

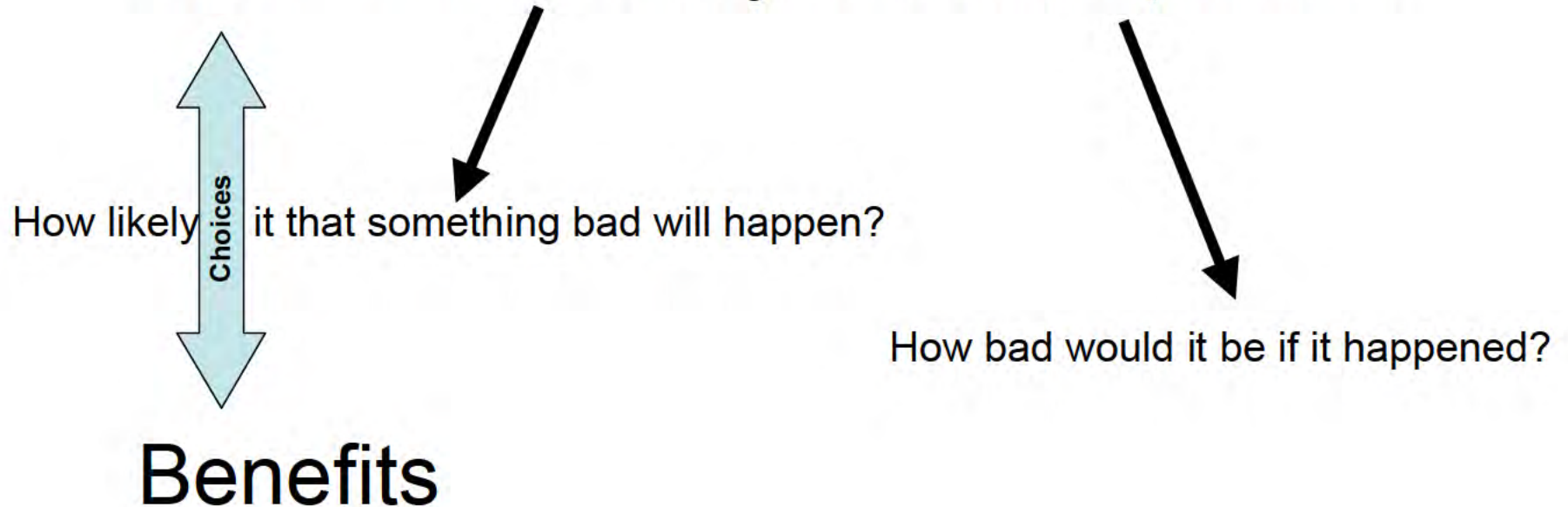
# Nuclear Waste Disposal and the Role of Science



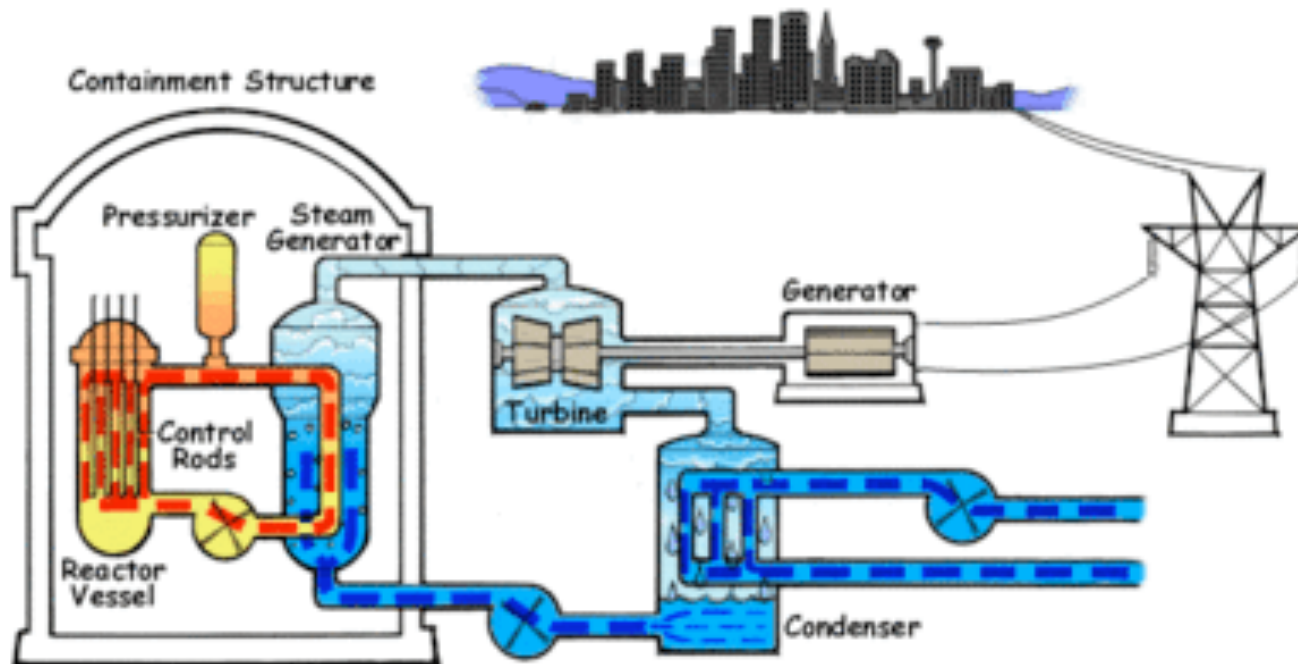
Dr. Bruce A. Robinson  
Los Alamos National Laboratory

# What is risk?

**Risk = Probability x Consequence**



# Nuclear Power Plant Electricity Generation

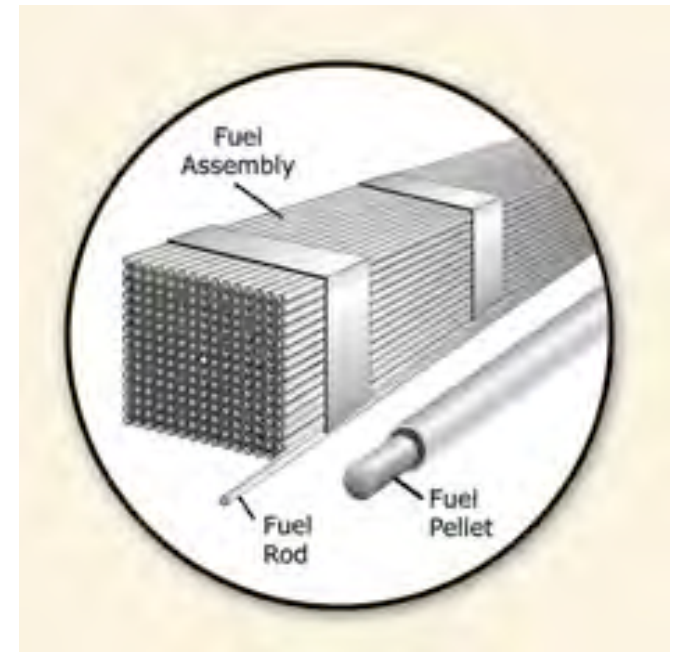


# Waste from Coal and Nuclear Plants

Coal



Nuclear



= 23 nuclear fuel pellets

# What do we do with the waste today?

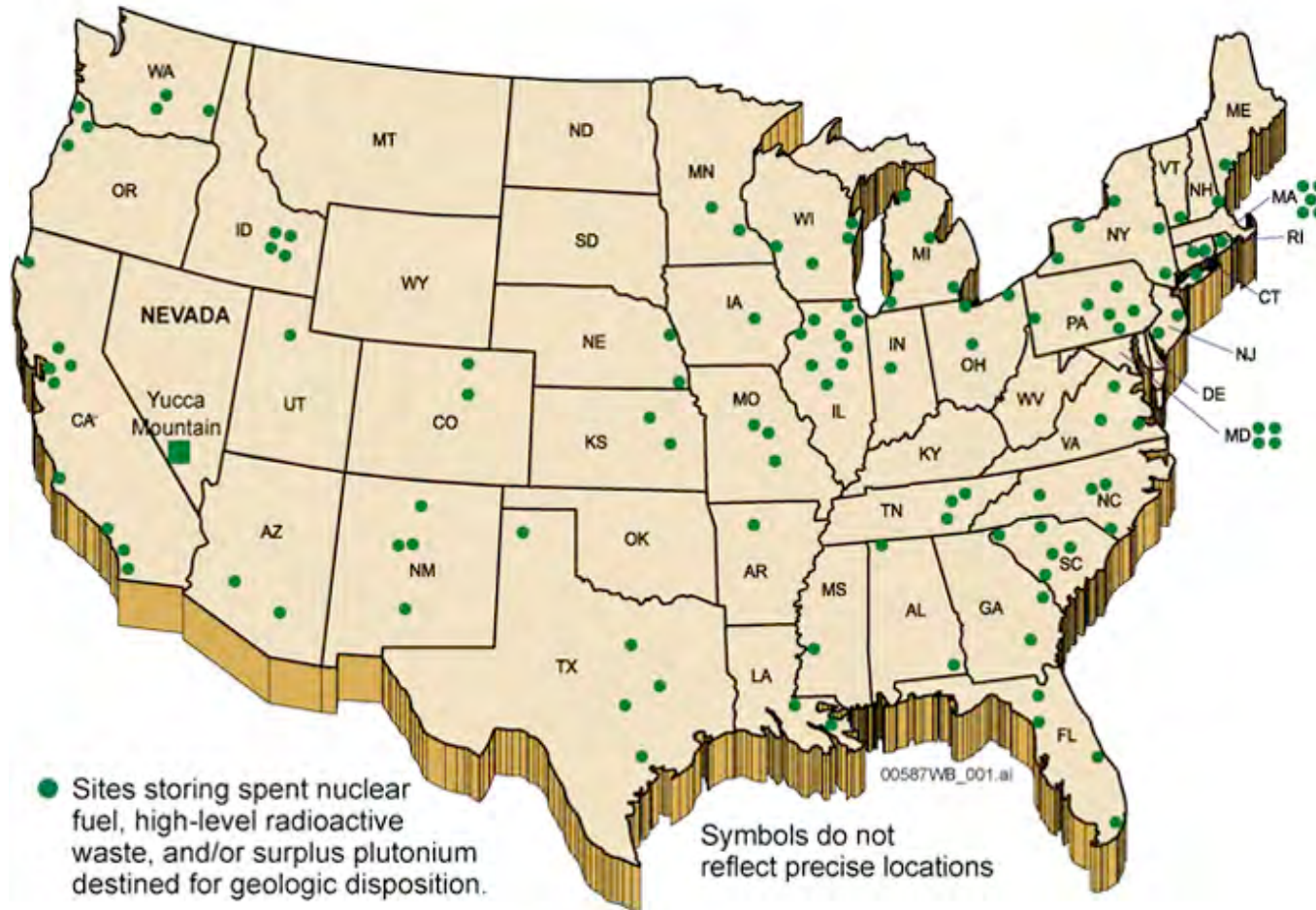
Storage Pools



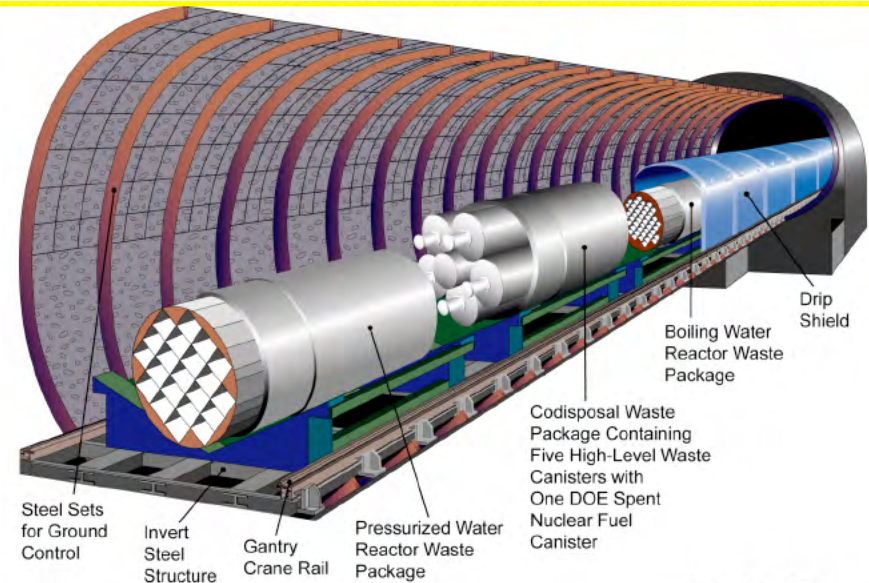
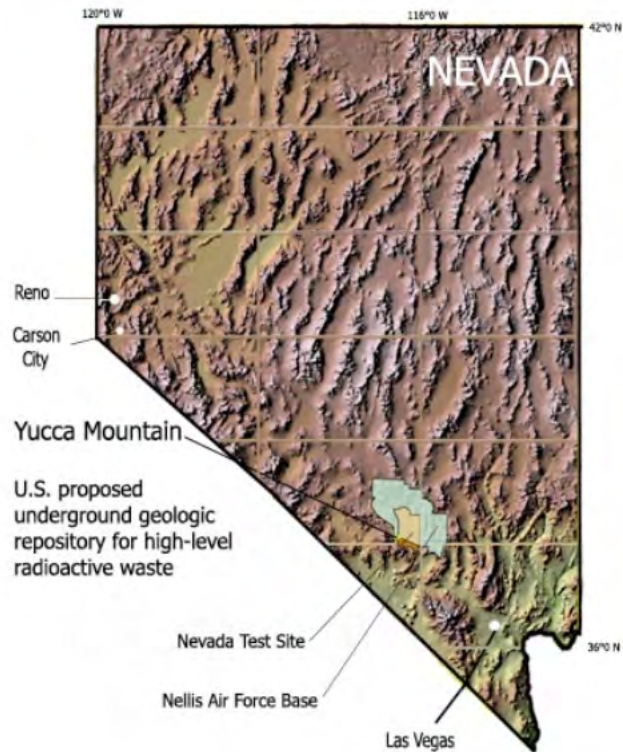
Dry Cask Storage



# Where is the waste today?

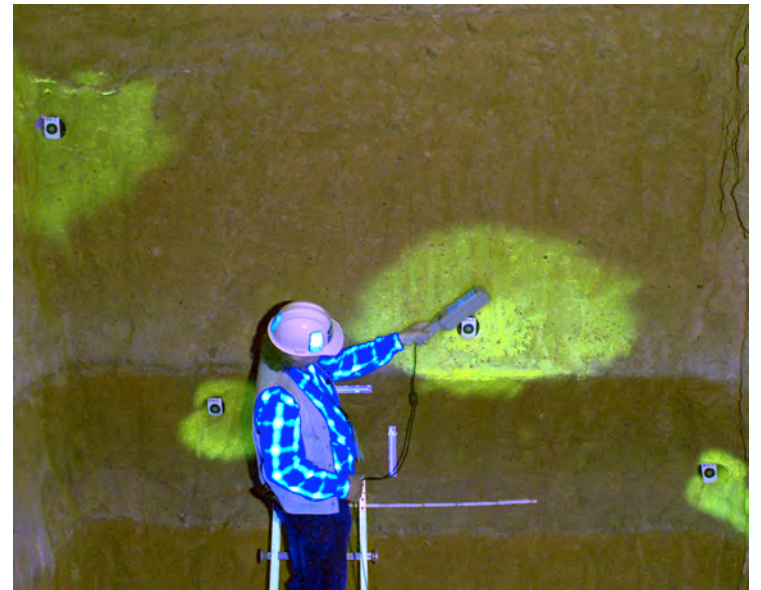


# Yucca Mountain Repository



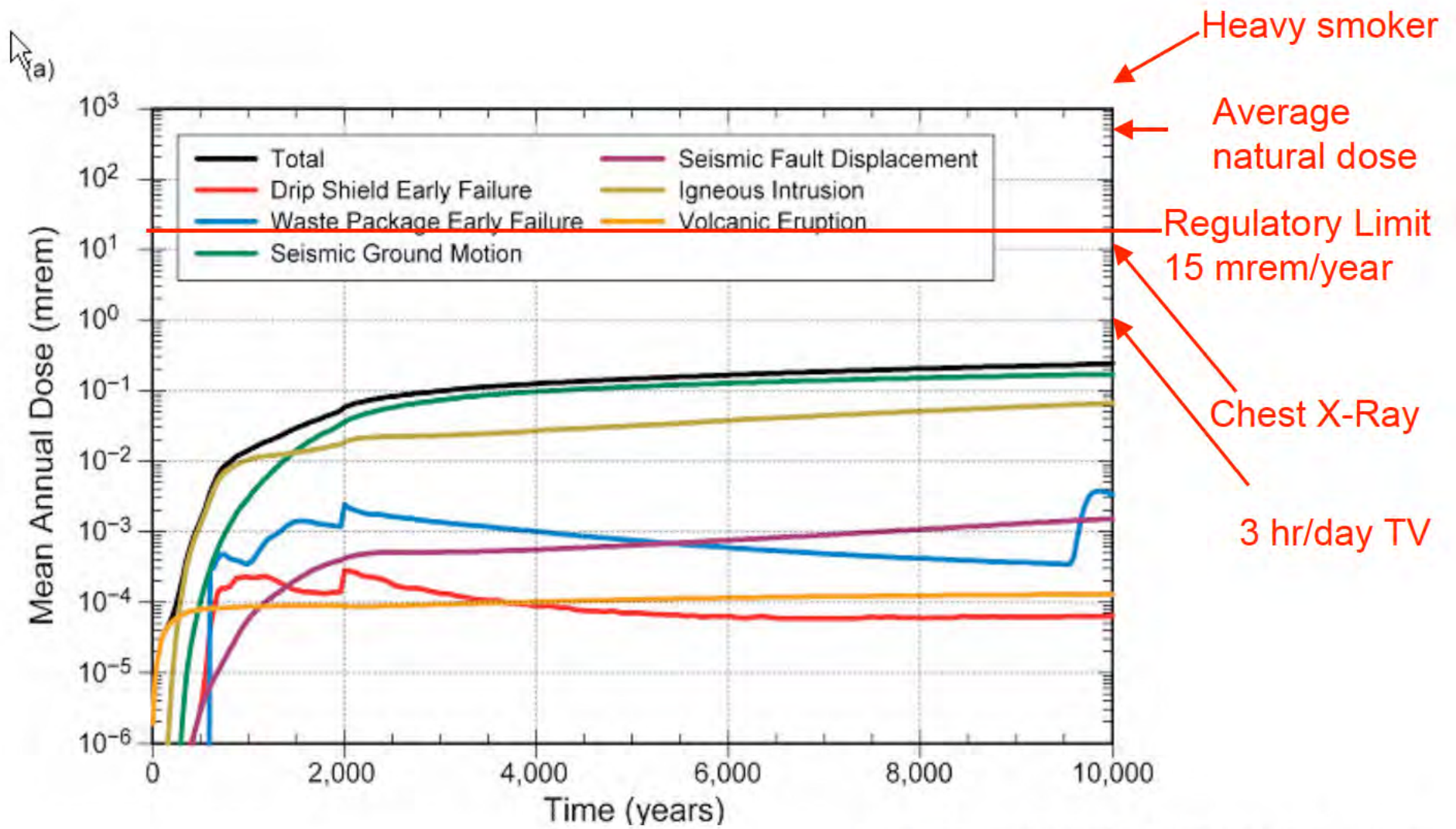
Drawing Not to Scale  
00022DC-SRCR-V1S30-02e.ai

# Is Yucca Mountain Safe?





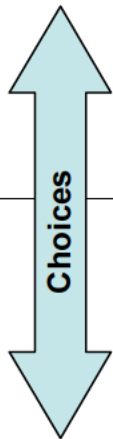
Our science says: **YES**



Risk = Probability x Consequence

# How big a risk are we willing to take?

$$\text{Risk} = \text{Probability} \times \text{Consequence}$$



Determination of risk: Responsibility of scientists

Value judgments on the benefits: Societal judgment

**Benefits**

## **Advantages of Solving the Nuclear Waste Problem**

- Expanded use of clean nuclear energy
- Avoidance of carbon emissions
- Safety – waste is isolated from people
- Intergenerational equity

What do you think?