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A Regulatory Perspective on Implementing Risk-Informed Decision Making in Dam Safety

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EXTENDED ABSTRACT

Risk, if used properly, can be a very powerful tool to aid in understanding in more detail the critical aspects of a dam's design, construction, analysis, and performance, and the potential consequences of a dam failure. The correct approach to risk analysis can improve the prioritization of dam safety actions to focus limited resources on what is important, direct risk reduction evaluations to those measures that are more effective, and better inform routine dam safety activities, such as dam safety inspections, surveillance and monitoring, emergency action plans, and others.

The Federal Energy Regulatory Commission (FERC) is currently developing risk-informed decision making (RIDM) concepts to integrate risk into our dam safety program. This concept was initiated in 2009 and was a specifically identified objective in the 2010 FERC Strategic Plan. This strategy continues to be included in FERC's most recent (2014) strategic plan. Risk methodologies and experiences have matured to the point where, as a dam safety regulator, FERC is able to apply these concepts in a regulatory environment.

A number of other federal agencies have developed and are actively using risk-informed approaches in their dam safety programs, including the Bureau of Reclamation and US Army Corps of Engineers. For the most part, these dam owning agencies use in-house resources to perform risk analyses, risk assessments, and risk management. FERC's role is as a regulator and not an owner; therefore, the approach and execution of risk, among other things, will be different than other federal agencies.

Many challenges exist to integrating RIDM into the FERC dam safety program, including development of risk guidelines; training of risk policies, procedures, and methodologies; and communication. Risk pilot studies will be used to help evaluate the RIDM policies and processes, including identifying potential shortcomings in the interim guidelines and obtaining input from licensees and consultants on the overall RIDM processes and methodologies.

Keywords: Risk, Dam Safety, RIDM, FERC
