



**Fukushima Lessons-Learned
Recommendation 2.1
Other External Events Protections
*Implementation Issues***

February 22, 2012

Outline

- Screening Methods
- Determination of Design Basis
- Plant Assessment Methods
- Guidance Development

Screening Methods

Examples of Screening Criteria (ASME/ANS RA-Sa)

1. Event has less damage potential than the events for which the plant has been designed
2. Event has a significantly lower mean frequency of occurrence than another event
3. The event cannot occur close enough to the plant to affect it
4. The event is included in the definition of another event
5. The event is slow in developing

Determination of Design Basis

- For each external hazard that cannot be screened out:
 - Identify design basis or
 - Identify design features to ensure plant is protected

Plant Assessment Methods

- High Temperatures
 - Possible loss of air cooling
 - Historic versus 1% exceedance temperatures
 - Impact on Ultimate Heat Sink
 - Maximum evaporation
 - Minimum water cooling
 - Low water conditions
- Severe (10^{-2} per year) Winds
 - Wind loading
 - Fastest-mile versus 3-second gust
- Extreme (10^{-7} per year) Winds
 - Tornadoes versus hurricanes
 - Wind and missile loading

Guidance Development

The NRC intends to interact with industry and stakeholders to develop methodologies for:

- Hazard Evaluation process
- Plant Assessment process