

Safety Evaluation of Existing Dams International Technical Seminar and Study Tour June 6-14, 2016

Denver, Colorado, and Seattle, Washington

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 the 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 5,000 technical and administrative officials from other domestic and international agencies.

Seminar Topics

The first portion of the seminar, will take place in Denver, Colorado, and will consist primarily of classroom presentations and discussions. A tour of the Bureau of Reclamation Research Laboratories will also be featured. Lectures, case histories, and structured discussions covering all aspects of a dam safety examination program are 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.

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.

Study Tour

The post session study tour from June 10-14, 2016, will take participants to the Pacific Northwest Region of the United States. Participants will fly into Seattle, Washington, June 10, 2016, and enjoy free time to explore the beautiful international city of Seattle. On June 12, 2016, participants will travel by motorcoach and overnight in Ellensburg, Washington. Site visits on June 13 and 14 will include Cle Elum Dam, Easton Diversion Dam and Kachess Dam, all part of the Reclamation's Yakima Project. There will also be a visit to Snoqualime Falls, one of Washington State's most popular scenic attractions. The study tour will conclude with a close out dinner on June 14th in Seattle, Washington.

Seattle Washington: With an area population of more than 3.2 million people, Seattle is the major economic, cultural and educational center of the Pacific Northwest. A major Pacific Ocean seaport, Seattle is situated on an isthmus between Puget Sound and Lake Washington about 180 kilometers south of the U.S. – Canadian border.





Cle Elum Dam: Cle Elum Dam, on the Cle Elum River 10 miles (16 kilometers) northwest of Cle Elum, is an earthfill dam constructed at the end of a natural lake that forms a reservoir with an active capacity of 436,900 acre-feet (540 million cubic meters). The dam is 165 feet (50.3 meters) high and, including the dikes, contains 1,411,000 cubic yards (1,078,800 cubic meters) of material. The outlet works of Cle Elum Dam were modified in 1977-1979 under the Bureau of Reclamation's Safety of Dams Program.

Kachess Dam: Kachess Dam is an earthfill structure located on the Kachess River about 2 miles (3.2 kilometers) northwest of Easton. This dam, 115 feet (35 meters) high with a volume of 200,000 cubic yards (152,910 cubic meters), also was built at the lower end of a natural lake, and created a reservoir with an active capacity of 239,000 acre-feet (295 million cubic meters) constructed over a natural lake having unknown dead storage capacity. The discharge channel for Kachess Reservoir is 2,877 feet (877 meters) long and was constructed from the natural lake to the intake structure of the dam's outlet works. This was done so the natural lake could be used for storage. The first 1,182 feet (360 meters) consists of an open cut inlet channel leading to a 9 foot (2.7 meter) diameter tunnel for 1,393 feet (425 meters) and then 302 feet (92 meters) of open channel to the intake structure. Significant siltation had occurred in the discharge channel causing a restriction in passing the necessary water downstream.



Easton Diversion Dam: Easton Diversion Dam located on the Yakima River near Easton, Washington, is a concrete gravity ogee weir, movable crest structure. This dam is 66 feet (20 meters) high and contains 5,800 cubic yards (4434 cubic meters) of concrete. Intensive Federal, State, tribal, and local efforts in conjunction with the Northwest Power Planning Council resulted in Congress authorizing implementation of Phase I of the Yakima River Basin Water Enhancement Project in 1984. The purpose of Phase I is to reduce anadromous fish mortality at outdated fish ladders at diversion dams and inadequate fish screens at diversion canals.

Registration Deadline/Cost

The registration fee is **\$3200** per person and the registration form must be received **before May 17, 2016**. Due to contractual arrangements with hotels and airlines, any registration forms received after the deadline, will incur a registration fee of **\$3500**.

The registration fee includes: 1) Various printed and electronic materials; 2) Most breakfasts and lunches; 3) Airfare during study tour (Denver/Seattle); 4) Motorcoach transportation; and 5) Hotel accommodations during the **Study Tour, June 10-14, 2016**.

Payment

Payment should accompany the registration form. 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.

Hotel Accommodations

Hotel accommodations in Denver, Colorado, during the **Technical Seminar, June 6-9, 2016, must be reserved and paid for by the participant**. A block of rooms have been reserved at the Marriott Springhill Suites, 1190 Auraria Parkway, Denver, Colorado, 80204, at a special rate of \$172 per night plus tax. Please reserve your room early to ensure availability. The special rate is available until **May 17, 2016**. Reservations made after May 17, 2016, will be at the prevailing room rate, subject to availability. Please use the following methods for reservations:

- Phone: 1-888-236-2427 or 1-303-705-7300 using code: **Safety Evaluation of Existing Dams International Technical Seminar**
- Online: <http://cwp.marriott.com/densd/usbureauofreclamation>

Important Travel Notes

- International travel should be arranged into Denver, Colorado, no later than Sunday, June 5, 2016, and out of Seattle, Washington, no earlier than Wednesday, June 15, 2016.
- It is strongly recommended that individuals apply as soon as possible for visas and seek sponsorship, if necessary. Funding is not available from the seminar organizers. Please submit a legible copy of your passport with your registration form.

Climate/Clothing Suggestions/Medical Insurance Participants should expect warm weather. Casual clothing and sturdy closed-toed shoes are required on field tours. 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. Please refer to the following website for reference: <http://www.medexassist.com/Individuals/Products/travmedchoice.aspx>

Further Information Contact the International Affairs - Denver, Bureau of Reclamation, P.O. Box 25007, Denver, Colorado 80225, Phone 1-303-445-2139, fax 1-303-445-6322. E-mail inquiries should be sent to Amedina@usbr.gov or Avigil@usbr.gov. Information contained in this announcement can also be located at <http://www.usbr.gov/international/seminars.html>