

PART 503 - SAFETY

SUBPART A - ENGINEERING ACTIVITIES AFFECTING UTILITIES

503.00 General.

(a) Private and public utilities may be jeopardized and equipment operators and others may be injured during site investigations and construction of engineering structures if proper procedures are not followed.

(b) Established procedures for locating utilities and notifying owners are the first step in eliminating many potential accidents. These procedures, if followed, will reduce personal injuries, property damage, and interruption of utility service.

503.01 Scope.

(a) This subpart is concerned only with the minimal requirements for developing a plan to prevent damage to public or private utilities and injury to people from contact with utilities during engineering and construction activities.

(b) Public and private utilities include transmission lines, cables, and pipelines.

503.02 General considerations.

(a) SCS personnel are to take adequate precautions to minimize hazards from or damages to utilities, both overhead and underground, during location, investigation, design, and construction of any works carried out under SCS programs.

(b) Land owners or operators, sponsoring organizations and contractors are to be informed that they will be liable for any damage resulting from disruption of service caused by construction activities. They are to be informed that SCS makes no representation on the existence or nonexistence of any utilities. A letter may be used for this purpose. Absence of utilities on construction drawings is not assurance that no utilities are present at the site.

(c) SCS may be held responsible for damage done by its employees during site investigations.

(d) Indicate known utilities on construction drawing with appropriate symbols and identification.

(e) Each state office is to develop a procedure for carrying out its responsibilities within these guidelines.

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503.03 Investigations.

If subsurface investigation or construction is proposed, the responsible SCS employee is to check with the land owner or operator or with the sponsoring organizations to determine if there are underground utilities in the work area. Also check records of known utilities on file in the field office. On field inspection, particular attention should be given to utility markers set in fence lines or elsewhere.

503.04 Buried utilities.

(a) If buried utilities are known to be in the vicinity of proposed work, the responsible SCS employee is to inform the land owner or operator or the sponsoring organizations of this fact and of the land owner or operator's responsibility to take the following actions:

(1) Notify the utility company of time, place, and type of work to be done.

(2) Request that the buried utility be located and staked on the ground both horizontally and vertically by the utility owner.

(3) Request that a representative of the utility company be present during any excavation operations.

(4) Notify the contractor of the location of the utility in relation to the job work area.

(5) Fill out lost card Form SCS-ENG-5, sign, and return to SCS after the required action has been completed. Failure to return completed postcard will result in termination of SCS assistance.

(b) The responsible SCS employee must make sure that the preceding steps have been carried out by the land owner or operator or the sponsoring organizations before beginning work in the vicinity of the buried utility.

503.05 Checklist.

The responsible SCS employee is to keep a checklist, recording action taken pertaining to work in the vicinity of buried utilities. The checklist is to be maintained in the SCS job file. See Form SCS-ENG-6.

503.06 State laws.

If State laws and regulations have different requirements, SCS is to comply with the laws and regulations. Procedures may vary from 503.04 if equivalent in effectiveness..

SUBPART B - PUBLIC SAFETY AT STRUCTURE SITES

503.10 General.

Many SCS-assisted structures, by nature, may be hazardous to the public. Features designed for recreation or fish and wildlife enhancement invite the public, and children especially are attracted to structures that provide an opportunity to play in water. Reservoirs and structures such as open-top spillway risers, high- or steep-walled channels and chutes, plunge pools, and stilling basins are especially hazardous and require special attention to safety measures.

503.11 Scope.

All SCS-assisted designs and structures, regardless of who is responsible for installation and maintenance of safety measures, are to include necessary safety measures.

503.12 Recommended safety measures.

All structures are to be designed to avoid hazardous conditions where possible and safeguards to protect the public are to be provided where hazards are unavoidable. Following are some specific safety measures that should be used where appropriate:

(a) Post warning signs where they are clearly visible but not visually degrading.

(b) Paint "DANGER - STAY OFF" on risers and highwalls. Use only if no other method is appropriate. Danger signs should be unobtrusive, if possible.

(c) Locate riser in reservoir rather than in embankment if climatic conditions permit.

(d) Use covered-top drop inlet.

(e) Use low-level inlets to keep normal water level below main inlet.

(f) Do not install permanent ladders.

(g) Use trash rack that cannot be easily entered.

(h) Use catwalks only where absolutely necessary and use guard rails or protective fences with a locked gate where they are necessary.

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(i) Prevent access to deep stilling basins, drop structures, plunge pools, culverts, steep or vertical walled channels, etc., with protective chain-link fence and/or provide escape routes.

(j) Flatten side slopes of pools on at least one side.

(k) Install guard rails on the top of highwalls and steep cuts that cannot be protected with fences.

503.13 Maintenance of steep slopes.

(a) Advise farmers, maintenance personnel, and others against operating equipment on steep slopes.

(b) Recommend use of proper safety devices on equipment (protective frames, crush-resistant cabs, and seat belts).

(c) Call attention to hazards in maintenance plans and agreements.

(d) Specify safe procedures in maintenance plans and agreements that clearly exclude operation of equipment on steep slopes.

SUBPART C - SAFETY DURING GEOLOGIC INVESTIGATIONS

503.20 General.

Geologic investigations can be hazardous to the personnel involved because of the nature of site terrain and equipment used. These conditions require a careful analysis of the investigation process to anticipate and fully evaluate the potential safety hazard which may exist.

503.21 Scope.

All SCS geologic investigation plans are to include an assessment of anticipated safety hazards and a schedule of planned precautionary measures known as the Safety Plan. This plan shall include a schedule of safety meetings.

503.22 Hazard Potential.

The following potential hazards related to geologic investigations are cited for illustration. This listing is not intended to be all inclusive. Therefore, site specific safety evaluations must be made.

- (a) Rock falls and avalanches.
- (b) Landslides.
- (c) Flash floods.
- (d) Overhead utilities.
- (e) Underground utilities
- (f) Dead trees and snags.
- (g) Pit and trench walls.
- (h) Lighting.
- (i) Hazards associated with equipment use.
- (j) Snakebite.
- (k) Open test pits or bore holes.
- (l) Sinkholes.
- (m) Subsidence.
- (n) Weak bridges.
- (o) Hazardous waste.

For additional guidance see "SCS safety guide for Geologic Investigations, December 1972," and "SCS Safety Manual for Geologic Investigations."

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SUBPART D - DAM SAFETY

503.50 Involvement with dams.

(a) NRCS involvement with dams and dam safety includes activities in planning and design, and to some degree construction and operation and maintenance (O&M). NRCS is concerned about safety of dams and addresses the safety aspects at the appropriate stages of involvement. For this reason, consideration of dam safety issues is located in various places throughout the NRCS directives system. To locate the specific references consult the latest directives index (120-400).

(b) NRCS provides technical assistance on more dams than any other government agency or consulting firm. NRCS does not own these dams and most of them are nonfederal. For some, financial assistance is available through project programs. NRCS is involved in O&M activities through the preparation of O&M plans for all inventory dams (180-500.22 B and 180-500.30 D). In addition, NRCS receives inspection reports for dams installed under project activities (180-500.32). Additional technical assistance is provided for O&M as determined by the state conservationist.

(c) The Federal Guidelines for Dam Safety were prepared by the Ad Hoc Interagency Committee on Dam Safety of the Federal Coordinating Council for Science, Engineering and Technology. The guidelines were prepared in response to a Presidential memorandum of April 23, 1977, and were published on June 25, 1979. The guidelines were transmitted to the Federal agencies for implementation by the President's memorandum of October 4, 1979, which stated, "... I ask that the head of each Federal Agency responsible for or involved with planning, site selection, design, construction, certification or regulation, inspection, maintenance and operation, repair, financial or technical assistance, or ultimate disposition of dams adopt and implement the Federal guidelines, as applicable."

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503.51 USDA involvement.

(a) USDA Departmental Regulation Number 1043-18 establishes a USDA Dam Safety Committee and requires the Farmers Home Administration (FmHA), Forest Services (FS), Rural Electrification Administration (REA), Agricultural Research Service (ARS), and NRCS each to designate a dam safety officer to make up the committee. This regulation was issued in implementing the Federal Guidelines for Dam Safety. See Exhibit 506.40.

(b) The Assistant Secretary for Natural Resources and Environment chairs the committee. (e) The NRCS dam safety officer is the Executive Secretary of the committee.

(c) The Executive Secretary of the committee is the USDA contact with the Chief of Dam Safety of the Federal Emergency Management Agency (FEMA) on technical matters. The FS dam safety officer also fully participates.

503.52 NRCS Dam Safety Officer.

(a) The Director, Engineering Division, is the NRCS dam safety officer.

(b) The dam safety officer reports directly to the Chief on issues that affect dam safety. Directives and needed actions are implemented through normal channels.

(c) The dam safety officer has responsibility for—

(1) Ensuring that policy and procedures related to dam safety are adequate;

(2) Making reasonable and prudent efforts to ensure that dams installed with NRCS assistance are safe;

(3) Seeing that all levels of NRCS are aware of the need for actions to ensure that dams installed with NRCS assistance are safe;

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(4) Evaluating safety-related administrative and technical practices concerning design, construction, operation, maintenance, periodic inspections, and rehabilitation of dams;

(5) Maintaining an inventory of NRCS-assisted dams; and

(6) Providing leadership in representing NRCS in Federal and other activities leading to the establishment of policy, procedure, and criteria for dam safety.

503.53 Interagency involvement.

(a) NRCS is involved with other Federal agencies at the national level in dam safety activities, both formally and informally. As Executive Secretary of the USDA Dam Safety Committee, the Director, Engineering Division, is the USDA member on the Interagency Committee on Dam Safety (ICODS).

(b) State conservationists are encouraged to work with other Federal agencies in dam safety activities.

503.54 Other (non-governmental) involvement.

NRCS encourages its employees to become involved at all levels with various technical and professional groups in dam safety activities.

503.55 NRCS/State Relationships.

NRCS supports strong State dam-safety programs. A strong State dam-safety program is imperative because NRCS lacks operation and maintenance (O&M) authority and does not have continuing responsibility for the nonfederal dams installed under NRCS programs. It is NRCS policy to complement and not compete with State dam safety programs.

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503.56 Responsibility for dams.

The owner of a dam is responsible for potential hazards created by the dam. The States are responsible for safeguarding the lives and property of their citizens. NRCS is responsible for making sure that the assistance it provides for dams is technically sound and meets applicable state regulations and criteria.

506.57 NRCS assistance

(a) Each state conservationist is to assist the State to develop a strong dam-safety program as needed. The state conservationist is also to continue to work with others such as the State conservation committee, National Association of Conservation Districts (NACD), Land Improvement Contractors of America (LICA), Federal Emergency Management Agency (FEMA), Soil Conservation Society of America (NRCSA), American Society of Agricultural Engineers (ASAE), American Society of Civil Engineers (ASCE), National Society of Professional Engineers (NSPE), etc., to encourage strong State programs. The state conservationist should work with the State as appropriate at the policy level such as by providing model legislation and regulations and by Technology transfer. NRCS involvement in formal inspections could be limited to some percentage of the NRCS-assisted dams. This involvement, however, permits NRCS and the State to derive the benefits of mutual Technology exchange. NRCS participation in at least some of the initial inspections may also be particularly desirable to provide feedback to the design process.

(b) Each state conservationist is to establish needed working arrangement with the State for NRCS assistance in maintaining a strong State dam-safety program. It is recognized that a few years may be required for some States to implement such a program. State conservationists are to consider progress being made by their respective States in determining whether or not to continue technical and financial assistance for the installation of inventory-type dams (520.21 F) of this manual).

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503.58 Key factors.

Several key factors should be considered in developing and maintaining the State program. Among them are:

- (a) Consistency with the Federal guidelines for dam safety;
- (b) Consistency with the model state law prepared by the United States Committee on Large Dams (USCOLD);
- (c) Recognition that some classification system is desirable-- all dams are not necessarily high-hazard dams;
- (d) Assurance of proper engineering criteria through a State approval or certification system covering both design and construction;
- (e) Requirements for adequate maintenance of dams;
- (f) Procedures for adequate inspection, including appropriate participation by qualified personnel;
- (g) Provisions for periodic reviews of hazard class and educational programs and regulations to discourage development downstream of class A and B dams that would change the classification;
- (h) Provisions for emergency action plans for class C dams;
- (i) Authority to take action to alleviate unsafe conditions, such as by modifying the dam or removing the hazard;
- (j) Adequacy of staffing and funding on a continuing basis;
- (k) Inclusion of all inventory-type dams (520.21 F of this manual) in the State-regulated program.

503.59 Interim assistance.

It is anticipated that State dam-safety programs should provide for adequate inspection of dams already in existence as

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well as new ones that are built. Until a State implements its dam-safety program, the state conservationist may wish to assist by making inspection assistance available. NRCS assistance may also be desirable for the initial formal inspections of new class (b) and (c) dams. However, as a general rule, the state conservationist should encourage the State to eventually take on full responsibility and phase out the NRCS assistance.

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503.60 Exhibit. USDA Dam Safety Committee.

U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.(c) 20250

DEPARTMENTAL REGULATION	NUMBER: 1043-018
SUBJECT: USDA Dam Safety Committee	DATE: July 20, 1983
OPI: Soil Conservation Service	

1 PURPOSE

This regulation establishes a USDA Dam Safety Committee. Establishment is in the public's interest in that it will strengthen darn safety efforts in the Department and support the Executive Branch in the implementation of the "Federal Guidelines for Dam Safety."

2 SPECIAL INSTRUCTIONS

Secretary's Memorandum No. 2007, February 25, 1980, is canceled and is replaced by this regulation.

3 FUNCTIONS

This committee will coordinate and provide leadership to dam safety activities in the Department. It will assist in defining needs and in implementing procedures to enhance the safety of the dams under the agencies' jurisdiction. The committee will be concerned with the agencies' administrative and technical practices related to dam safety including design, construction, operation, maintenance, periodic inspections, and rehabilitation of dams. The committee will be advisory to the Secretary and to the agency heads.

4 MEMBERSHIP

The committee is to consist of the dam safety officers appointed by the agency heads of Farmers Home Administration (FmHA), Forest Service (FS), Rural Electrification Administration (REA), Agricultural Research Service (ARS), and the Soil Conservation Service (SCS).

The Assistant Secretary for Natural Resources and Environment is to be the Chairman. The Dam Safety Officer for SCS is to be Executive Secretary.

5 DAM SAFETY OFFICERS

Each of the member agencies is to name a dam safety officer. The responsibility of this position is to see that the agency, as a matter of policy and in actual practice, makes every reasonable and prudent effort to enhance the safety of the dams under the agency's jurisdiction. Duties should include surveillance and evaluation of the agency's administrative and technical practices related to dam safety concerning the design and construction of new dams and the operation, maintenance, periodic inspections, or rehabilitation of existing dams. Also, the officer is to make recommendations for strengthening safety practices and procedures and is to maintain an inventory of agency dams.

The dam safety officer is to report directly to the agency head on matters of dam safety. The officer is to function as an advisor to the head of the agency and through the head of the agency to the administrative and technical units.

6 FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION (FEMA)

The Chairman is to be the primary contact with FEMA for dam safety. The Executive Secretary is to participate in FEMA's activities and to represent the Department in the Chairman's absence.

The Executive Secretary is to be the contact for FEMA's Chief of Dam Safety in technical matters. Also, FS's dam safety officer is to fully participate in technical activities with FEMA's Chief of Dam Safety.