

How Will the Emergence of Risk-Informed Design Affect Design Practice, Standards, and the Regulatory Framework? A Panel Discussion with Q&A (presentation only)

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Risk assessment and risk-informed decision making (RIDM) can be used to drive the decision process for prioritization of which dams to focus on and for whether to take action to reduce risk. These practices are in use by Federal agencies and a growing number of states to evaluate existing infrastructure. Outside of Federal dam safety programs, most practitioners and regulators do not have extensive experience with risk assessment and RIDM, though many are in the process of becoming familiar with these practices. Following risk assessment and RIDM, the next advancement in risk methodology will be risk-informed design. Risk assessment and RIDM have been used thus far to evaluate existing infrastructure and drive risk reduction actions. However, risk-informed design will use risk assessment and RIDM to drive design decisions, to shape the process of how infrastructure will be created. Risk-informed design can involve using risk to confirm design sufficiency or strengthen designs developed using traditional design methods and standards. Risk-informed design also might involve using risk methodology to optimize designs (from a risk perspective) by designing something less robust than what is indicated by traditional design methods and standards. In 2019, USACE issued policy (ECB 2019-15) requiring the use of risk-informed design, stating “A risk-informed design approach does not replace the need for traditional deterministic analysis and criteria (e.g., factors of safety), but rather informs where designs must be up-scaled (e.g. use a factor of safety higher than the minimum) or downscaled (e.g. use a factor of safety lower than the minimum).” This is largely new territory for the dams industry and state regulators. How rapidly will states adopt the Federal approach? How will this approach be reconciled with existing regulations and standards-based requirements? How will regulators ready themselves to apply and oversee this new methodology? How will owners and their consultants ready themselves to apply and make decisions using this new methodology? These questions and more will be addressed in this panel discussion. Panel discussion moderator: Derek Morley Proposed panel members (or similar): Doug Boyer (FERC, Risk-Informed Decision Making Branch), Phoebe Purcell (USACE, Chief of Dam and Levee Safety), Sharon Tapia (CA DSOD, DSOD Division Chief), ? (state?, Chief of Dam Safety), John France (independent consultant), John Bachner (independent consultant)