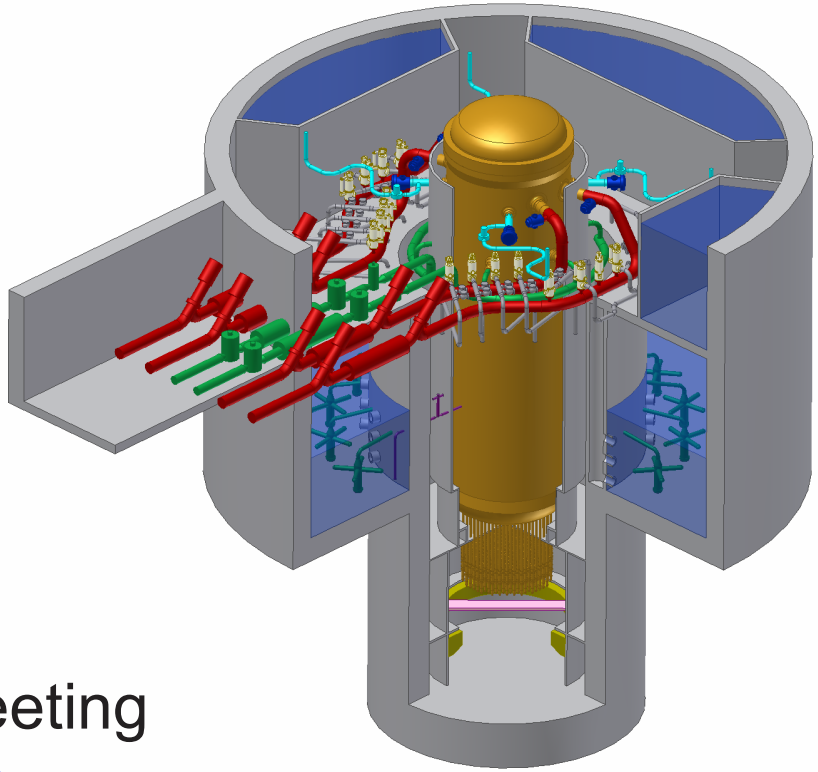
Site Parameters



ESBWR Pre-application Meeting

October 12 and 13, 2004

imagination at work

ESBWR Site Parameters

- Original Site Parameters for advanced plants were developed as part of the EPRI URD effort
  - > Were supposed to bound most (all) sites East of the Rockies
  - > Have been used by previous Design Certifications
- Early Site Permit (ESP) applications have identified some values that are not bounded by the URD values
- GE is reviewing the ESP values for all 3 sites
- Where reasonable GE will bound all sites

ESBWR Site Parameters (cont)

- Temperature and Humidity changes
  - > Increase in max temperature and simultaneous wet-bulb
  - > No impact on design of safety-related heat removal systems (IC and PCC)
    - – Heat removal is via temperature rise and heat of vaporization of the IC and PCC pools of water
  - > Primarily effects HVAC design
    - – Non-safety related HVAC
    - – Latent heat requirements from increased moisture removal
  - > Minor impact on the design of the cooling towers

ESBWR Site Parameters (cont)

- Wind Speeds
  - > Tornado
  - > Extreme Wind
- Current Tornado advanced plant design criteria
  - > 300 mph total
    - – 240 mph rotational
    - – 60 mph translational
  - > NRC had agreed to these in the FSER for the EPRI URD

ESBWR Site Parameters (cont)

- New (old) tornado proposed by NRC in ESP Review Standard (RS-002)
  - Return to Reg Guide 1.76
    - Worst case (Region I) 360 mph
    - GE understands that the NRC Staff is currently seeking concurrence from Commission
  - GE also understands that there is the possibility that NRC may agree to compromise position
    - 330 mph

ESBWR Site Parameters (cont)

- GE encourages NRC to expedite the resolution of this issue
- GE will need the following criteria as soon as possible
  - Total wind speed
    - Rotational wind speed
    - Translational wind speed
  - Pressure drop
    - Maximum rate
    - Maximum amount
  - Tornado generated missiles
    - Applicable velocity for the defined missile types

ESBWR Site Parameters (cont)

- Maximum wind speed (severe weather)
  - > Hurricane
  - > Wind shear
  - > Current design values
    - – 110 mph for non-safety-related SSCs
    - – 122 mph for safety-related SSCs
- Recent Building Codes have increased
  - > IBC 2000
    - – Costal areas, FL, and TX 140 to 150 mph
    - – Inland is less

ESBWR Site Parameters (cont)

- Expectations
  - > Utilities desire a certified design that can be sited at most (all) existing sites
  - > ESBWR will be designed to current values
  - > Design Impact of adopting higher speeds
    - – Primarily affects non-safety-related SSCs
    - – Practical perspective is that steel siding is precluded as a building sheathing
  - > Is the NRC considering any changes to the basic wind speed criteria
    - – Recent meteorological events

ESBWR Site Parameters (cont)

- Seismic design criteria used in earlier design certifications may not cover the actual site conditions
  - GE desires to define an envelope of conditions to use in the ESBWR design
  - GE does not want to confuse the resolution of this issue for the ESP applicants
- Issue from a design perspective tends to be more significant for Equipment Qualification
  - Impact on structural design is not as significant
    - Other criteria have significant influence on the structural design

Summary

- GE wants ESBWR design to be acceptable for all potential sites
- The ESBWR will adopt the most conservative site design values as reasonably practical
- GE does not want to get in the middle of the resolution of these issues for the ESP
- GE urges the NRC to expedite the review and resolution of these issues
  - > Adopting any new site design parameters early in the Design Certification application will be much easier than trying to back fit later

Requested NRC Actions

- Inform GE of timing and anticipated resolution of tornado wind speed
- Inform GE of timing and anticipated resolution of seismic design ground motion issue
- Inform GE if there are any NRC discussions relating to a change in design criteria for basic wind speeds