DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

A Video Report on "THE PARKFIELD EARTHQUAKE PREDICTION EXPERIMENT: THE EMERGENCY RESPONSE"

by

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THE PARKFIELD EARTHQUAKE PREDICTION EXPERIMENT:

The Emergency Response

Description

In 1985, the U.S. Geologicial Survey (USGS) officially notified the State of California that a magnitude 6 earthquake is likely to occur before 1993 on the Parkfield section of the San Andreas fault in central California. Parkfield is the site of the preeminent earthquake prediction experiment in the world today, and the first in the United States to receive official sanction from the National Earthquake Prediction Evaluation Council (NEPEC). Since 1985, the USGS and the California Department of Conservation have jointly funded a comprehensive prototype earthquake-prediction experiment at Parkfield that is designed to document details of the earthquake failure process and, if possible, to issue a short-term warning of the anticipated shock. The USGS warning will be directed to the California Office of Emergency Services (OES), the agency responsible for disseminating hazard warnings to county and local officials; coordination of the USGS and OES plans are essential for maximizing public safety.

The purpose of this video report, **"The Emergency Response"**, is to explain how federal, state, county, and local agencies are prepared to cooperate if a short-term earthquake prediction is issued by the U.S. Geological Survey for the Parkfield area. **"The Emergency Response"** provides minimal background about Parkfield and indicates some of the monitoring equipment that has been installed. A short-term earthquake prediction is simulated to show how a short-term warning would be transmitted by the USGS to the California Office of Emergency Services. In turn, the affected counties would pass the word along to local agencies and emergency broadcasters who transmit the alarm to the citizens at large. Because these communication channels have all been planned in advance, it is expected that the time between the USGS declaring the alarm and the broadcast of the alarm could be only several minutes.

This video report deals only with the communications response to a possible short-term earthquake warning. Additional video reports on other aspects of the Parkfield Earthquake Prediction Experiment are currently being developed.

This video report was recorded and edited on standard 3/4-inch U-matic video equipment. It runs four minutes in length, exclusive of credits. Steve Walter produced this video report and, along with Bill Bakun, wrote the script. Narration was provided by Frank Riley of the USGS. Scenes were videotaped on location at the California Office of Emergency Services in Sacramento, the San Luis Obispo County Office of Emergency Services, and radio station KVI in San Luis Obispo. I am grateful for their cooperation.

Availability

A copy of this video report is available for viewing in the photo library of the western regional headquarters of the USGS in Menlo Park, CA. The video can be viewed on the library VCR or, depending on availability, it may be checked out for viewing elsewhere.

Copies of **"The Emergency Response"** video report may be purchased from the commercial video production facilities listed in Appendix One. Copies can be made for all standard formats including: 2-inch, 1-inch Type-C, 3/4-inch U-matic, 1/2-inch VHS, 1/2-inch Betamax, and 8mm. NTSC, SECAM, and PAL standards are all available. Inquiries on price, ordering, etc. should be directed to the listed production facilities.

Appendix One

The following video production services can provide, for a charge, duplicate videotapes of **"The Emergency Response"** video report. Inquiries and orders should be sent directly to these businesses.

VIDEO TRANSFORM
2450 Embarcadero Way
Palo Alto, CA 94303
(415) 494-1529
Attn: Mary MacKinnon

Other production services or video libraries interested in obtaining **"The Emergency Response"** video report for duplication or resale should contact the author at the following address.

Steve Walter
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345 Middlefield Rd.
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(415) 329-4748

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Produced by
Steve Walter

Written by
Steve Walter and Bill Bakun

Narration: Frank Riley

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SCRIPT

A. BACKGROUND

A.1 Panorama of Parkfield Valley

In 1985, The United States Geological Survey issued this country's first official earthquake prediction. Scientists predicted that a magnitude 6 earthquake will occur . . .

A.2 dissolve to map of Parkfield

. . . along the San Andreas Fault before 1993. The earthquake will be located in central California, near the small town of Parkfield.

A.3 Scenes of Parkfield: town sign, school building

Parkfield has become the unlikely setting for a real-life experiment in earthquake prediction, an experiment that is changing how we cope with the earthquakes that will occur in more populated areas of the country.

A.4 Instrumentation: Drill rig at Varian hole; 2-color laser

The San Andreas near Parkfield has become the most heavily instrumented fault in the world: Seismometers to detect possible foreshocks . . . lasers to measure straining across the fault that may precede the main rupture . . . hundreds of instruments providing information about the impending earthquake.

A.5 Satellite antennae; Arrow from Parkfield to Menlo Park

Data from Parkfield are transmitted continuously to the U.S. Geological Survey office in Menlo Park.

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B. MENLO PARK - U.S.G.S. INITIATES THE WARNING

B.1 USGS sign; computer screen with epicenters on map

In Menlo Park the data are recorded and monitored by computer. If unusual activity occurs, the computer sends a message . . .

B.2 dissolve to beeper going off

. . . alerting seismologists.

B.3 Bill Bakun at terminal; calling O.E.S.

If the activity meets predetermined criteria, an earthquake alert is declared. The first warning is telephoned to the Governor's . . .

B.5 O.E.S. sign in Sacramento

. . . Office of Emergency Services in Sacramento.

C. OFFICE OF EMERGENCY SERVICES - RELAYING THE ALERT

C.1 Dispatcher taking alarm call

The Office of Emergency Services is responsible for relaying the warning to counties that might be affected by the earthquake.

C.2 Dispatcher starts county alert sequence

(dispatcher reads alert message; lists counties affected - fade down)

C.3 Figure 4 - Arrows from Sacramento to Counties

This message is transmitted to all six counties.

D. COUNTY O.E.S. - RESPONDING TO THE ALERT

D.1 Establishing shot of San Luis Obispo county building with antennas; cut to county OES sign

County officials are responsible for notifying local agencies and the public of the earthquake warning.

D.2 Dispatcher relaying alert to local agenies

The warning will go out to local officials such as: Law enforcement agencies, schools, and hospitals.

D.3 Fire department doors opening

Precautions will be taken so that critical equipment will not be trapped in damaged buildings.

E. COMMUNITY - TAKING PRECAUTIONS

E.1 Radio station broadcasting to community
(Announcer interrupts program for EBS announcement; fade out sound

Emergency broadcast stations in the area will carry the alert to the rest of the community, warning people to take precautions in their own homes:

E.2 dissolve to: Scenes of people listening to radio; home preparations for quake (fade up recording of announcer)

F. CONCLUSIONS

F.1 Map of CA showing Parkfield, San Fran., L.A., and S.A.F.
(slow zoom out from XCU of Parkfield area)

In fact, the anticipated magnitude 6 earthquake will probably not produce serious damage much beyond Parkfield itself.
The benefits of the Parkfield prediction experiment will come from applying the lessons learned at Parkfield in reducing casualties and damage in the much larger earthquakes that occur elsewhere along the San Andreas and throughout the rest of the country.

F.2 (fade to black)

F.3 Credits