

Earthquakes and other Disasters



(a)

14 Jan 1994 Northridge

- landslides
- airborne dust -> valley fever

Easter Sunday 2010
El Mayor earthquake

- airborne dust

[YouTube movie](#)

Image: S. Marshak “Earth, Portrait of a Planet”

Edition
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Earthquakes and other Disasters



(b)

Image: S. Marshak “Earth, Portrait of a Planet”

Earth: Portrait of a Planet, 2nd Edition
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April 18, 1906, San Francisco

book chapter 1 study guide

- fire!!!!
- ruptured gas lines
- infrastructure cut off

Earthquakes and other Disasters

- volcanic eruptions (Mt. St. Helens, 1980)

May 22, 1960 Valdivia, Chile EQ

May 24- July 22, 1960

Eruption of Puyehue-Cordon Caulle Volcanoes



source: wikipedia.org

book chapter 5
coursera
video 7

-very large EQs may trigger volcanism far away (Rayleigh waves!)
(2002 Denali EQ/Yellowstone; 2004 Sumatra/Alaska volcanoes)

Earthquakes and other Disasters

11 March 2011 Tohoku, Japan EQ

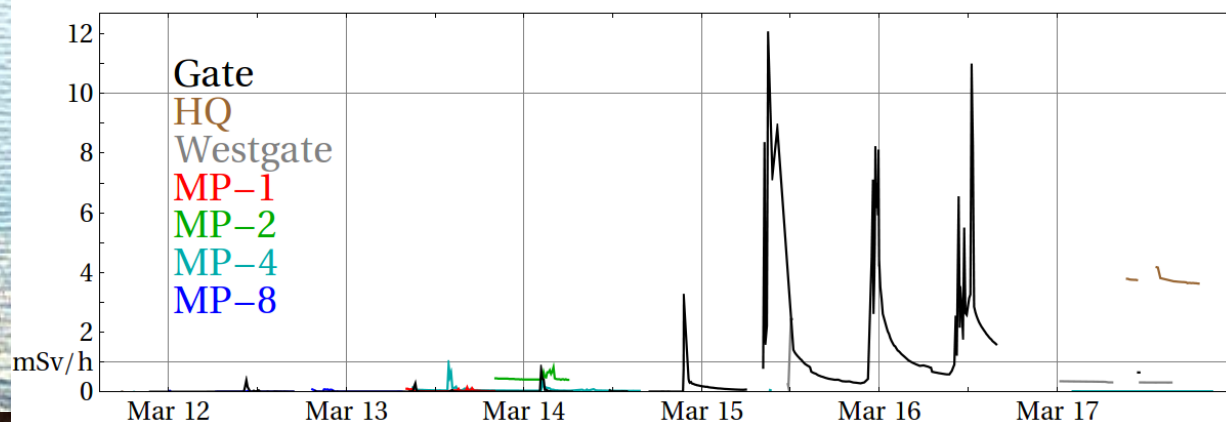
10mSv/h = 10,000 x normal for big city

Disaster at Fukushima-Daiichi Nuclear Power Plant

boiling water reactors
built by GE
designed for 0.45 g
EQ acceleration: 0.56 g

source: wikipedia.org

Fukushima Plant Radiation at Various Locations (Linear Scale)



- minor damage by EQ
- 15m tsunami hit 50 min later
- power outage led to overheating/explosions at reactors (full meltdown)
- largest nuclear reactor disaster since Chernobyl 1986

Earthquakes and Power Outages

- lack of cooling -> food spoilage, industrial accidents
- no traffic guidance
- no landline phone connection with cordless phones
- loss of cell phone coverage
- no gas pumps
- no water pumps -> water contamination -> diseases

Earthquakes and other Disasters

- fire
- floods
- landslides
- volcanic eruptions
- diseases
- pollution/radiation
- **POWER OUTAGE**