

DAM OWNERSHIP



ASSOCIATION OF STATE
DAM SAFETY OFFICIALS

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PROCURING THE SERVICES
OF A PROFESSIONAL ENGINEER



DAM MAINTENANCE AND OWNER RESPONSIBILITY

Dam owners receive important benefits from the reservoir

impounded by the dam.

The responsibility owners hold for understanding the laws and regulations

associated with proper dam

maintenance, and the

procedures for keeping

these structures safe, is

significant. This under-

standing could determine

whether an owner will reap

the benefits associated with

responsible dam ownership

or pay the costs resulting

from improper dam

maintenance. ➤ One of

the most important

procedures for ensuring

proper maintenance of the

dam is procuring the

services of a professional

engineer. This brochure is

designed to answer the

most commonly asked

questions about hiring an

engineer.

WHY DO I NEED AN ENGINEER?

➤ All dams meeting

government regulatory

definitions—no matter

what their size or level of

engineering—will deteriorate with time. Periodic

inspection, proper main-

tenance, and occasional

repair and rehabilitation

are inevitable. An owner

needs the expertise of an

engineer to perform

inspections or evaluate and

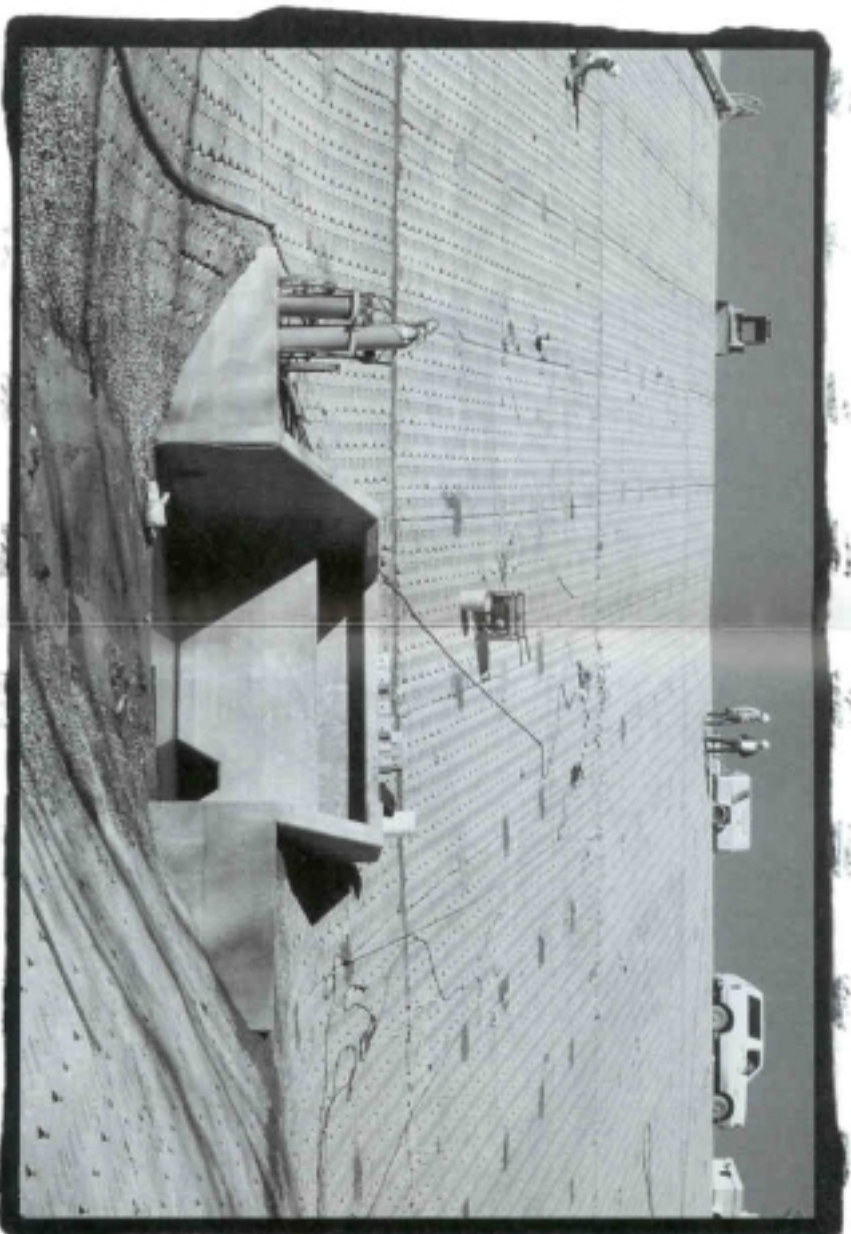
undertake corrective

measures at a dam. ➤ An

engineer can investigate

the problem and recom-

mend a course of action



which may include the design of corrective measures

and the preparation of

construction plans and

specifications. The engineer

also can assist in selecting a

contractor and will provide

valuable construction

inspection services.

WHAT TYPE OF ENGINEER SHOULD I HIRE?

➤ It is essential to select

someone with a professional

engineer (P.E.) certification,

with a background in civil

engineering, who is

competent in the field of

dam safety. Important

criteria to look for in a

prospective engineer

include the following:

• A licensed professional

engineer;

• A minimum of 10 years

experience in dam

design and construction;

• A knowledge of the

rules and regulations gov-

erning dam design and

construction in the state

where the dam is located;

• Specific experience in

the problem area—e.g.,

hydrology; hydraulics,

structural or geotechnical

engineering. ➤ ➤ ➤

SELECTION STRATEGIES

HOW DO I CHOOSE AN ENGINEER WHO IS BEST FOR MY NEEDS?

► There are three basic strategies for selecting engineering consulting services. These selection strategies are:

- Qualification-Based
- Fee-Based
- Intermediate

QUALIFICATION-BASED

► Qualification-Based selection means that the knowledge, experience, and ingenuity of the engineer are the determining factors in making the selection. This strategy is advantageous when the owner is uncertain about the exact problem or the best solution to the problem.

► When Qualification-Based selection is used, several engineering firms submit their technical qualifications, experience with similar projects, reputation

with existing clients, and any other factors pertaining to the specific project. The owner then selects the three most qualified firms to make brief presentations outlining a cost-effective and innovative approach to the problem. Based upon these presentations, the owner chooses the most qualified engineer to develop a scope of work.

► When agreement on the scope of work is achieved, the engineer and the owner negotiate a price that is fair and reasonable to both parties. If an agreement cannot be reached, negotiations start with the second-ranked engineer. In this selection process, price is the main factor, but only after the most qualified engineer has been identified.

FEE-BASED

► Fee-Based selection



means that the engineer's fee is the only determining factor in making the selection. It is advantageous when the owner knows exactly what is needed and can clearly define the scope of work before meeting with an engineer. In this case, the engineer is requested to prepare the designs and bid documents or conduct investigations as the owner specifies. This usually means getting a job done using "cookbook" solutions—with little room for innovation. ► A strict Fee-Based selection often

means that the engineer selected may not be qualified to do the work, especially if the bidding is open to anyone and/or the scope of work is poorly defined.

INTERMEDIATE

► The Intermediate option is a cross between the Qualification-Based selection and Fee-Based selection processes. The Intermediate option requires that the owner pre-qualify engineers that are asked to submit a fee-based proposal. This process ensures a higher certainty that the work will be of superior quality, but requires the owner to clearly define the scope of work. Without a clearly defined scope of work, the owner could receive a wide range of fee proposals, depending on the consulting engineer's interpretation of the project.

FOR CONSIDERATION

► Request references from the engineer. Contact the references to discuss the engineer's performance. Look at projects that have been completed under the engineer's leadership. Request to review state files of projects an engineer has undertaken to see if the process went smoothly.

► Maintain an open line of communication with regulatory agencies, particularly your State Dam Safety Program. Discuss an engineer's recommended course of action to verify that regulatory requirements will be satisfied.

► Educate yourself in the basics of dam safety and be knowledgeable regarding the laws you must meet.

► Carefully consider your selection of an engineer. A little work on your part in selecting the engineer

may save you money in the future. ► For information on state dam safety statutes and administrative rules, contact:

- State Dam Safety Office
- ASDSO
- State Attorney General

REFERENCE MATERIALS

Consulting Engineering: Guide for the Engagement of Engineering Services, American Society of Civil Engineers Manual and Reports on Engineering Practice, No. 45., 1988

Qualification-Based Selection, American Consulting Engineer's Council, 1994

Dam Safety: An Owner's Guidance Manual, FEMA 145, August 1987

Training Aids for Dam Safety: Dam Safety Awareness, Interagency Committee on Dam Safety/U.S. Bureau of Reclamation, 1994