



Association of State Dam Safety Officials

Request for Proposal/Qualifications

The Association of State Dam Safety Officials (ASDSO) is soliciting statements of qualifications and proposals from engineering consulting firms, research groups, academics, and others who are qualified to develop and conduct technical training seminars on dam safety issues for state dam safety personnel and other interested ASDSO members.

Project Overview

ASDSO's Technical Training Committee has identified two topics to be developed into Core Classroom Courses in the coming year. Once developed, these courses will be added to the regular biennial rotation of courses (there are currently 9 courses offered) and will also become available as 'on-the-shelf' classroom courses as requested by State Dam Safety Programs or as needed. For courses that become part of the biennial rotation, instructors will be given at least 12 months' notice for planning purposes. For courses that are requested by States or as needed, instructors will be given at least 3 months' notice for planning purposes.

Instructors chosen to develop the course will be the primary training team on this topic for ASDSO. Each course should be structured so that additional qualified (ASDSO-approved) instructors could be tapped to instruct the course should there be a time and date that the primary training team is not available. The primary training team may be compensated separate from this project to assist with training additional trainers (to be negotiated and determined as needed).

Course 1: DESIGN AND TECHNICAL SPECIFICATIONS REVIEW – 2.5 Day Course

Course 2: DAM CONSTRUCTION INSPECTION -2.5 Day Course

A suggested content outline for each topic is attached. The outline should be used as a basis for the course agenda. Once a proposal is selected, the ASDSO Technical Training Committee will work with the contractor to plan, develop, and conduct a seminar on the proposed topic.

Project Cost:

The contractor's cost proposal should identify estimated expenses including, but not limited to the following items:

- Pre-seminar critique with ASDSO Training Committee
- Time/labor expenses separately identified for course development and presentation.
- Speaker travel and accommodation
- Development of materials.
- Post -seminar critique with ASDSO Training Committee

Development and delivery guidelines below represent ASDSO estimated costs based on similar trainings.

Per Course - Development: \$28,000

<u>TIME/LABOR @ \$140 per hour</u>	HOURS
Research and Data Gathering	40
Creating PowerPoint or other presentation content	75
Developing student manual, handouts, files for digital download	45
Review and editing	40
	200

Per Course – Delivery: Labor - \$7,700 Per Instructor. Travel – Not-to-Exceed: \$1,200 Per Instructor

<u>TIME/LABOR- Per Instructor</u>	HOURS	RATE	SUBTOTAL	TOTAL
Content review, rehearsal and other prep*	12	\$175.00	\$2,100.00	
Travel Days	12	\$175.00	\$2,100.00	
Teaching Days	20	\$175.00	\$3,500.00	\$7,700.00

Timeline

Proposals must be submitted to ASDSO by March 27, 2020

Proposals will be evaluated by the Technical Training Committee, and selections will be announced no later than the end of April 2020.

Course developers will have approximately 5 months to develop course content and accompanying materials. The pilot course will be offered in the fall/winter of 2020 with subsequent courses offered starting in 2021.

Scope of Work

- A. The contractor will be responsible for the following items and their expenses. All tasks and procedures will be under the supervision and subject to the approval of ASDSO:
 - Develop the Full Seminar Agenda - contractor will submit a full agenda complete with subject headings, speakers, and time schedules to the Training Committee for review and comment.
 - Develop the Course Materials - contractor will develop the course materials, including printed handouts and reference documents. The contractor will submit a draft copy of the course materials to the training committee for review and comment.
 - Secure All Speakers - contractor will be responsible for securing all seminar lecturers and making travel arrangements for speakers
 - Conduct Seminar - contractor will conduct the seminar based on the agenda submitted to and approved by ASDSO.
 - Review - Each presentation of the seminar will be subject to review by the Training Committee, which will provide suggestions for modification and improvement. Evaluation forms completed by the seminar participants will be reviewed as part of the post seminar critique. The review is often conducted via conference call but will be scheduled in a format that is agreeable to all parties.

B. ASDSO will be responsible for the following items and associated expenses:

- ASDSO will arrange the meeting site and guestroom block.
- ASDSO will be responsible for conducting seminar registration and all advertising of the seminar.

Audience

ASDSO Technical Seminars are attended by a wide cross section of the dam and levee safety community including state dam safety engineers and inspectors as well as federal regulators, private sector engineers, and others with an interest in dam safety. Technical Seminar attendees also represent a mix of experience levels from those just starting out in their career to experienced engineers looking to further their expertise.

Format of Technical Proposal

Required Elements: Please include the following in the proposal:

- Detailed course outline, a list and description of course materials, and a list of proposed speakers.
- Qualifications for teaching the subject matter.
- Examples of previous similar courses developed and taught.
- A general range of available dates for presenting the seminar in 2020 (August to December) and Calendar 2021.

Suggestions:

- More than one speaker is preferable.
- Course preparation should include a survey of attendees prior to the seminar to determine the needs and experience levels of the participants.
- The course should be flexible enough so that it can be tailored to meet students' needs (beginning or advanced levels) or geographical variations that affect the topic.
- The course should include many practical examples/applications.
- The course should include information on references and tools available on the topic.

Please Note: Any proposals marketing the specific services or products of private companies will be disqualified. No individual or company marketing will be accepted as part of the seminar training.

Proposal Evaluation Process

The Training Committee will evaluate proposals based on the following numerically weighted factors (total of 100 points):

- The experience the contractor has had in developing and presenting training courses like the one that is proposed. References must be cited. (Factor weight of 20)
- The experience the contractor has with producing technical educational materials or similar documents. Please provide examples. (Factor weight of 15).
- The administrative and technical expertise of the seminar developers and instructors, their names and their credentials including references, and the number of hours to be allocated toward development and presentation of the seminar itself, and preparation of the seminar materials. (Factor weight of 30)
- The number of speakers available to make presentations. (Factor weight of 10)
- The flexibility and ability of contractor to conduct the proposed seminar at various dates and locations based on the needs of the ASDSO, and the ability of the contractor to develop a seminar curriculum that accomplishes the goal of the course. (Factor weight of 10)
- The proposed organization and development of the course agenda. The course outline provided by ASDSO sets the minimum as to what should be covered. The Contractor shall develop a full course agenda and present in detail. (Factor weight of 15)

ASDSO reserves the right to reject any or all proposals.

Questions may be addressed to Jennifer Burns, ASDSO Training Program Director, jburns@damsafety.org or 859-550-2788.

Association of State Dam Safety Official Technical Seminar

DESIGN AND TECHNICAL SPECIFICATION REVIEW CLASSROOM COURSE Outline

Prerequisite: None

Suggested Length: 2 to 2.5 Days

Purpose: To provide a general understanding on how to perform reviews of design documents, plans and specifications. This includes internal QA review, Independent review, and Agency/Regulatory review. The course shall include the development of consistent review criteria, guidance to evaluate if the design is consistent with reasonable application of current state-of-practice, technical review (filter compatibility, hydrology, seismic, etc.), Value Engineering and regulatory compliance.

Introduction and Course Overview

1. Purpose, Objectives, and Outcomes of the Course
 - A. Discussion on design, plans and spec review. Includes Internal QA Review, Independent Review, and Agency/Regulatory Review. Course includes the development of consistent review criteria, guidance to evaluate if the design is consistent with reasonable application of current- state-of-practice, technical review (filter compatibility, hydrology, seismic, etc.), Value Engineering and regulatory compliance.
 - B. Objectives and responsibilities of each type of review.
 - a. Internal Review (EOR/Designer)
 - i. Peer Review (Independent engineer, construction professional, or team)
 - ii. Acceptance Review (Owner/owner's representative)
 - iii. Compliance Review (Regulator)
 - iv. Construction Review (Contractor, construction manager, inspector, etc...)
 - v. Other
 - C. Design review of new dam and rehabilitation of existing dams.
 - D. Discussion on the need for design review.
2. Scope of the Course and Materials
 - A. Technical review guidelines
 - B. Example criteria
 - C. Workshop sessions
 - D. Reference material
3. Problems Caused by Poor Design, Plans and Specifications
 - A. Increased construction costs
 - B. Change conditions/change orders
 - C. Contractor uncertainties result in increased bids
 - D. Increased field corrections
 - E. Potential failure
 - F. Loss of water
 - G. Unsafe Dam
 - H. Increased Maintenance responsibilities and costs
4. Design State-of-Practice
 - A. Hydrology

- i. Basin Parameters
 - ii. Time of Concentration/Lag
 - iii. Land Use/Soils
 - iv. Rainfall Depts. and Distributions
 - v. PMP Updates
 - vi. Snow
 - vii. Methodology Applicability & Updates
 - viii. Computers Models
 - B. Hydraulics
 - i. Stream/River/Open Channel
 - ii. Structures
 - iii. Conduits
 - iv. Spillways
 - v. Energy Dissipation
 - vi. Tail water
 - vii. Low-Level Drains
 - viii. Over Topping
 - ix. Freeboard
 - x. Computer Models
 - xi. Wave Action
 - C. Embankment/Rock Fill
 - i. Seepage
 - ii. Stability
 - iii. Cutoff Walls
 - iv. Filter and Drains
 - v. Embankments
 - vi. Foundations
 - vii. Grouting
 - viii. Others
 - D. Concrete/Composite
 - i. Conventional Concrete
 - ii. Roller Compacted Concrete
 - iii. Construction Details
 - iv. Reinforcement
 - v. Other
 - E. Risk
 - i. PFMA Overview
 - ii. PFMA- Pre/Post Design Pre-Construction
 - iii. New/ Rehabilitation
 - F. Legal and Liability
5. Design Reports
- A. Dam Design Report
 - B. Hydrology Report
 - C. Geotechnical and Foundation report
 - D. Hazard classification report
 - i. Dam Break Modeling
 - ii. Inundation mapping
 - iii. PAR
 - E. Other
 - F. Common errors/ omissions

6. Review Sequence

- A. Project Scope and Goals
 - i. Owner
 - ii. Regulatory
 - iii. Contracting
- B. Project History
 - i. File Review
 - ii. Institutional Knowledge
- C. Design Standards
 - i. State/Federal
 - ii. Project size/ Complexity
 - iii. Standard of Practice
- D. Existing Conditions
 - i. Surveys
 - ii. Utilities
 - iii. Structures
- E. Geotechnical
- F. Structural
- G. Construction Plans
- H. Technical Specifications
- I. Constructability and Access
- J. Other

7. Plans and Construction Drawings

- A. Purpose of construction plans/drawings
 - i. Clear guidance during construction
 - ii. Contractor Information-construction sequence, cost, schedule, etc.
 - iii. Other
- B. Drawing Set Overview
 - i. General
 - ii. Sections
- C. General
- D. Civil
- E. Structural
- F. Other
- G. Details and Notes
- H. Common errors/ omissions

8. Review Criteria/ Example

- A. Site Preparation
- B. Embankment
- C. Foundation
- D. Seepage Collection
- E. Instrumentation
- F. Principal Outlet
- G. Spillway(s)
- H. Intakes
- I. Erosion
- J. Constructability

9. Review Mechanics

- A. Process
 - i. Regulatory

- ii. Owner
 - iii. Consultant
 - B. Review Schedule
 - C. Checklists and Guidelines
 - D. Standard/ Optional Color Coding
- 10. Plan Review Workshop
- 11. Specification Content Principals
 - A. Specification Purpose
 - B. Comport with Project size and complexity
 - C. Content Overview
 - D. With/Without contract/bid documents
 - E. Supplemental conditions
 - F. Contract Documents
 - G. Common errors/ omissions
- 12. Specification Format
 - A. Agency
 - B. Firm / CSI Master
 - C. Owner
 - D. Featured Based
 - E. Trade Based
- 13. Performance / Prescriptive
 - A. Principles/Flaws in the preparation of Performance Specs
 - B. Principles/Flaws in the preparation of Prescriptive Specs
- 14. Product Procurement Specifications
- 15. Typical Construction Specifications
 - A. Groups
 - B. Subgroups
 - C. Divisions
- 16. Specification Content
 - A. Section Required
 - B. Cross referenced sections
 - C. Cross referenced submittals
 - D. Standards reference appropriate (ASTM, etc)
 - E. Conflicts/Consistent with drawings
 - F. Consistent terminology and grammar
 - G. QA/QC clarity
 - H. Disputes/Change orders/Or Equal/Payment
 - I. Project Close Out
- 17. Specification Workshop
- 18. Review/ Closeout

Association of State Dam Safety Official Technical Seminar

DAM CONSTRUCTION INSPECTION CLASSROOM COURSE Outline

Prerequisite: None

Suggested Length: 2 to 2.5 Days

Purpose: To provide an introduction and guidance on the various types of field inspections that may be encountered during the construction or reconstruction of a regulated dam. Applicants are encouraged to include a variety of case histories varying in size and focus more towards dams less than 50 feet in height.

1. General Construction Inspection Information

A. Preparation for Inspection

- i. Equipment (Bare Minimum) – Testing equipment, camera, Notebook/tablet, Checklists, measuring devices, flagging, specialized equipment
- ii. Personal Protective Equipment (standard vs. site specific)
- iii. Review Scope/Purpose of Project
- iv. Review of plan, specifications and supporting design documents (if necessary)
- v. File Review (previous inspections and dam history)
- vi. Review of Construction Schedule

B. Responsibilities

- i. Personnel at job site and their roles/responsibilities – Owner, Contractor (Organization/Communication flowchart with contact information is ideal) Superintendent, Foreman, etc, dam safety regulator, owner's inspector, other inspectors (ie: funder/ lender, OSHA, Media, others)
- ii. Types of meetings – Pre-construction, progress meetings, special/emergency meetings
- iii. Full time vs. part time vs. unannounced inspections – When to be there
- iv. Purpose of inspection – Engineer for owner, state dam safety office, state contract agency on state owned dams, quality control vs quality assurance

C. Site Layout and Safety

- i. Review and observe activity before entering the site.
- ii. Types of activities at a dam construction site – i.e. clearing foundation preparation, grouting, earthfill placement, concrete placement, excavations
- iii. Different areas of a construction site- ie access roads, borrow, spoil, job trailers, lay down, construction
- iv. Layout of work items – horizontal and vertical references
- v. Water control/diversion

D. Equipment

- i. Types of equipment for each area of construction.

- ii. Identifying and reporting equipment, equipment specs.
- iii. Verifying use of specified equipment, correct use of equipment

2. Earthfill/Zoned Embankment/Rockfill

- A. Clearing and grubbing – Depth, observations, dealing with disturbance and over-excavation
- B. Subsurface Preparation/ dewatering/ mud mat
- C. Placement – Foundation, segregation, compaction passes and coverage, compaction near structures, dealing with slopes, trenches, etc
- D. Sheetpile
- E. Testing and measurement
 - i. Test fills/pads
 - ii. Lift thickness
 - iii. Density – nuclear gauge, sand cone, balloon, etc Calibration
 - iv. Gradation and classification
 - v. Moisture content
 - vi. Index Tests
- F. Drains – Chimney, Blanket, trench
 - i. Preparation- trench size, proof rolling, foundation/contact condition
 - ii. Materials -Per spec., consistency, proper mixing, moisture, grab samples and gradation testing
 - iii. Placement – Lift thickness, compaction equipment, passes, relative density, hydraulic placement, contamination, coverage.
 - iv. Diaphragms – Trenching under conduits, size, cleanliness, contact with structures
 - v. Drain pipe – types, confirmation of specifications, placement and installation
- G. Observations
 - i. Change in color and/or consistency
 - ii. Organics
 - iii. Maximum particle size
 - iv. Pumping, reactions to rolling
 - v. Frozen foundation and materials
 - vi. Changes in moisture
 - vii. Simple tricks from experience

3. Concrete

- A. Testing
 - i. Temperature
 - ii. Slump
- B. Placement
 - i. Acceptable drop
 - ii. Time to place
 - iii. Proper vibration technique
- C. Acceptable formwork, problems with “stay-form” and other shortcuts
- D. Reinforced Concrete
 - i. Rebar -Correct size and strength (how to read), condition (acceptable rust), ties, clearance (how to measure), lap length, alignment
 - ii. Formwork – Secure, alignment, ties, cleanliness, proper chamfers, keys, and bulkheads
 - iii. Foundation preparation – bedrock preparation, cleanliness, dental concrete

- iv. Protection and treatment of drains, weepholes, and other features.
- v. Concrete pour – see above
- vi. Finishing – Per spec, degree and location of honeycombing, areas parged, tie hole grouting, etc
- vii. Curing – Careful application of specification, proper coverage of burlap or membrane, wetting system, protection of formworks with cold and hot weather, sufficient time.
- viii. Performance – Types of cracks and their significance, location reporting, description of the cracks.

E. Waterstops

- i. Materials – Confirm specified waterstop by size, configuration (bulb size and location, ribs, thickness), material type, stockpile
- ii. Equipment – Proper welding equipment on site, tear strength equipment, proper ties.
- iii. Welding - Confirm welding technique
- iv. Placement – Confirms to plans, alignment, clearance to rebars and forms, continuity, cleanliness, properly secured, proper fasteners if used, joint treatment

F. RCC

- i. Mixing – Observation of mixing technique and mix testing
- ii. Confirmation of mix, travel, and placement times per spec.
- iii. Placement and spreading technique – Coverage, depth, segregation, contamination
- iv. Rolling – Equipment, passes, coverage, side treatment
- v. Other – Time between lifts per spec, bedding mix, forming joints, temperature

4. **Timber and other unusual types** Inspection of materials

- A. Dimensions, grade, coating
- B. Fasteners
- C. Post and Truss Installation

5. **Other types of construction**

- A. Conduits, valves, gates, Siphons
 - i. Materials – Type, size, thickness, manufacturer
 - ii. Features – Perforation size, location, quantity, joint type
 - iii. Placement – Alignment, use of chairs, joint separation, cleanliness, damages
 - iv. Bedding/cradle – Depth and dimensions per spec, foundation preparation, backfill placement and compaction
- B. Other materials
 - i. Articulated concrete system
 - a) Foundation preparation
 - b) Manufacturer specs. on placement, acceptable tolerances, etc.
 - c) Connection types
 - ii. Topsoil and seed
 - iii. Erosion control mat
 - iii. Geosynthetics and membranes
 - a) Types – Geomembrane, geogrid, non-woven geotextile, woven-geotextile, geocomposites, etc.
 - iv. Grouting
 - v. Soil Mix Trenching

6. **Reporting**

- A. General – Daily logs, notes, narrative, submittals, timeliness
- B. Photographs – Overall, detailed, issues well documented
- C. Reports – Record, where to send, etc