

*Association of State Dam Safety Officials  
December 2000*

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*Suggested Reference Materials  
for  
State Dam Safety Programs*

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## Introduction

In an effort to help improve state dam safety programs, the Association of State Dam Safety Officials Model Library Committee has identified a recommended core collection of materials primarily for state dam safety libraries. Committee members, listed below, represent state, federal and academic sectors:

Terry Hampton, Mead & Hunt Consulting Engineers  
Dan R. Lawrence, Tetra Tech, Inc.  
A. Leon Smothers, Kentucky Division of Water Resources  
J. Lawrence Von Thun, U.S. Bureau of Reclamation (retired)  
Bruce A. Tschantz, University of Tennessee Department of Civil Engineering  
Sarah M. Mayfield, Association of State Dam Safety Officials

ASDSO's *Suggested Reference Materials for State Dam Safety Programs* includes approximately seventy-five references from sixteen general categories of materials, all of which are representative of knowledge deemed essential for state dam safety personnel. Other dam safety engineers and specialists should also find this listing useful in their practice and research. The categories comprise a cross-section of technical, classical and historical documents.

1. General Handbooks, Reference Manuals, Textbooks
2. Dam Performance, Incidents, and Historic Failures (Includes Case Histories, Analyses/Statistical Evaluations, Lessons Learned, Legal Cases, Hearings, Books)
3. Inspections, Operating Procedures and Maintenance
4. Hazard Classification, Inundation Studies, and Emergency Preparedness
5. Monitoring, Instrumentation, and Surveillance
6. Dam Design and Analysis (a) General (b) Earthen Dams and Tailings Dams (c) Concrete Gravity Dams (d) Arch and Buttress Dams
7. Construction Inspection and Materials Testing
8. Spillway Capacity Evaluation, Modification, and Hydraulics
9. Site Exploration, Foundations, Geology, Geotechnical
10. Seismic Evaluation and Design Earthquake Selection
11. Hydrology, Design Flood and PMF
12. Overtopping Evaluation and Protection
13. Seepage and Piping
14. Laws, Regulations, and Guidelines
15. Dam Safety Programs/Management
16. Risk Assessment

The committee selected individual materials based on recommendations from state programs, ASDSO members, and personal experience. Though many of the identified items are old, or even out of print, the committee feels that they are "classics", and recognizes that while many principles involved in the practice of dam safety are constantly evolving, fundamental principles seldom change.

The Model Library Committee also identified a secondary tier of recommended materials, which follows the core list. Because they are too numerous to list individually, most conference and workshop papers are omitted. However, the committee recognizes their importance, and highly recommends:

- All ASDSO annual conference proceedings
- All ASDSO-sponsored regional/state dam safety workshop and conference publications
- All American Society of Civil Engineers Engineering Foundation Conference Proceedings (1970's)
- All U.S. Society on Dams (formerly USCOLD) annual lecture series proceedings

Engineering literature published by McGraw-Hill, Prentice Hall, John Wiley, and Elsevier is also highly recommended. The committee acknowledges that many excellent references exist, aside from those listed in this document.

The committee gratefully acknowledges the advice of Dr. Francis McLean of the U.S. Bureau of Reclamation, and others whose comments helped shape the final product. ASDSO hopes that the Model Library will be a useful tool for anyone seeking helpful references on a variety of dam safety topics. Users of this model library listing are encouraged to recommend to ASDSO other important or new references, documents, or websites, which should be considered for inclusion in either tier in future editions. If you have questions or comments regarding the ASDSO Model Library, please contact Sarah Mayfield at 859/257-5140, or [smayfield@damsafety.org](mailto:smayfield@damsafety.org).

### **Using this Document**

This document is split into four sections. The first two sections include separate lists of Tier I (the core library) and Tier II (also highly recommended) materials. Individual items may appear several times in these lists, as many contain information applicable to more than one of the sixteen identified categories.

The table in the appendices includes all listed documents and shows how each item is categorized. Bold type indicates core library materials (Tier I). Materials that are available through ASDSO are preceded by a check mark (✓).

The final section aims to assist the user in locating materials for purchase.

*ASDSO Suggested References  
for  
State Dam Safety Programs*

*Tier I Materials*

### **1. General Handbooks, Reference Manuals, Textbooks**

- Federal Emergency Management Agency. *Dam Safety: An Owner's Guidance Manual*, FEMA 145, July 1987, 117 pp.
- Federal Emergency Management Agency. *Glossary of Terms for Dam Safety*, FEMA 148, Washington, D. C., February 1988, 18 pp.
- Golzé, Alfred R.[Ed.]. *Handbook of Dam Engineering*, New York: Van Nostrand Reinhold, 1977, 793 pp.
- Sherard, James L.; Woodward, Richard J.; Gizienski, Stanley F. and Clevenger, William A. *Earth and Earth-Rock Dams: Engineering Problems of Design and Construction*. New York: John Wiley and Sons, Inc., 1963, 738 pp.
- U.S. Bureau of Reclamation. *Design of Small Dams, 3<sup>rd</sup> Edition*, 1987, 860 pp.
- U.S. Bureau of Reclamation. *Glossary of Terms*. Available on-line  
<http://www.usbr.gov/cdams/glossary.html>
- U.S. Bureau of Reclamation. *Safety Evaluation of Existing Dams (SEED Manual)*, 1992. 178 pp.
- U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

### **2. Dam Performance, Incidents, and Historic Failures (Includes Case Histories, Analyses/Statistical Evaluations, Lessons Learned, Legal Cases, Hearings, Books)**

- Federal Emergency Management Agency. *Dam Safety: An Owner's Guidance Manual*, FEMA 145, July 1987, 117 pp.
- Guggenheim Productions. *The Johnstown Flood*, Washington, D.C.: Public Broadcasting System, 1991, RT: 26 min.
- Jansen, Robert B. *Dams and Public Safety*, Denver: U.S. Bureau of Reclamation 1983, 332 pp.
- Simons, Li & Associates. *Minimizing Embankment Damage During Overtopping Flow*, Federal Highway Administration, Report 88-181 and video, November 1988.
- U.S. Bureau of Reclamation. *Safety Evaluation of Existing Dams (SEED Manual)*, 1992. 178 pp.
- U.S. Committee on Large Dams. Committee on Failures and Accidents to Large Dams. *Lessons from Dam Incidents*, New York: American Society of Civil Engineers, 1975, 387 pp.
- Web site: National Performance of Dams <http://npdp.stanford.edu>

### **3. Inspections, Operating Procedures and Maintenance**

- American Concrete Institute Committee 201. *Guide for Making a Condition Survey of Concrete in Service*, American Concrete Institute, 1984, 14 pp.
- Association of State Dam Safety Officials. *Woody Vegetation/Animal Impacts on Dams Workshop Manual* (not yet published).
- Federal Emergency Management Agency. *Dam Safety: An Owner's Guidance Manual*, FEMA 145, July 1987, 117 pp.
- STS Consultants, Ltd. *Dam Safety Guidebook*, Lansing, Michigan, 1985, ~180pp.
- Tschantz, Bruce, et al. *Bibliography on the Effects of Woody Vegetation on Dams*, ASDSO Steering Committee on Plant and Animal Penetration of Earthen Dams, University of Tennessee, September 1999, 18 pp.
- U.S. Bureau of Reclamation. *Safety Evaluation of Existing Dams (SEED Manual)*, 1992. 178 pp.
- U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.
- U. S. Department of Agriculture, Soil Conservation Service. *Operations and Maintenance Alternatives for Removing Trees from Dams*, Technical Note 705, Fort Worth, Texas: South Technical Service Center, April 1981, 8 pp.

#### 4. Hazard Classification, Inundation Studies, and Emergency Preparedness

Federal Emergency Management Agency. *Dam Safety: An Owner's Guidance Manual*, FEMA 145, July 1987, 117 pp.

Federal Emergency Management Agency. *Federal Guidelines for Dam Safety: Emergency Action Planning for Dam Owners*, FEMA 64, 1998, 36 pp.

Federal Emergency Management Agency. *Federal Guidelines for Dam Safety: Hazard Potential Classification Systems for Dams*, FEMA 333, 1998, 90 pp.

Fread, Danny L. *DAMBRK – Revision 4, National Weather Service, 1998* (manual only), or Fread, Danny L. and Lewis, J.M. *FLDWAV, National Weather Service, 1996* (manual only).

Graham, Wayne. *A Procedure for Estimating Loss of Life Due to Dam Failure*, 1997 ASDSO Annual Conference, pp. 629-640.

U.S. Bureau of Reclamation. *Safety Evaluation of Existing Dams (SEED Manual)*, 1992. 178 pp.

U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

#### 5. Monitoring, Instrumentation, and Surveillance

Federal Emergency Management Agency. *Dam Safety: An Owner's Guidance Manual*, FEMA 145, July 1987, 117 pp.

Federal Energy Regulatory Commission, *Engineering Guidelines for the Evaluation of Hydropower Projects*.

U.S. Bureau of Reclamation, *Embankment Dams Instrumentation Manual*, 1995, 268 pp.

U.S. Bureau of Reclamation. *Safety Evaluation of Existing Dams (SEED Manual)*, 1992. 178 pp.

U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

#### 6. Dam Design and Analysis

##### (a) General

Golzé, Alfred R.[Ed.]. *Handbook of Dam Engineering*, New York: Van Nostrand Reinhold, 1977, 793 pp.

Koerner, R. *Designing with Geosynthetics*, Prentice-Hall, Englewood Cliffs, N. J., 1998, 777 pp.

Lowe, John III. *Rapid Drawdown Stability/Filters and Sinkholes*, 1997, Interagency Committee on Dam Safety (ICODS) video series.

McCook, Danny. *Chimney Filters - Design and Construction Considerations*, 1997 ASDSO Annual Conference Proceedings, pp. 29-38.

McCook, Danny and Talbot, James. *NRCS Filter Design Criteria: A Step by Step Approach*, Proceedings, ASDSO Annual Conference, Atlanta, Ga., September 1995, pp. 49-58.

Portland Cement Association. [*Collection of Roller-Compacted Concrete Manuals*]

U.S. Bureau of Reclamation. *Design of Small Dams, 3<sup>rd</sup> Edition*, 1987, 860 pp.

U.S. Department of Agriculture. Natural Resources Conservation Service/Soil Conservation Service, National Engineering Handbook #4 (Some sections available on-line – see table.)

##### (b) Earthen Dams and Tailings Dams

Casagrande, Arthur; Hirschfeld, Ronald C. and Bertram, George E. *Embankment Dam Engineering: Casagrande Volume*. New York: John Wiley, 1973, 465 pp.

Cedergren, Harry R. *Seepage, Drainage and Flownets, 3<sup>rd</sup> Ed.*. New York: John Wiley & Sons, 1997.

McCook, Danny and Talbot, James. *NRCS Filter Design Criteria: A Step by Step Approach*, Proceedings, ASDSO Annual Conference, Atlanta, Ga., September 1995, pp. 49-58.



Sherard, James L.; Woodward, Richard J.; Gizienski, Stanley F. and Clevenger, William A. *Earth and Earth-Rock Dams: Engineering Problems of Design and Construction*. New York: John Wiley and Sons, Inc., 1963, 738 pp.

STABL IV, REAM or SWASE slope stability analysis program manuals.

U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

U.S. Department of Agriculture. Natural Resources Conservation Service/Soil Conservation Service, National Engineering Handbook #4 (Some sections available on-line – see table.)

U. S. Department of the Interior, Mining Enforcement and Safety Administration (MESA), Prepared by D'Appolonia Consulting Engineers, Inc. *Engineering and Design Manual, Coal Refuse Disposal Facilities*, U. S. GPO: 1975, O-579-601, 9 chapters.

### **(c) Concrete Gravity Dams**

U.S. Army Corps of Engineers. *Gravity Dam Design*, EM 1110-2-2200.

U.S. Bureau of Reclamation. *Design of Gravity Dams*, 1995, 556 pp.

U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

### **(d) Arch and Buttress Dams**

U.S. Army Corps of Engineers. *Arch Dam Design*, EM 1110-2-2201, 1994, 238 pp.

U.S. Bureau of Reclamation. *Design of Arch Dams*, 1995, 915 pp.

## **7. Construction Inspection and Materials Testing**

American Society for Testing and Materials. *ASTM Book of Standards: Cement; Lime; Gypsum, Vol. 4.01*. West Conshohocken, PA. 2001, 638 pp.

American Society for Testing and Materials. *ASTM Book of Standards: Chemical-Resistant Nonmetallic Materials; Vitrified Clay Pipe, Concrete Pipe, Fiber-Reinforced Cement Products; Mortars and Grouts; Masonry, Vol 4.05*. 2001, 1244 pp.

American Society for Testing and Materials. *ASTM Book of Standards: Concrete and Aggregates, Vol 4.02*. 2001, 780 pp.

American Society for Testing and Materials. *ASTM Book of Standards: Plastic Pipe and Building Products, Vol. 8.04*. 2001, 1488 pp.

American Society for Testing and Materials. *ASTM Book of Standards: Road and Paving Materials; Vehicle-Pavement Systems, Vol 4.03*. 2001, 1126 pp.

American Society for Testing and Materials. *ASTM Book of Standards: Soil and Rock (I): D 420 to D 5779, Vol 4.08*. 2001, 1658pp.

American Society for Testing and Materials. *ASTM Book of Standards: Soil and Rock (II): D5780 - latest; Geosynthetics, Vol 4.09*. 2001, 1382 pp.

Sherard, James L.; Woodward, Richard J.; Gizienski, Stanley F. and Clevenger, William A. *Earth and Earth-Rock Dams: Engineering Problems of Design and Construction*. New York: John Wiley and Sons, Inc., 1963, 738 pp.

U.S. Army Corps of Engineers. *Construction Control for Earth and Rock-fill Dams*, EM 1110-2-1911, 1995.

U.S. Bureau of Reclamation. *Design of Small Dams, 3<sup>rd</sup> Edition*, 1987, 860 pp.

U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

## **8. Spillway Capacity Evaluation, Modification, and Hydraulics**

Brater, E.F., and King, H.W. *Handbook of Hydraulics for the Solution of Hydraulic Engineering Problems*, New York: McGraw-Hill, Seventh Edition, 1996, 640 pp.

- Chow, Ven Te. *Open Channel Hydraulics*, McGraw-Hill, 1959, 680 pp.
- Davis, Calvin V. and Sorenson, Kenneth E. *Handbook of Applied Hydraulics*, New York: McGraw-Hill, 1969 (1 v., various pagings).
- Doubt, P.B., et. al. *Hydraulics of Broad-Crested Spillways*, Technical Release 39, Soil Conservation Service, U.S. Department of Agriculture, 1968.
- Elevatorski, Edward A. *Hydraulic Energy Dissipators*, New York: McGraw Hill, 1959, 214 pp.
- Federal Highway Administration. *Hydraulic Charts for the Selection of Highway Culverts*, Hydraulic Engineering Circular No. 5, December 1965, 54 pp.
- Federal Highway Administration. *Hydraulic Design of Energy Dissipators for Culverts and Channels*, Hydraulic Circular No. 14, US Dept of Transportation, September 1983, 316 pp.
- U.S. Army Corps of Engineers. *Hydraulic Design of Spillways*, Engineering Manual EM 1110-2-1603, March 1965 (On-line document).
- U.S. Army Corps of Engineers. Hydrologic Engineering Center. *HEC-2 Water Surface Profiles*, Version 4.6k or *HEC-RAS Program and Manual*: Davis, CA., 1990 (revised September 1991).
- U.S. Bureau of Reclamation. *Design of Small Dams, 3<sup>rd</sup> Edition*, 1987, 860 pp.
- U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.
- U.S. Department of Agriculture. Natural Resources Conservation Service/Soil Conservation Service, National Engineering Handbook #4 (Some sections available on-line – see table.)

## 9. Site Exploration, Foundations, Geology, Geotechnical

- Casagrande, Arthur; Hirschfeld, Ronald C. and Bertram, George E. *Embankment Dam Engineering: Casagrande Volume*. New York: John Wiley, 1973, 465 pp.
- Cedergren, Harry R. *Seepage, Drainage and Flownets, 3<sup>rd</sup> Ed.*. New York: John Wiley & Sons, 1997.
- Deere, D.U. *Dam Foundations*, 1996, Interagency Committee on Dam Safety (ICODS) video series.
- Legget, Robert F. and Karrow, Paul F. *Handbook of Geology in Civil Engineering*, McGraw-Hill, 1983.
- Lowe, John III. *Rapid Drawdown Stability/Filters and Sinkholes*, 1997, Interagency Committee on Dam Safety (ICODS) video series.
- McCook, Danny. *Chimney Filters - Design and Construction Considerations*, 1997 ASDSO Annual Conference Proceedings, pp. 29-38.
- Mitchell, James K. *Ground Improvements for Dam Safety*, 1999, Interagency Committee on Dam Safety (ICODS) video series.
- Terzaghi, Karl, Peck, Ralph, Mesri, Gholamreza. *Soil Mechanics and Engineering Practice*, 1996.
- Tschebotariouff, Gregory P. *Foundations, Retaining and Earth Structures: The Art of Design and Construction and Its Scientific Basis in Soil Mechanics*, 1973.
- U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

## 10. Seismic Evaluation and Design Earthquake Selection

- Cedergren, Harry R. *Seepage, Drainage and Flownets, 3<sup>rd</sup> Ed.*. New York: John Wiley & Sons, 1997.
- Hynes-Griffin, Mary and Franklin, Arley. *Rationalizing the Seismic Coefficient Method*, USACE Misc. Paper GL-84 13, 1984.
- Idriss, I.M. *Behavior of Embankment Dams During Earthquakes* (To be released as part of Interagency Committee on Dam Safety (ICODS) video series).
- Makdisi, F. I. and Seed, H. I. *A Simplified Procedure for Estimating Earthquake Induced Deformations in Dams and Embankments*, EERC 77/19 August 1977.

National Research Council. *Liquefaction of Soils During Earthquakes*, Washington, D.C.: National Academy Press, 1985, 240 pp.

National Research Council. *Safety of Dams Flood and Earthquake Criteria*, Washington, D.C.: National Academy Press, 1985, 292 pp. (Available online, <http://www.nap.edu>).

Seed, H. Bolton; Makdisi, Faiz I. and De Alba, Pedro. *Performance of Embankment Dams during Earthquakes*, 1977, Report No. UCB/EERC-77/20, Earthquake Engineering Research Center College of Engineering University of California – Berkeley.

### **11. Hydrology, Design Flood and PMF**

Brater, E.F., and King, H.W. *Handbook of Hydraulics for the Solution of Hydraulic Engineering Problems*, New York: McGraw-Hill, Seventh Edition, 1996, 640 pp.

Chow, Ven Te. *Handbook of Applied Hydrology*, New York: McGraw-Hill, 1964.

Davis, Calvin V. and Sorenson, Kenneth E. *Handbook of Applied Hydraulics*, New York: McGraw-Hill, 1969 (1 v., various pagings).

Federal Emergency Management Agency. *Selecting and Accommodating Inflow Design Floods for Dams*, FEMA 94, 1998.

Federal Energy Regulatory Commission. *Engineering Guidelines for the Evaluation of Hydropower Projects*.

U.S. Army Corps of Engineers. Hydrologic Engineering Center. *HEC-1 Flood Hydrograph Package, Version 4.0* or HEC-HMS (program and manual), Davis, CA, 1990.

U. S. Army Corps of Engineers, Hydrologic Engineering Center. *HMR-52, Probable Maximum Storm (Eastern United States), Users Manual and Software*, March 1984, 89 pp. (all HMR manuals appropriate to region).

U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

U.S. Department of Agriculture. Natural Resources Conservation Service/Soil Conservation Service, National Engineering Handbook #4 (Some sections available on-line – see table).

U. S. Department of Commerce, NOAA and U. S. Department of Army, Corps of Engineers. *Hydrometeorological Report No. 51 (HMR-51), Probable Maximum Precipitation Estimates, United States East of the 105th Meridian*, Washington, D. C., June 1978, 87 pp. (HMR reports appropriate to region).

### **12. Overtopping Evaluation and Protection**

Brater, E.F., and King, H.W. *Handbook of Hydraulics for the Solution of Hydraulic Engineering Problems*, New York: McGraw-Hill, Seventh Edition, 1996, 640 pp.

Davis, Calvin V. and Sorenson, Kenneth E. *Handbook of Applied Hydraulics*, New York: McGraw-Hill, 1969 (1 v., various pagings).

Simons, Li & Associates. *Minimizing Embankment Damage During Overtopping Flow*, Federal Highway Administration, Report 88-181 and video, November 1988.

U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

### **13. Seepage and Piping**

Cedergren, Harry R. *Seepage, Drainage and Flownets, 3<sup>rd</sup> Ed.*. New York: John Wiley & Sons, 1997.

Koerner, R. *Designing with Geosynthetics*, Prentice-Hall, Englewood Cliffs, N. J., 1998, 777 pp.

McCook, Danny. *Chimney Filters - Design and Construction Considerations*, 1997 ASDSO Annual Conference Proceedings, pp. 29-38.

McCook, Danny and Talbot, James. *NRCS Filter Design Criteria: A Step by Step Approach*, Proceedings, ASDSO Annual Conference, Atlanta, Ga., September 1995, pp. 49-58.

Peck, Ralph. *Seepage and Piping*, 1995, Interagency Committee on Dam Safety (ICODS) video series.

U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

U.S. Department of Agriculture. Natural Resources Conservation Service/Soil Conservation Service, National Engineering Handbook #4 (Some sections available on-line – see table).

Von Thun, Lawrence. *Understanding Piping and Seepage Failure – the No. 1 Dam Safety Problem in the West*, ASDSO West Regional Conference, 1996, pp. 3-21.

#### **14. Laws, Regulations, and Guidelines**

Association of State Dam Safety Officials. *Summary of State Laws & Regulations on Dam Safety*, July 2000, 163 pp.

Federal Emergency Management Agency. *Federal Guidelines for Dam Safety: Emergency Action Planning for Dam Owners*, FEMA 64, 1998, 36 pp.

Federal Emergency Management Agency. *Federal Guidelines for Dam Safety: Hazard Potential Classification Systems for Dams*, FEMA 333, 1998, 90 pp.

Federal Energy Regulatory Commission, *Engineering Guidelines for the Evaluation of Hydropower Projects*.

National Research Council. *Safety of Dams Flood and Earthquake Criteria*, Washington, D.C.: National Academy Press, 1985, 292 pp. (Available online, <http://www.nap.edu>).

Web site: Washington State Guidelines (good model)  
[http://www.wa.gov/ecology/wr/dams/guidelines\\_part\\_1.pdf](http://www.wa.gov/ecology/wr/dams/guidelines_part_1.pdf)

#### **15. Dam Safety Programs/Management**

Association of State Dam Safety Officials. *Summary of State Laws & Regulations on Dam Safety*, July 2000, 163 pp.

Association of State Dam Safety Officials and the Federal Emergency Management Agency. *Model State Dam Safety Program*, FEMA 316, March 1998, 211 pp.

Federal Emergency Management Agency. *Dam Safety: An Owner's Guidance Manual*, FEMA 145, July 1987, 117 pp.

U.S. Bureau of Reclamation. *Safety Evaluation of Existing Dams (SEED Manual)*, 1992. 178 pp.

U.S. Bureau of Reclamation. *Training Aids for Dam Safety*, Denver, 1988.

Web site: Washington State Guidelines: [http://www.wa.gov/ecology/wr/dams/guidelines\\_part\\_1.pdf](http://www.wa.gov/ecology/wr/dams/guidelines_part_1.pdf)

#### **16. Risk Assessment**

American Society of Civil Engineers. [*Risk Guidelines*]- not yet published.

Federal Emergency Management Agency. *Dam Safety: An Owner's Guidance Manual*, FEMA 145, July 1987, 117 pp.

Graham, Wayne. *A Procedure for Estimating Loss of Life Due to Dam Failure*, 1997 ASDSO Annual Conference, pp. 629-640.

National Research Council. *Safety of Dams Flood and Earthquake Criteria*, Washington, D.C.: National Academy Press, 1985, 292 pp. (Available online, <http://www.nap.edu>).

U.S. Bureau of Reclamation. *Guidelines to Decision Analysis*, ACER Technical Memorandum No. 7, Denver, 1986, 223 pp.

U.S. Committee on Large Dams. *Eighteenth Annual USCOLD Lecture: Managing the Risks of Dam Project Development, Safety and Operation*, 1998.

Von Thun, Lawrence; Bowles, David and McCann, Martin. *Workshop on Risk Assessment*, ASDSO Technical Seminar, Oct. 1999, 325 pp.

*ASDSO Suggested References  
for  
State Dam Safety Programs*

*Tier II Materials*

## ASDSO Model Library – Second Tier Materials

### 1. General Handbooks, Reference Manuals, Textbooks

Canadian Dam Association. *Canadian Dam Safety Guidelines*, 1999, 115 pp.

Creager, William P.; Justin, Joel D. and Hinds, Julian. *Engineering for Dams*, New York: John Wiley and Sons, 1945 (3 vol.).

Jansen, Robert B. *Advanced Dam Engineering for Design, Construction, and Rehabilitation*, New York: Van Nostrand Reinhold, 1990, 832 pp.

National Academy of Sciences, National Research Council Committee on Safety of Existing Dams. *Safety of Existing Dams - Evaluation and Improvement*, Washington, D. C.: National Academy Press, 1983, 354 pp.

Roberson, John, Cassidy, John, and Chaudhry, M. *Hydraulic Engineering*, Boston: Houghton Mifflin Co., 1988, 662 pp.

Singh, Sukhmander [Ed.]. *Embankment Dams, James L. Sherard Contributions*, American Society of Civil Engineers, 1992, 573 pp.

U.S. Ad Hoc Interagency Committee on Dam Safety. *Federal Guidelines for Dam Safety*, Washington, D. C.: Federal Coordinating Council for Science, Engineering and Technology (FCCSET), June 1979, 39 pp. + appdc.

### 2. Dam Performance, Incidents, and Historic Failures (Includes Case Histories, Analyses/Statistical Evaluations, Lessons Learned, Legal Cases, Hearings, Books)

Colorado State University Engineering Research Center (for Terra Aqua Co, Reno, NV). *Hydraulic Tests on Reno Mattresses*.

Foster, K. Neill and Mills, Eric. *Dam Break in Georgia*, Camp Hill, Pa.: Horizon House Publishers, 1978, 160 pp.

Foster, Mark A.; Spannagle, Matt and Fell, Robin. *Report on the Analysis of Embankment Dam Incidents*, 1998, University of New South Wales, UNICIV report ; no. R-374.

International Commission on Large Dams. *Lessons from Dam Incidents, CD-ROM*, Paris, 1974-1999 (re-issue of the 1974 book), 1069 pp.

International Water Power and Dam Construction. *Four Major Dam Failures* [Baldwin Hills, Teton, Malpasset, and Vaiont] *Re-examined*, Vol. 37, No. 11, November 1985, p. 33.

Johnson, Willis F. *History of the Johnstown Flood*, Philadelphia: Edgewood Publishing Co., 1889, 518 pp.

Quail Creek Dike Failure Independent Review Team (Utah); Utah State Engineer. *Investigation of the Cause of Quail Creek Dike Failure*. Office of the State Engineer, Salt Lake City, 1989, 155 pp

*Re-Evaluation of the Lower San Fernando Dam:*

- 1) *Report 1. An Investigation of the February 9, 1971 Slide*. Volume 1. (Castro, G; Keller, TO; Boynton, SS). GEI Consultants, Inc., Winchester, MA. Sep 1989. 108p. Report: GLTR-89.
- 2) *Report 2. Examination of the Post-Earthquake Slide of February 9, 1971*. (Seed, HB; Seed, RB; Harder, LF; Jong, H). Seed (H. Bolton), Inc., Orinda, CA. Sep 1989. 274p. Report: WES/CR/GL89-2-2.
- 3) *Report 3. The Behavior of Undrained Contractive Sand and Its Effect on Seismic Liquefaction Flow Failures of Earth Structures* (Vasquez-Herrera, A; Dobry, R). Army Engineer Waterways Experiment Station, Vicksburg, MS. Geotechnical Lab. Sept 1989. 546pp. Report: WES/CR-GL-89-2.

Stenger, Ferdinand. *Bibliography of Dam Failures*, Denver: U.S. Bureau of Reclamation, 1964.

U.S. Bureau of Reclamation. *Concrete Dams: Case Histories of Failures and Nonfailures with Back Calculations*, USBR DSO-98-005, Denver, 1998.

U. S. Department of the Interior, Teton Dam Failure Review Group. *Failure of Teton Dam, Final Report*, Washington, D. C.: Government Printing Office, January 1980, 800 pp.

U. S. House of Representatives, 95th Congress, Subcommittee of the Committee on Government Operations. *Dam Safety Hearings, March 15, 17 and June 30, 1977*, Washington, D. C.: Government Printing Office, 1977, 618 pp.

U. S. House of Representatives, 95th Congress, Subcommittee of the Committee on Government Operations. *Teton Dam Disaster: Hearings, August 5, 6, and 31, 1976*, Washington, D. C.: Government Printing Office, 1976, 678 pp.

Wiley, A.J.; et al. *Causes Leading to the Failure of the Saint Francis Dam*, March 24, 1928.

### **3. Inspections, Operating Procedures and Maintenance**

American Society of Civil Engineers. *Inspection, Maintenance and Rehabilitation of Old Dams*, Proceedings of the Engineering Foundation Conference, Pacific Grove, California, September 1973, 946 pp.

Association of State Dam Safety Officials. *Compendium of State Dam Safety Program Inspection Forms*, 1997, 250 pp.

Brock, Dan S.; Levy, Sidney M. and Sutcliffe, Lystre L. *Field Inspection Handbook*, New York: McGraw-Hill, 1995 (1 v. – various pagings).

Canadian Dam Association. *Canadian Dam Safety Guidelines*, 1999, 115 pp

Cassidy, J.J. *Reservoir Freeboard Design, Fundamental Hydraulics and Hydrology of Dam Design*, Short Course - University of Missouri, Rolla, 1981.

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# ***APPENDICES***

**Tables ..... pp. 25-56**

**Sources of Materials..... pp. 57-58**



## ASDSO Model Library

The following table includes both Tier I and Tier II materials. Bold type indicates core library materials (Tier I). Materials that are available through ASDSO are preceded with a check mark (✓). References are classified by one or more of sixteen general categories:

1. General Handbooks, Reference Manuals, Textbooks
2. Dam Performance, Incidents, and Historic Failures (Includes Case Histories, Analyses/Statistical Evaluations, Lessons Learned, Legal Cases, Hearings, Books)
3. Inspections, Operating Procedures and Maintenance
4. Hazard Classification, Inundation Studies, and Emergency Preparedness
5. Monitoring, Instrumentation, and Surveillance
6. Dam Design and Analysis (a) General (b) Earthen Dams and Tailings Dams (c) Concrete Gravity Dams (d) Arch and Buttress Dams
7. Construction Inspection and Materials Testing
8. Spillway Capacity Evaluation, Modification, and Hydraulics
9. Site Exploration, Foundations, Geology, Geotechnical
10. Seismic Evaluation and Design Earthquake Selection
11. Hydrology, Design Flood and PMF
12. Overtopping Evaluation and Protection
13. Seepage and Piping
14. Laws, Regulations, and Guidelines
15. Dam Safety Programs/Management
16. Risk Assessment

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Abt, R. and Johnson, R.L., <i>Riprap Design for Overtopping Flow</i> , ASCE Journal of Hydraulic Engineering, Vol. 117, No. 8, August, 1991, pp. 959-972												X				
Afshar, A., <i>The Development of Labyrinth Spillway Designs</i> , Water Power and Dam Construction, May 1988								X								
Aisenberg, A.J., et. Al., <i>Design of Small Canal Structures</i> , US Bureau of Reclamation, Denver Co., 1974.								X								
Akmedov. T.K., <i>Calculation of the Depth of Scour in Rock Downstream of a Spillway</i> , Water Power and Dam Construction, December 1988.								X								
Ambursen Hydraulic Construction Company, <i>Ambursen Dams: Selected Articles from the Ambursen Hydraulic Construction Company</i> , 1912						X										
American Iron and Steel Institute, <i>Handbook of Steel Drainage and Highway Construction Products</i> , Second Edition, 1971.								X								
<b>American Concrete Institute Committee 201. Guide for Making a Condition Survey of Concrete in Service</b> , American Concrete Institute, 1984, 14 pp.			X													
American Society of Civil Engineers. <i>Construction Control for Earth and Rockfill Dams</i> , 1999 (Technical engineering and design guides as adapted from the U.S. Army Corps of Engineers; no. 27)						X										
American Society of Civil Engineers. <i>Economical Construction of Concrete Dams</i> , Proceedings of the Engineering Foundation Conference, Pacific Grove, California, May 1972, 558 pp.						X										
American Society of Civil Engineers. <i>Embankment Dams: James L. Sherard Contributions</i> , 1992, pp. 384-402.						X			X							
American Society of Civil Engineers, <i>Evaluation Procedures for Hydrologic Safety of Dams</i> , 1988											X					
American Society of Civil Engineers. <i>Inspection, Maintenance and Rehabilitation of Old Dams</i> , Proceedings of the Engineering Foundation Conference, Pacific Grove, California, September 1973 (946 pp.)			X													
American Society of Civil Engineers. <i>Instrumentation of Embankment Dams and Levees</i> , Technical engineering and design guides as adapted from the U.S. Army Corps of Engineers, No. 26, 1999, 88 pp.					X											
American Society of Civil Engineers. [ <i>Risk Guidelines</i> ]- not yet published																X

**Categories:**

1. General Handbooks, Reference Manuals, Textbooks
2. Dam Performance, Incidents, and Historic Failures (Includes Case Histories, Analyses/Statistical Evaluations, Lessons Learned, Legal Cases, Hearings, Books)
3. Inspections, Operating Procedures and Maintenance
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7. Construction Inspection and Materials Testing
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12. Overtopping Evaluation and Protection
13. Seepage and Piping
14. Laws, Regulations, and Guidelines
15. Dam Safety Programs/Management
16. Risk Assessment

**Bold type = Tier I materials**

**✓ = Available through ASDSO**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
American Society of Civil Engineers and U. S. Committee on Large Dams. Joint Committee. <i>Current U. S. Practice in the Design and Construction of Arch Dams, Embankment Dams, Concrete Dams</i> , 1967, 131 pp.						X a										
American Society of Civil Engineers. Soil Mechanics and Foundations Division. <i>Terzaghi Lectures : 1963-1972</i> , New York: American Society of Civil Engineers, 1974 (421 pp.)						X a										
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<b>American Society for Testing and Materials, <i>ASTM Book of Standards: Cement; Lime; Gypsum, Vol. 4.01, 2001, 638 pp.</i></b>							X									
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### **General Sources**

Most items in print can be purchased from on-line booksellers, such as Barnes and Noble and Amazon.

Items that can be obtained through ASDSO, including most materials produced by the Federal Emergency Management Agency (FEMA) and the Interagency Committee on Dam Safety (ICODS) are preceded with a ✓ in the tables on pp. 24-55.

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**Canadian Dam Association**

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**U.S. Society on Dams (formerly U.S. Committee on Large Dams)**

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