

Introduction

The workshop brought together 24 engineers experienced in design, surveillance, and repair of dams, and in related disciplines, for discussion of experiences related to piping around conduits through embankment dams, and methods for detection and mitigation.

The first two days of the workshop were devoted to exchange of information through presentations by the participants and discussions of piping around conduits through embankment dams.

Presentations included:

- summaries of statistics regarding dam accidents, dam incidents, and dam failures caused by piping around conduits,
- descriptions of design and inspection practices, and
- case histories of investigation, monitoring and repair of dams affected by piping around conduits.

It was clear from the statistics and the cases described during the workshop that piping around conduits through embankments represents a major and growing problem. There is widespread need for dissemination of information about seepage around conduits, how it can be detected, and how it can be mitigated. As dams and the conduits through them age, the problem grows worse. Dam owners and regulating agencies need to devote careful attention to detection of potential problems, and considerable resources will be needed to prevent an epidemic of failures in aging dams.

The final half-day of the workshop was devoted to consideration of possibilities for productive research on detection and mitigation of problems related to the topic.

The results of the discussion of research needs are tabulated in the following pages, followed by a summary of each of the 22 presentations made during the workshop.

The Appendix contains the names and addresses of the workshop participants.