Earthquakes-Chapter 11

~1 million/yr
Measuring

- Mercalli (1-12) v Richter (1-10...30x)
Wave Energy

• P, S and L
L Wave

D. Surface wave

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Recording Earthquakes

- First P wave
- First S wave
- Surface waves
Destruction
Giant Whirlpool
Tsunamis
Geologic Evidence

1700’s in Oregon
Land Shifting

Japan lifted 8-13 feet!!
Fukushima Nuclear Power Plant
U.S. Response Forces
Fukushima No. 1 nuclear power plant’s No. 2 reactor

- Reactor vessel
- Steel containment vessel
- Concrete shell (“drywell”)
- Refueling bay
- Wetwell (“torus”)
- Mark I Containment
- Spent fuel pool

- Reactor pressure vessel
- Nuclear fuel rods
- Reactor containment vessel
- Pressure suppression pool
- reactor’s outer containment building
- part suspected to be damaged
- water
Nuclear Steam Electrical Plants

Water used for Steam and Cooling--3 loops
Cooling Water Techniques

- Reservoir Ponds
- Rivers
- Oceans
Glenrose, TX—60 miles away

Dinosaur Tracks
Summary of Japan’s Earthquake

• Destruction with Tsunamis in the Billions
• Potential for Nuclear Disaster
• Earth speeds up -1.8 microsec
• Japan lifted about 8-10 feet
• Japan moved 13 feet closer to U.S.
• Axis shift 3-4 inches
• Loss of Life—perhaps 20,000