

INTRODUCTION

This report examines a number of dam failures and the lessons that can be learned from them. Many comprehensive lists containing hundreds of dam failures have been compiled, including those by ICOLD (1973), USCOLD (1975), USCOLD (1988), and ASDSO (2010). These summaries provide valuable statistics, a comparison of the wide variety of failures that have occurred, and useful data on the trends of dam building and breaking. Others, such as Jansen (1980), have reported in great detail on many historic dam failures. Their in-depth perspectives help the engineering community gain an understanding of the specific circumstances that led to each failure.

In contrast, this report seeks to extract the clear lessons learned from past dam failures without including an overwhelming amount of detail. The list of dams included is by no means comprehensive. Nor do the accounts discuss every aspect of each failure. Instead, we hope that sufficient detail is provided so that the reader can understand the context of each lesson, but more importantly, can apply the lesson to future projects.

In addition, it is not our intent to isolate the specific cause of the dam failures described here. Identification of detailed causes of failure is often difficult and controversial, as pointed out by Sowers (1979): “Often the final factor is nothing more than a trigger that sets a body of earth in motion that was already on the verge of failure. Calling the final factor *the cause* is like calling the match that lit the fuse that detonated the dynamite that destroyed the building *the cause* of the disaster.” Thus, the overarching lessons are emphasized here, rather than the detailed causes of failure. While we might not all agree on the particular causes of each failure, the relevant lessons will hopefully be clear to all.

The dam failures in this report are organized by date rather than the prominence of each occurrence or the type of failure. This ordering demonstrates the improvements that have been made in dam engineering over the years. Sadly, it also shows that many lessons have not been learned but are repeated time after time. For easy reference, an alphabetic index of the dams is provided in Appendix A, and the cases are separated into categories by type of failure in Appendix B.