

USSD HYDRAULICS AND HYDROLOGY COMMITTEE CHARTER

August 2021

COMMITTEE DESCRIPTION

The USSD Hydraulics and Hydrology Committee supports and promotes advancement of the technical practices of hydrology and hydraulics as they relate to the evaluation of dams, spillways, and appurtenant structures. This includes (1) flood analyses including design hydrology and flood flow frequency estimation; (2) hydraulic design of spillways, outlet works, and other hydraulic structures related to multi-purpose project operation, (3) analyses of floods resulting from dam failures and assessment of potential downstream consequences; (4) hydraulic and hydrologic aspects of operation and maintenance; and (5) reservoir sedimentation and sustainability.

To assist in carrying out its work, the Hydraulics and Hydrology Committee has established subcommittees. As of 2020, the committee has the following four active subcommittees: 1) Sedimentation Subcommittee, 2) Spillways Subcommittee, 3) Hydrology Subcommittee, and 4) Gates and Valves Subcommittee.

The Committee membership includes professionals from government or private organizations that own and operate dams, government organizations that regulate dams, consulting engineers that provide engineering services to dam owners, and members of academia involved in research related to hydraulics and hydrology. The Committee discusses technical issues, develops guidelines and publications, presents workshops, and generally promotes the advancement of state-of-the-practice for hydrologic and hydraulic analysis related to dams through the diverse backgrounds, experiences, and perspectives of the Committee membership.

TERMS OF REFERENCE

The Committee on Hydraulics of Dams was established by the USSD Board of Directors in 1976. The original purpose for its formation was to create a standing technical committee responsible for review of material generated by ICOLD and other National Committees related to hydraulics of dams. The committee was also to participate in the dissemination of technical material related to hydraulics of dams. This purpose has since been expanded to include hydrologic and sedimentation as well as hydraulic considerations. In 2018, the Committee was renamed to the “Hydraulics and Hydrology Committee” to better reflect the broader focus of the Committee.

The Committee works to support the mission and activities of USSD, including assisting in development of Annual Conference content (encouraging abstracts, reviewing abstracts and papers, and moderating sessions) developing and/or sponsoring workshops presented as part of the conference or as standalone events, and encouraging papers for publication in “Dams and Levees, Bulletin of the United States Society on Dams”. The Committee also helps USSD keep the general membership informed of current issues in its areas of responsibility through

publication of reports and white papers, announcements in the Bulletin, and input to the Committee's section of the USSD website. The Committee also supports several committees of the International Commission on Large Dams (ICOLD), including, but not limited to: Hydraulics for Dams (C, 2019-2022), Sedimentation of Reservoirs (J, 2017-2021), Flood Evaluation and Dam Safety (S, 2015-2022), Dams and River Basin Management (U, 2018-2021), and Hydromechanical Equipment (V, 2016-2022). Several members of the Hydraulics and Hydrology Committee serve as the United States delegate to these ICOLD committees. The Committee also collaborates with and/or assists other committees in developing and promoting education and training activities to support the current USSD Strategic Plan.

RESPONSIBILITIES

- A. Assist the officers and the Board of Directors of USSD in addressing issues and topics related to hydraulics and hydrology of dams.
- B. Coordinate Committee activities with other USSD and ICOLD committees, and the broader hydraulic and hydrologic engineering community.
- C. Review and prepare comments on technical bulletins, reports, and papers related to hydraulics and hydrology of dams.
- D. Prepare and disseminate technical bulletins, reports, and other documents on current topics of interest related to hydraulics and hydrology of dams. Develop workshops or webinars/seminars to spread this information.

COMMITTEE LEADERSHIP

Chair: Gregory (Greg) S. Paxson, PE, D.WRE

Vice Chair: Keil J. Neff, PE, PhD

Vice Chair Miles Yaw, PE (Young Professional)

Gates and Valves Subcommittee Chair: Kevin Gerst, PE, SE

Hydrology Subcommittee Chair: Jennifer Gagnon, PE

Sedimentation Subcommittee Chair: Marty Teal, PE, PH, D.WRE

Spillways Subcommittee Chair: Brian Crookston, PE, PhD

GOALS AND OBJECTIVES

Generally, the Committee aligns with the USSD Strategic Initiatives as follows:

Advocate:

1. Provide technical information to support Advocacy Goals

2. Communicate with committee members
3. Relevant outreach information/activities

Educate:

1. Publish technical papers and presentation
2. Develop and implement conferences and workshops
3. Provide on-line resources

Collaborate:

1. Collaboration within USSD
2. Strategically collaborate with targeted US organizations
3. Strategically collaborate with targeted international organizations

Cultivate:

1. Improve committee operations

More specifically, the Committee recently identified the following specific activities and potential projects to continue to advance over the next three years:

- Assist with Annual Conference Planning, including encouraging submissions from the Committee
- Support the Training and Education Committee through webinar, workshop, and other training ideas and support through review of workshop/webinar proposals related to H&H.
- Develop Hydrology Committee (finalize Charter)
- Restart Gates and Valves Subcommittee, including addition of new members.
- Publish white papers. Identified topics include Computational Fluid Dynamics, Spillway Capacity Upgrades, and Rock Scour
- Organize and Present Workshops. Identified topics included Probabilistic Flood Hazard Analysis (scheduled October 2021) and Spillway Life Cycle Management
- Present webinars: Sustainable Reservoir Sediment Management (November 2021); Possible: CFD