corps of Engineers, the BOR, the State, or a private, qualified consultant) in some areas; if so, evaluate and incorporate the report into the project file. The condition assessment verifies the recorded description and location of the structure, evaluates the physical condition, confirms the hazard and size classification of the structure, notes any changes in upstream or downstream land use, classifies the structure according to physical condition, and identifies and quantifies further investigative and evaluation needs and maintenance requirements.

A. *Qualifications for Those Conducting Condition Assessments.* Qualifications include formal education, training, or practical experience in dam design, construction, safety evaluation, and maintenance. A qualified engineer or engineering technician designated by the BLM State Engineer, or as specified by State law, shall perform condition assessments on all BLM-owned structures in the small-, intermediate-, or large-sized classifications or low-, significant-, or high-hazard classifications. Inspectors will be required to take developed BLM training on process and technical requirements. A basic training course will be required and refresher training is required every 5 years. Attendance of the Bureau of Reclamation SEED course is also recommended. Contractors will be required to demonstrate the same experience and must review computer-based training presented by the BLM. Training for new BLM employees will also include on-the-job training on one or two BLM dams.

B. *Frequency of Condition Assessments.* On-site condition assessments should be conducted for every BLM-owned hazard-classified dam in the current inventory on a 5-year cycle. However, BLM-owned dams in the high- or significant-hazard classifications are to be assessed for condition annually. Perform an on-site inspection and complete a condition assessment report after extreme rainfall or other unusual occurrence—such as seismic activity—that could damage the structure. For a high- or significant-hazard dam, if a condition assessment identifies a major safety problem (one that endangers human safety or could cause significant property damage to either the structure itself or to downstream areas), report it immediately to the District or Field Manager and the BLM State Engineer.

C. *Permitted Dams.* Permitted dams are inspected by State authorities. Maintenance and liability are the sole responsibility of the permittee.

**.31 Condition Assessment Report.** Prepare a condition assessment report for each on-site inspection (see Federal Guidelines for Dam Safety, III.D.2.b., Types and Frequencies of Inspections). The condition assessment report is placed in the electronic project or job file for the dam. This report can be the basis of updating the FAMS maintenance plan, and subsequently for requesting funds to repair the structure.

A. *Items to Note.* Verify the location and description of the structure as shown by the inventory data and by any previous condition assessments. Compare the present physical condition of the structure to the condition of the structure when it was new. Note any physical defects. Evaluate previous maintenance work and identify additional maintenance needs. Note any further investigative or technical evaluation needs. Identify changes in downstream land use that could affect the hazard classification of the structure. See BLM Handbook H-9177-1 (Dam Safety Inspection Report Guidelines for Embankment Dams, March 27, 2006) for detailed guidance on performing on-site condition assessments. Record condition assessment observations; include the condition classification for the structure.

B. *Photographs.* Color photographs should be taken of the dam features whenever a condition assessment is conducted. These will serve to show changes over time, and should be dated and filed with the condition assessment report. Photographs should be taken of the crest, upstream and downstream faces of the embankment, spillway area, inlet and outlet works, upstream and downstream areas, and any other areas of particular concern (seepage areas, sloughs, cracks, downstream development, or others)

**.32 Condition Classification.** Upon completion of the on-site inspection, assign a condition classification to the structure and record it in the report. Condition classes are as follows:

Dam Condition Classification	
Condition classification	Criteria
Good (G)	Structure is in good condition as measured against new condition. No repairs are needed at time of inspection. Structure is effectively serving the purpose for which it was constructed.
Fair (F)	Minor repair or routine maintenance is needed. Structure is operational and is basically serving the purpose for which it was constructed (i.e., brush on dam, minor erosion, etc.).
Poor (P)	Major repairs or modifications are required to make the structure operational or to prevent failure of the structure. Structure is only partly operational and is not adequately serving the purpose for which it was constructed (silted full, heavy seepage, major erosion, etc.).
Unsatisfactory (U)	Structure is breached or flanked. Structure is not operational and is not serving the purpose for which it was constructed (repair or remove from service).

**.33 Technical, In-Depth Inspections.** For significant- and high-hazard dams, if the condition assessment identifies a condition or deficiency requiring assessment by personnel with expertise beyond the capabilities of the Field Office staff, the Field Manager submits a request in writing to the State Director for technical, in-depth inspection of the dam. The results of these inspections, with recommended repairs and cost estimates, are attached to the condition assessment report and are placed in the project or job file. If the technical, in-depth inspection reveals a major safety problem (one that endangers human safety or could cause significant property damage to either the structure itself or to downstream areas), the problem must be reported to the Field Manager and the BLM State Engineer immediately, with recommendations for emergency actions to be taken.

**.34 Monitoring and Instrumentation.** Foundation and embankment monitoring devices may be installed to monitor the performance of a structure after completion of construction. These devices show changes in the foundation, embankment, and abutments during filling and operation of the dam. Permanent monitoring installations are customarily not justified for structures of less than intermediate size or with low-hazard potential classification.

A. *Monitoring for Seepage and Movement.* Monitoring instruments or devices may be installed on significant- or high-hazard classification dams that show evidence of abnormal seepage flow or embankment movement. Measurement for seepage is instituted to record the change in flow over time. Embankment movement is monitored by establishing horizontal and vertical benchmarks, and the relative change in position of the benchmarks over time is recorded. Monitoring should be performed frequently during initial filling of the reservoir.

B. *Monitoring for Seismic and Subsidence Effects.* Determine the degree of seismic risk for each structure in the significant- or high-hazard potential classification according to seismic risk maps of the United States and on consultation with seismic experts, as appropriate. Dams in areas of high seismic risk should be monitored for movement and inspected for damage when seismic activity is reported in the area. Note in the condition assessment the Horizontal Peak Ground Acceleration for high-hazard dams based on the spectral response map in the Dam Safety Inspection Report Guidelines.

Dams in significant- or high-hazard classes should be monitored and inspected for damage more frequently if they are located in subsidence areas. Subsidence may occur in areas where there has been extensive groundwater pumping, and mineral, oil, and gas extraction. Dams in subsidence areas may be monitored for movement. Document any evidence of seismic activity or subsidence on the condition assessment report.

**.4 Condition Assessment Summary.** The District, Field, or Zone Engineer (supports multiple District or Field Offices), or his or her designated representative, prepares a summary of condition assessments, including (at a minimum) name, brief description of required maintenance work, and an estimate of maintenance cost. This summary should be updated annually, and a copy should be sent to the State Engineer.

A. *Work Priorities.* Use the condition assessment summary to prepare a list of funding priorities. If the total estimated cost of the work to be done exceeds the anticipated funding level, assign a priority to each structure or group of structures. Highest priority is given to work required to reduce hazard to human safety or prevent significant property damage.

B. *Maintenance Plan.* A maintenance plan shall be developed to schedule needed corrective or deferred and routine maintenance work on BLM-owned dams within each District or Field Office's jurisdiction. Dams no longer needed should also be scheduled for removal as part of the maintenance plan.

**.41 Budget Planning for Maintenance.** The District, Field, or Zone Engineer must see that the condition assessments summary is kept up-to-date. The summary is used to determine maintenance needs and priorities for each structure or group of structures. Plan and program maintenance work on dams in accordance with the programming, planning, and budgeting process for structures (see Manual Section 9104).

**.5 Maintenance Work.** Perform routine maintenance work on dams according to the maintenance plan. Coordinate with other maintenance and construction work.

**.51 Design.** Design and complete all major maintenance and rehabilitation work using the procedures for new construction projects (see BLM Manuals 9102 and 9103). The design staff must ensure the design is in sufficient detail to correctly accomplish the work. Proposed structural modifications must receive an independent engineering peer review.

**.52 Records.** Record any modification to structures or appurtenant structures in the project or job file and in an electronic file that is linked to FAMS.

**.6 Emergency Planning.** An EAP must be in effect for each dam classified as either high- or significant-hazard potential. Emergency planning identifies actions to minimize or prevent loss of human life if the structure fails (such as evacuations or draining the reservoir). Its first priority is preventing loss of life.

The preparation of an EAP requires both technical and management input and decisions for it to be complete and effective.

**.61 Emergency Action Plan (EAP).** If the dam is classified as high- or significant-hazard potential, prepare an EAP. Coordinate preparation of the EAP with affected Federal and State agencies, and with local response authorities. Emergency planning is done in conformity with Federal Emergency Management Agency (FEMA 64) regulations. The EAP will be prepared by the Field Office staff; reviewed by the Field Manager, the BLM State Engineer, and the State Director; and approved by the BLM Dam Safety Officer. Copies of the EAP will be furnished to appropriate local officials such as emergency management, sheriff, and others. An electronic copy of the EAP should be linked to FAMS.

A. *Inundation Maps.* The EAP will include an inundation map for areas downstream from the dam. The inundation map indicates which areas would be affected should the dam fail. The BLM State Engineer determines the adequacy of inundation maps.

B. *Testing of Plan.* The EAP should be exercised every 3 years, to include a test scenario and phone or radio contact of all parties potentially affected by the EAP.

C. **Updating of Plan.** At a minimum, EAPs are checked annually for accuracy and updated. The plan is also updated as warranted by changes in downstream land use or by changes in items delineated in .61B. The EAP is retained in the Field Office, with copies in other locations as needed to ensure adequate implementation of the plan in an emergency. When preparing or updating the plan, also note the inventory and condition assessment. Send a copy of EAP updates to the BLM State Engineer and to the BLM Dam Safety Coordinator and link the updates to FAMS. (Minor changes, such as updated names or phone numbers, do not require new approval of the EAP. However, a copy of the changes should be forwarded to the BLM Dam Safety Officer.)

**.7 Records and Reports.** Reports and records relating to inventory, maintenance, and safety of dams are retained in the individual project or job file. See BLM Manual Section 1220, Appendix 2, GRS/BLM Combined Records Schedules, for information on the disposition or retention of project files.

**.71 Specific Record Keeping Requirements.** Specific reporting requirements are as follows, in addition to the reporting requirements required by FAMS:

A. *Inventory Record.* Retain a record of inventory data in the project or job file. Inventory data for each structure must be placed inside the front cover of the project file. Retain the old inventory data, but place the newest information sheet on top. If the structure has a high- or significant-hazard potential classification or has a size classification of small, intermediate, or large, transmit the inventory data for those structures, as well as updates, to the BLM Dam Safety Officer.

B. *Condition Assessment Report.* Retain a record of all condition assessments in the project or job file. Results of technical, in-depth inspection reports are placed in the project file. Each time a BLM-owned high-, significant-, and low-hazard dam is inspected, a copy of the report shall be sent electronically to the BLM State Engineer. Each time a BLM-owned high- or significant-hazard dam is inspected, a copy of the report shall be sent electronically to the BLM Dam Safety Officer.

C. *Summary of Condition Assessments.* The summary consolidates information on maintenance and safety needs of dams for programming, planning, and budgeting.

D. *Maintenance Records.* Records are kept of maintenance work accomplished, including modifications to the physical structure. No specific format is required. "As-built" drawings are the preferred method for recording modifications. Maintenance work records are retained in the project or job file.

E. *Emergency Action Plans.* In accordance with FEMA 64, all high-hazard BLM dams must have an EAP in effect. The EAP is retained in the District or Field Office, with copies as required in FEMA 64 to other locations, to ensure adequate implementation of the plan in an emergency. A note is made in the inventory whenever an EAP is prepared or updated. Send a copy of any EAP updates for a structure in the high- or significant-hazard potential classification to the BLM Dam Safety Officer.

**.72 Reporting Dam Failures.** If a significant- or high-hazard BLM-owned dam fails, an internal board of inquiry must be appointed by the State Director and an investigation conducted. Low-hazard dam failures are reported to the BLM Dam Safety Officer for inclusion in the biennial dam safety progress report to the Federal Emergency Management Agency report. The board prepares a report and forwards it to the BLM State Engineer, and a copy is sent to the BLM Dam Safety Officer within 60 days after the failure (see H-9177-3, Reporting Dam Failures, September 2006).

The mention of company names, trade names, or commercial products does not constitute endorsement or recommendation for use by the Federal Government.

