

Delta Levees

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E-003280



Memorandum

Date: July 8, 1998
To: CALFED Policy Group
From: Lester A. Snow *Lester A. Snow*
Executive Director
Subject: Seismic Stability of Delta Levees

Summary

The Seismic Sub-Team of the Levees and Channels Technical Team has been investigating the seismic vulnerability of Delta levees. The Sub-Team, composed of seismic experts and geotechnical engineers with experience in the Delta, developed an assessment of the vulnerability of the current Delta levee system to earthquake shaking. Two seismic models of the Delta region were used, and the fragility of Delta levees was estimated. The Sub-Team developed a relationship between number of levee failures per predicted earthquake return period.

Detailed Discussion

This item was presented for information only at the July 1, 1998 CALFED Management Team meeting. It is scheduled to be presented at the July BDAC meeting.

Delta levee vulnerability to seismic events has always been controversial. Although there has never been a documented levee failure from a seismic event, the Delta has not experienced a significant seismic event since the levees have been in their current state. Seismologists' indicate that the Delta might be on the verge of a more seismically active period after a relatively long period of quiescence. Geotechnical engineers are still gathering data to determine how Delta soils amplify or attenuate earthquake shaking.

Some Delta interests feel that the earthquake threat is minor, if not manageable. Water suppliers are concerned about the potential risk of multiple island failures and the resultant service and water quality impacts.

CALFED Agencies

California
The Resources Agency
Department of Fish and Game
Department of Water Resources
California Environmental Protection Agency
State Water Resources Control Board

Federal
Environmental Protection Agency
Department of the Interior
Fish and Wildlife Service
Bureau of Reclamation
U.S. Army Corps of Engineers

Department of Agriculture
Natural Resources Conservation Service
Department of Commerce
National Marine Fisheries Service

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The Seismic Sub-Team will present a current assessment of levee vulnerability based on updated seismicity and recent fragility. The Levee Program will be conducting further studies to apply this information to overall risk assessment.

Action

Information/Discussion. This presentation is provided for information only.