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Overtopping has accounted for approximately one-third of the dam failures in the U.S. over the past 75 years. The design and construction of various types of overtopping protection for dams is increasingly being viewed as a sound alternative to more conventional modifications to pass regulatory design floods. Alternatives for overtopping protection include the use of roller-compacted concrete, cast-in-place concrete, precast concrete blocks, gabions, vegetative cover, reinforced rockfill, riprap, turf reinforcement mats, and various other geosynthetic materials. Significant research and hydraulic testing has been conducted on many of these materials, with new materials and analysis methods being developed. These alternatives are described in FEMA P-1015, Technical Manual: Overtopping Protection for Dams (2014). In selecting the overtopping protection alternative for an existing dam, the designer must evaluate the potential risk of failure of the protection system.

The 2nd International Seminar on Dam Protection against Overtopping, or Protections 2016, was held on September 7-9, 2016 at Colorado State University (CSU), with the support of ASDSO. The seminar was attended by 48 engineers from 6 different countries in North America and Europe, and covered a wide range of topics related to physical and numerical modeling of embankment dam overtopping performance, case studies of prototype performance under extreme flood events, and the development of innovative overtopping protection systems. Discussions also included the identification of potential failure modes and the use of risk to inform decisions related to overtopping protection. The technical program concluded with a discussion of the special characteristics of tailings dams and levees with respect to overtopping. The final day included a tour of the CSU Hydraulics Laboratory, and a visit to two local embankment dams with RCC overtopping protection. This paper summarizes the highlights of the three keynote presentations and 26 technical papers delivered at CSU, with a brief look back at Protections 2014 held in Madrid, Spain, and future plans for Protections 2018, to be held in the United Kingdom.