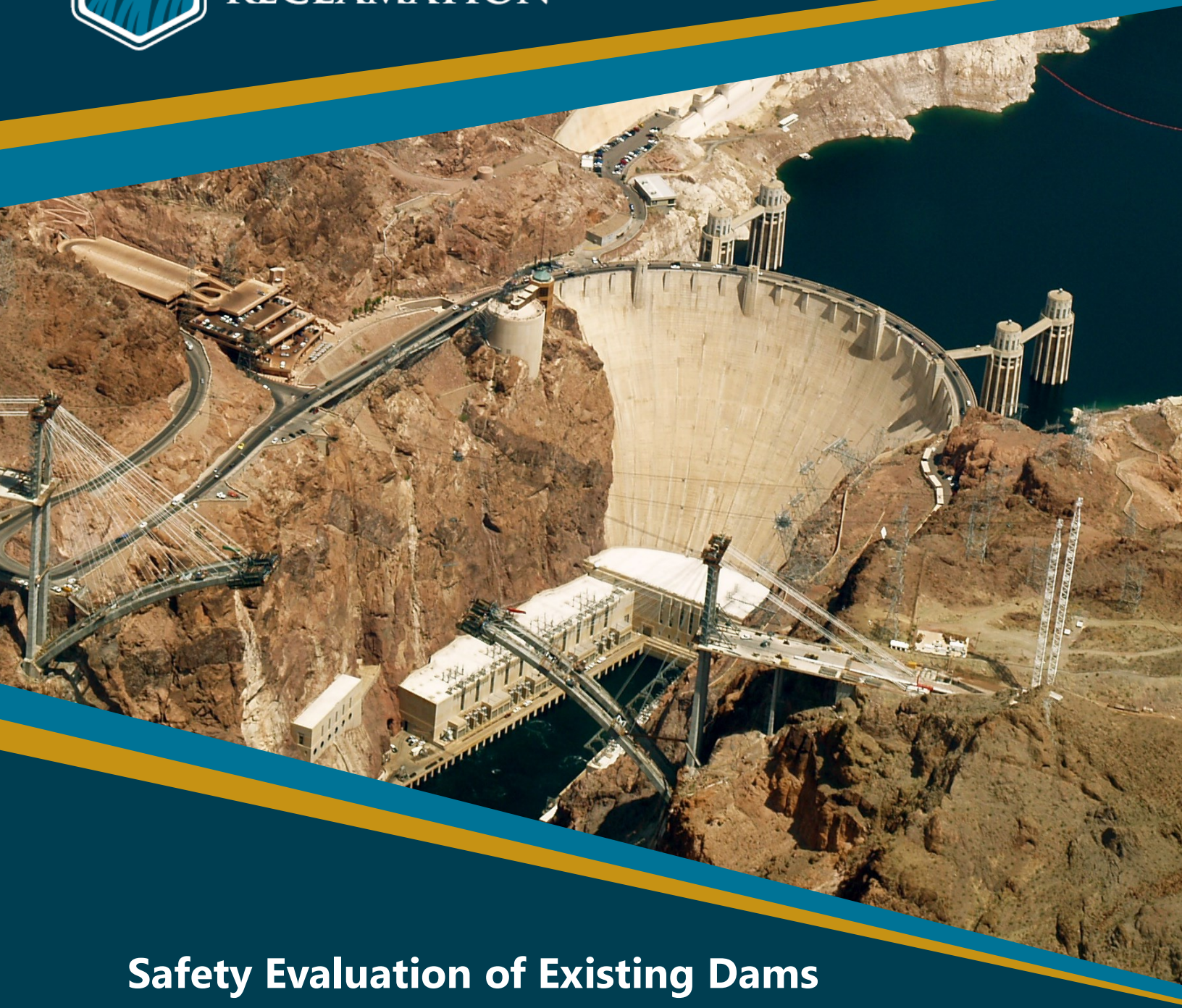
BUREAU OF RECLAMATION



Safety Evaluation of Existing Dams International Technical Seminar and Study Tour

August 12-22 2024

U.S. Department of the Interior

Introduction/Seminar Objectives

In most countries throughout the world, interest in the safety of dams has risen significantly in recent years. Aging dams, new hydrologic information, and population growth in floodplain areas downstream from dams has resulted in an increased emphasis on dam safety evaluation as well as operation and maintenance related to the safety of dams. Those responsible for the safety of existing dams must implement policies and procedures that warrant public confidence. This demands professional practices that incorporate the lessons of the past and conform to the most advanced technical state-of-the-art. The need for trained personnel is essential. This seminar will provide professional personnel with a comprehensive guide to establishing or enhancing a visual inspection/evaluation program and increase the technical capabilities of those responsible for safety evaluations.

Bureau of Reclamation officials will provide training for the seminar. Reclamation is responsible for the proper operation, maintenance, and structural safety of more than 400 dams and distribution systems. Reclamation has conducted similar seminars for its own staff, as well as for more than 6,000 technical and administrative officials from other domestic and international agencies.

Who Should Attend?

The seminar is designed for managers, administrators, engineers, and geologists responsible for the design, construction, operation, maintenance, and safety of dams. Policymakers and planners, as well as those with technical responsibilities, may also benefit from the seminar. All presentations, discussions, and printed materials will be in the English language. **Participants should have a good command of general and technical English usage.**

Due to the technical nature of the program and limited space on the motorcoach, spouses are not encouraged to accompany participants during the study tour. Space will be given to participants first.

Study Tour Agenda

August 17 – City Highlights Tour of Denver
August 18 – Travel day: Denver to Fraser, CO
August 19 - Site visits to Granby Dam and Shadow Mountain Dam
August 20 - Tour of Rocky Mountain National Park and mock exam at Olympus Dam
August 21 - Travel day: Denver to Las Vegas (airline ticket included in registration fee)
August 22 - Hoover Dam and Close-out Luncheon

Seminar Topics

The first portion of the seminar, August 12-16, will consist primarily of classroom presentations and discussions. Lectures, case histories, and structured discussions covering all aspects of a dam safety examination program will be led by Reclamation engineers or geologists with extensive experience and knowledge in the areas of design, construction, operation, maintenance, and dam safety. The course outlines the hydrologic, seismic, geotechnical, electrical, mechanical, and structural considerations of dam safety, as well as operation, maintenance, surveillance, and emergency preparedness. Presentations, case histories, and a walk-through abbreviated examination are used to present the multidiscipline approach to an effective safety of dams program. Atour of the Bureau of Reclamation Research Laboratories will also be featured.

Participant Presentations

During the first week of the seminar, participants will have the opportunity to give a 10-15-minute presentation on dam safety activities within their organization or country.

Please note on the registration form if you are interested in giving a presentation.

Study Tour and Simulated Exam

The post-session study tour, August 17-22, will take participants through the states of Colorado and Nevada. The study tour will begin with a tour of cultural and historical highlights of Denver, Colorado. The technical study tour begins Monday, August 19, with site visits to Granby Dam and Shadow Mountain Dam. On August 20, Reclamation staff will lead participants in a mock abbreviated simulated examination at Olympus Dam. All three dams are located in the Missouri Basin Region, Reclamation's largest and most ecologically diverse region, encompassing all or parts of nine western states and extending from the Canadian border to the southern tip of Texas. Participants will also enjoy a tour of Rocky Mountain National Park and an overnight stay at the Historic Stanley Hotel, located in Estes Park, Colorado. On Wednesday, August 21, participants will travel by air to Las Vegas, Nevada. The study tour will conclude on August 22 with a tour of Hoover Dam and close-out luncheon.

Location and Venue

The technical session will take place in Denver, Colorado, at the Denver Marriott West. Denver is the capital of Colorado and one of the fastest growing cities in the United States. Denver is nicknamed the Mile-High City because its official elevation is exactly one mile (5280 feet or 1609 meters) above sea level, making it the highest major city in the U.S.

Arrival and Departure Information

International travel should be arranged into Denver, Colorado, no later than Sunday, August 11, 2024.

Return travel should be arranged out of Las Vegas, Nevada, no earlier than Friday, August 22, 2024.

Hotel Accommodations

Hotel accommodations in Denver, Colorado, August 11-17 (check out August 18), must be paid for by the participant. A block of rooms has been reserved at the Denver Marriott West at a special rate of US $211.00 per night, including tax. The special rate is available until June 28. Please use the following link to make your reservation:

International Dam Safety Seminar - Denver Marriott West

You may also call +1.888.238.1803 and reference International Dam Safety Seminar at the Denver Marriott West to make reservations.

Letters of Invitation / U.S. Visa

If you require a visa to enter the United States, it is strongly recommended to apply as soon as possible to allow adequate time for visa processing. Reclamation will only send invitation letters to those registered for the seminar.

Dietary Needs

Please provide dietary restrictions /needs on the registration form.

Medical Insurance

Accidental injury/medical emergency insurance is strongly recommended and should be purchased prior to traveling to the United States. Reclamation is not financially responsible for any illnesses or injuries that may be incurred by participants.

Climate and Clothing

Participants should expect warm weather. Business casual attire is recommended during the technical session. Long pants and sturdy closed-toed shoes are required during the study tour.

Registration Fee

The registration fee is US $4100 per person and includes:

- Technical Sessions
- Course materials (electronic versions only)
- Hotel accommodations during the Study Tour, August 18-22 (check out Aug 23: 5 nights)
- Breakfasts
- Welcome Reception/Dinner, August 13
- Lunches (except August 17, 18, 21)
- Dinner August 15
- Transportation for organized group events and Study Tour
- Oneway airline ticket during study tour (Denver-Las Vegas)

Participants are responsible for:

- Transportation from Denver International Airport to the Denver Marriott West Hotel
- Hotel accommodations at the Denver Marriott West Hotel, August 11-17 (check out August 18)
- Lunches August 17, 18, 21)
- Dinners (except for August 15)

The registration deadline is **June 28, 2024**. Due to contractual arrangements with hotels and airlines, no late registrations will be accepted.

A legible copy of your passport must be submitted with the registration form.

Payment

The preferred method of payment is a credit card. Wire transfer and checks are accepted. Checks should be in U.S. dollars and made payable to the Bureau of Reclamation.

Funding is not available from the seminar organizers.

Further Information

Contact the Bureau of Reclamation's International Affairs Office:

E-mail inquiries to should be sent to:

bor-sha-internationalaffairs@usbr.gov

Phone: 1-303-445-2139

Information contained in this announcement can also be located at: **https://www.usbr.gov/international/**

Study Tour

The Colorado-Big Thompson Project is a complex system that diverts water from the Colorado River on Colorado's western slope to cities and farms along the Front Range and eastern plains. The collection system on the west slope collects and stores water which is transported to the east slope through the 21 kilometer-long (13-mile long) Alva B. Adams tunnel which passes under the Continental Divide and Rocky Mountain National Park. On the east slope, the water is stored and distributed to 11 communities and more than 2,800 km^2 (1,100 square miles) of farmland along Colorado's Front Range. The Colorado-Big Thompson Project consists of 14 storage dams and reservoirs, 7 diversion dams, almost 260 km (100 miles) of canals, 3 pumping plants, 6 powerplants, and more than 65 km (25 miles) of tunnels. The 2024 SEED Study Tour will begin with several sites relevant to the Colorado-Big Thompson Project: Granby Dam, Shadow Mountain Dam, Rocky Mountain National Park, and Olympus Dam.

Granby Dam, Spillway and Tunnel Outlet Works are located in a steep, narrow canyon about 150 km (93 miles) northwest of Denver. Constructed between 1941 and 1950, this compacted earthfill dam has a structural height of 91 meters (298 feet), a crest length of 262 meters (861 feet), 3,877 meters (12,722 feet) of auxiliary dikes, and a drainage area of 810 km^2 (311 square miles). The dam's reservoir, Lake Granby, has a capacity of 666 million cubic meters (539,800 acre-feet). Granby Dam is part of the Colorado-Big Thompson Project and collects and stores most of the project water supply, including the flow of the Colorado River and water pumped from Willow Creek. Water from Lake Granby is diverted under the Continental Divide and Rocky Mountain National Park for agriculture and municipal use within north-eastern Colorado.

Shadow Mountain Dam is an earthfill dam on the Colorado River about 14 km (9 miles) north of Granby Dam. Constructed between 1944 and 1946, Shadow Mountain Dam has a structural height of 19 m (63 feet) and a drainage area of 480 km^2 (187 square miles). The dam creates the Shadow Mountain Lake, which is connected to Grand Lake – Colorado's largest and deepest natural lake. From Shadow Mountain Lake and Grand Lake, diversions flow to the Alva B. Adams Tunnel which carries water under Rocky Mountain National Park to the east slope of the Rocky Mountains for use in agriculture and to serve the populated areas of northeastern Colorado, including Denver.

Rocky Mountain National Park in northern Colorado encompasses 1,075 km^2 (415 square miles) of protected land containing a range of mountain environments including forest, alpine tundra, alpine lakes, and towering mountain peaks. The park spans the Continental Divide and is known for Trail Ridge Road, Old Fall River Road, and over 480 km (300 miles) of hiking trails that provide views of aspen trees, rivers, and diverse wildlife. The Keyhole Route, a climb crossing vertical rock faces, leads up Longs Peak, the park's tallest mountain at 4,346 m (14,259 feet).

Olympus Dam is part of the Colorado-Big Thompson Project located in the town of Estes Park, Colorado, on the east slope of the Rocky Mountains. Olympus Dam consists of a concrete gravity section and an embankment section. The dam was constructed between 1947 and 1949, has a structural height of 21 meters (70 feet), a crest length of 98 meters (320 feet), a crest width of 3 meters (10 feet) and a base width of 15 meters (49.5 feet). Olympus Dam impounds the Big Thompson River to form Lake Estes, which can hold 3.8 million cubic meters (3,100 acre-feet) of water. The dam diverts water to Olympus Tunnel & controls release to the Big Thompson River.

Hoover Dam and Lake Mead, spanning the Arizona-Nevada border, are located in the Black Canyon of the Colorado River, about 56 kilometers (35 miles) southeast of Las Vegas, Nevada. It is a concrete thick-arch structure, 221 meters high (726.4 feet) and 379 meters long (1,244 feet). The dam contains 2.48 million cubic meters (3.25 million cubic yards) of concrete; total concrete in the dam and appurtenant works is 3.36 million cubic meters (4.4 million cubic yards).

Built during the Great Depression, thousands of men and their families came to Black Canyon to tame the Colorado River. It took less than five years, in a harsh and barren land, to build the largest dam of its time. Now, years later, Hoover Dam still stands as a world-renowned structure. The Dam is a National Historic Landmark and has been rated by the American Society of Civil Engineers as one of America's Seven Modern Civil Engineering Wonders.