OUTLINE

• WORLD NUCLEAR POWER
• FUKUSHIMA
• U.S. STATUS
• QUESTIONS
ONE URANIUM FUEL PELLET WEIGHS ~ 7 GRAMS AND GENERATES AS MUCH ENERGY AS ...
WORLD NUCLEAR POWER

- Electricity Diversity
- Sustainable Energy
- Economic Considerations
- Electricity Demand
WORLD TOTAL: 454 REACTOR UNITS

Source: International Atomic Energy Agency: PRIS Database
Updated: October 2018
54 NUCLEAR REACTORS UNDER CONSTRUCTION

- China: 11
- India: 7
- Russia: 6
- South Korea: 5
- United Arab Emirates: 4
- United States: 2
- Ukraine: 2
- Slovakia: 2
- Pakistan: 2
- Japan: 2
- Belarus: 2
- Bangladesh: 2
- Turkey: 1
- France: 1
- Finland: 1
- Brazil: 1
- Argentina: 1

Source: International Atomic Energy Agency: PRIS Database
Updated: October 2018
EVENT INITIATION

- 9.0 magnitude earthquake
- March 11, 2012
- Centered offshore

- Designed for 8.2 magnitude earthquake
- 9.0 quake is 8 times greater
SERIOUS SECONDARY EFFECTS

- Tsunami
- Aftershocks
- Major fire at a chemical plant
TSUNAMI DESTRUCTION
TSUNAMI DESTRUCTION
FUKUSHIMA
FUKUSHIMA BEFORE

Unit 1

Unit 2

Unit 3

Unit 4

Unit 5

Unit 5
UNITS 1 - 4 AFTER
LIKELY OUTCOMES

- Station Blackout
- Spent Fuel Storage
- Multiple Units (not just a single unit)
- New Plants

United States  Germany/Italy
China  India
United Arab Emirates  Russia
WHAT IS DIFFERENT TODAY?

1. Improved Licensing Process
   - Construction Permit
   - Operating License
   - COL

2. Brownfield Sites
   - South Texas Nuclear Power Plant
OTHER IMPROVEMENTS

Early Site Permit

Design Certification

Ground Site

AP1000
QUESTIONS?