

# Agenda

<b>Dam Purposes and Function</b> Purposes of dams Numbers of dams, age and service life Ownership and regulation Codes, standards and regulations	<i>R. Alsberg</i>
<b>Dam Design</b> Types of dams Dam components Embankments, spillway, outlet structures, gates, penstocks, powerhouses Design of dams Hydraulics, geotechnical, structural, environmental considerations Hydroelectric generation (turbines and pump storage)	<i>W. Hansen</i>
<b>Site Design and Permitting</b> Site hydrology Planning and designing for floods Hazard classifications Emergency action plans Licensing and permitting	<i>E. Faulkner L. Brotkowski</i>
<b>Construction Considerations</b> Adding generation to existing dam Adding spillway capacity to meet new standards	<i>R. Alsberg</i>
<b>Maintenance and Repair</b> Operating procedures Scheduled maintenance procedures Repair and replacement (repairs, maintenance, and replacement) Dam removal	<i>R. Grondin</i>
<b>Careers in the Dam Area</b> Engineering (electrical, mechanical, and civil) Hydrology Trades Environmental	<i>B. Mendlin M. Binsfeld</i>

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## Dam Design, Construction, and Maintenance

Live, Interactive Webinar - Thursday, February 29, 2024

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HalfMoon Education Inc.  
PO Box 278  
Altoona, WI 54720-0278



## Learning Objectives

- You'll be able to:**
- Explore** the number of U.S. dams, their ages and expected service lives.
  - Comply** with codes, standards and regulations.
  - Discuss** design considerations for embankments, spillways, and outlet structures.
  - Review** design considerations for hydroelectric generation.
  - Consider** site design and permitting requirements.
  - Establish** maintenance schedules and consider repair and replacement options.



HalfMoon Education Live Webinars  
in conjunction with Midwest Hydro Users Group

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|---|---|
| <b>Explore</b> purposes and functions of dams       | <b>Examine</b> site design and permitting considerations  |
| <b>Comply</b> with codes, standards and regulations | <b>Discuss</b> hazard classifications and emergency plans |
| <b>Discuss</b> design of dam components             | <b>Plan</b> for maintenance, repair and replacement       |

### Continuing Education Credits

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| <b>Professional Engineers</b><br>6.5 PDHs                 | <b>Landscape Architects</b><br>6.5 HSW CE Hours<br>6.5 LA CES PDHs |
| <b>Architects</b><br>6.5 HSW CE Hours<br>6.5 AIA LU   HSW | <b>International Code Council</b><br>.65 CEUs (Building)           |
|   | <b>Floodplain Managers</b><br>6.5 ASFPM CECs                       |



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# Webinar Information

<b>Log into Webinar</b> 8:30 - 9:00 am CST	<b>Break</b> 12:45 am - 1:45 pm CST
<b>Morning Session</b> 9:00 - 12:45 am CST	<b>Afternoon Session</b> 1:45 - 4:30 pm CST

**Tuition**  
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# Credit Information

This webinar is open to the public and is designed to qualify for 6.5 PDHs for professional engineers, 6.5 HSW continuing education hours for licensed architects, and 6.5 HSW continuing education hours for landscape architects in all states that allow this learning method. Please refer to specific state rules to determine eligibility.

HalfMoon Education is an approved continuing education sponsor for engineers in Florida (Provider License No: CEA362), Indiana (License No. CE21700059), Maryland, New Jersey (Approval No. 24GP00000700) and North Carolina (S-0130). HalfMoon Education is deemed an approved continuing education sponsor for New York engineers and architects via its registration with the American Institute of Architects Continuing Education System (Regulations of the Commissioner §68.14(i)(2) and §69.6(i)(2)). Other states do not preapprove continuing education providers or courses.

The American Institute of Architects Continuing Education System has approved this course for 6.5 HSW LUs (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The Landscape Architecture Continuing Education System has approved this course for 6.5 HSW PDHs. Only full participation is reportable to the LA CES.

# Faculty

**Rory Alsberg** began his hydroelectric career in operations management of projects over 20 years ago. Since then, he has been involved with all aspects of dams, including operations, construction, and repairs, regulatory compliance, and development. His experience from both the owner and service provider perspectives is both unique and valuable.

**Whitney Hansen, P.E.** has over 17 years of experience working on dam and hydroelectric projects. She specializes in dam-safety and field inspections, condition assessments of existing facilities, and civil and structural engineering design for hydraulic structures. Over the course of her career, Ms. Hansen has worked on more than 50 dams and hydroelectric projects for over 11 clients. She is a Federal Energy Regulatory Commission approved independent consultant.

**Ellen Faulkner, P.E.,** is a registered professional engineer at Ayres, a multidisciplinary consulting engineering company with offices nationwide. She has more than 30 years of experience in developing and executing studies in watershed hydrology and river hydraulics, with a particular focus on floods and dam safety. Ms. Faulkner has performed hydrologic design studies for dams and hydro projects nationwide and has developed and performed technical analyses in support of hydropower license applications, including instream flow studies and analyses of alternative hydropower operation rules. She has also developed and presented training seminars in watershed and dam break modeling for the Association of State Dam Safety Officials. Some of her areas of expertise are instream flow studies, floodplain analysis, dam safety analysis, and hydro project analysis.

**Lesley Brotkowski** is a senior licensing coordinator with over 20 years of professional natural resource experience. She specializes in FERC hydroelectric licensing and compliance projects. She has worked on hydroelectric projects across the United States and has extensive experience managing FERC hydropower relicensing, decommissioning, and compliance projects in the Midwest. Ms. Brotkowski’s expertise also includes new

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The International Code Council has approved this event for .65 CEUs in the Specialty area of Building (Preferred Provider No. 1232).

The Association of State Floodplain Managers has approved this course for 6.5 CECs for floodplain managers.

Attendance will be monitored, and attendance certificates will be available after the webinar for those who attend the entire course and score a minimum 80% on the quiz that follows the course (multiple attempts allowed).

**On-Demand Credits**  
The preceding credit information only applies to the live presentation. This course in an on-demand format may not be eligible for the same credits as the live presentation; please consult your licensing board(s) to ensure that a structured, asynchronous learning format is appropriate. The following pre-approvals may be available for the on-demand format upon request:  
6.5 HSW LUs (AIA), 6.5 HSW PDHs (LA CES), 6.5 ASFPM CECs

development of pumped storage projects, wetland delineations, wetland and waterway permitting, ecological assessments, National Environmental Policy Act (NEPA) compliance, natural resource restoration and management projects, and endangered species consultation and surveys. She is a certified endangered resource (ER) reviewer in Wisconsin. Ms. Brotkowski works with a diverse clientele including utility companies, commercial and residential developers, state and federal governments, municipalities, private landowners, and conservation organizations. Ms. Brotkowski has an M.S. degree in Conservation Biology and Ecology from the University of Illinois at Urbana-Champaign and a B.S.degree in Biology, *magna cum laude*, from Carroll College in Wisconsin. She recently served as president on the Midwest Hydro User Group (MHUG) Board of Directors and is chair for the MHUG Regulatory & Legislative Committee.

**Ryan Grondin, P.E.** is a graduate of Michigan Technological University with a bachelor’s degree in Civil Engineering. He maintains a professional engineering license in Michigan. Mr. Grondin is the Chief Engineer of Hydro for WEC Energy Group. Mr. Grondin also serves as the chief dam safety engineer under WEC’s Owner’s Dam Safety Program. Mr. Grondin oversees the engineering department, which has primary responsibility for dam safety and capital investments on all WEC projects. WEC, consists of We Energies, Wisconsin Public Service and Wisconsin River Power Company. Together WEC operates 30 hydros on the Menominee, Peshtigo, Fox and Wisconsin River watersheds in Michigan and Wisconsin. WEC holds the most FERC licenses in the FERC Chicago Region. Their projects range from 6 years to 121 years old with an average age of 90 years. They maintain 80 generating units that range from 0.1 MW to 11 MW capacity that generate approximately 960,000 MWHrs a year. In his role at WEC, Mr. Grondin works closely with many members of MHUG including contractors, consultants, the FERC and NHA.

**Chris Rousseau, P.E., F. ASCE.** After beginning his career as an engineering consultant serving both private and municipal clients, Mr. Rousseau joined J.F. Brennan Company with more than a decade of experience with Minnesota Power. He most recently served Minnesota Power as the manager of renewable business operations for hydro and the Hibbard Renewable Energy Center. Mr. Rousseau currently serves on the board of directors of the National Hydropower Association (NHA) as well as the association’s Legislative Affairs and Marine Energy committees. He is a Fellow-grade member of the American Society of Civil Engineers (ASCE), previously serving as a past regional governor and past section president. He currently chairs ASCE’s national-level Infrastructure and Research Policy Committee and has previously served on ASCE’s national Public Policy and State Government Relations Committees. During his career, Mr. Rousseau has been involved in all aspects of the hydro industry including construction and repairs, operation and maintenance, regulatory and compliance, project funding, financing, and government relations.

**Bree Mendlin** is a dynamic leader and dedicated professional, serving as the Program Director at the Hydropower Foundation. With a passion for promoting hydropower careers among post-secondary students pursuing STEM degrees, Ms. Mendlin brings a decade of invaluable experience to her role. Ms. Mendlin’s portfolio extends to program management, where she has taken the lead on groundbreaking initiatives, including the recent Waterpower Club = Waterpower Community = WC2 partnerships program and the STEM workforce development project in collaboration with NREL and the U.S. Department of Energy’s Water Power Technologies Office. Ms. Mendlin coordinates innovative activities that resonate with the next generation of hydropower professionals. This includes managing the ever-expanding Hydro Think Tank student competitions and career fairs and overseeing educational scholarships. Ms. Mendlin holds a bachelor’s degree in communication from the University of Colorado at Denver.

**Mark Binsfeld** is the vice president of Business Development at J.F. Brennan Company (Brennan), headquartered in La Crosse, WI. Brennan is a marine contracting company that provides above and below-water construction, transportation, and remediation services throughout the inland and coastal waterways of the United States. With several locations across the country, Brennan employs over 600 people, of which over 100 are certified commercial divers. Mr. Binsfeld is part of the 4th generation of ownership at Brennan, which recently celebrated its 100th year in business. He has a Mechanical Engineering degree from the University of Colorado at Boulder and a master’s in business administration from Boston College.