

Frank Blackett

Small dam owners rightfully question whether a commonly accepted dam safety practice equally applies to their project. Sometimes they do and sometimes they do not. A Potential Failure Mode Analysis (PFMA) is one of those concepts that is familiar and widely accepted process within the larger dam safety community, but not always well understood among the smaller owners. Although the concepts are generally well understood among many, its use and application is highly variable across different agencies, owners, and consultants. Large government dam owners who routinely perform robust quantitative dam safety risk analyses clearly understand how to develop a detailed Potential Failure Mode (PFM). Other dam owners sometimes struggle with the usefulness of a PFMA and understanding all of the intricacies associated with developing a detailed PFM that will provide the best insight into the design, performance, and behavior of their dam, and how to apply PFMs to their dam safety program. Conducting a PFMA and developing PFMs is the foundation for providing input to strategic dam safety management activities and actions for inspection programs, surveillance and monitoring activities, emergency action planning, site investigations, engineering studies, risk management, and others, regardless of the size of the dam. Poorly developed, unclear, or confusing, and missing potential failure modes can result in focusing dam safety activities in lower priority areas and/or missing critical dam safety concerns altogether.

This paper is intended for any size of dam to provide some insights from lessons learned in conducting and participating in PFMA sessions and reviewing PFMA reports. This paper also addresses some commonly asked questions such as, “how many PFMs do I need for my project, why do I need to separate out all my PFM descriptions, and how do I manage all these PFMs?”

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