

Target Site Capacity: Concept and Use

- Approx. target electrical output for new facility that could be located at GG ESP site: Established to be ~2000 MWe
 - Reactor technologies considered: Wide range of electrical output
 - To facilitate comparison
 - Defined number of units/modules sufficient to produce at least 1000 MWe (per vendor recommendations)
 - This number of unit/modules = "single-plant unit"
- Examples:
- 1 PBMR: 8 Modules (1280 MWe)
 - 1 AP1000: 1 Unit (1150 MWe)
 - 1 ACR-700: 2 Units (1462 MWe)
- Capacity range of "single-plant units": 1005 to 1500 MWe

U.S. NUCLEAR REGULATORY COMMISSION

In the Matter of System Energy Resources Inc

Doc. No. 52-009-ESP Official Exhibit No. SERI-33

OFFERED by Applicant FOR _____

NRC St: _____

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Action Taken: ADMITTED REJECTED WITHDRAWN

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Target Site Capacity: Concept and Use, Cont'd

- PPE bounding values had been identified for each parameter for 1000 MWe “single-plant units”
- To achieve at least 2000 MWe
 - Doubled “single-plant unit”: Range of 2010 to 3000 MWe
 - Bounding values for PPE parameter were doubled, where appropriate

EXAMPLES

- Doubled value: PPE 2.4.4 (Blowdown flow rate); PPE 2.4.9 (make-up flow rate)
- Not Doubled: PPE 2.4.5 (Blowdown temperature); PPE 2.4.8 (cooling tower height); PPE 9.5.2 (post accident, airborne effluents)
- Result: Composite set of bounding design parameter values that support Project Goal

Target Site Capacity: Concept and Use, Cont'd

- Bounding thermal reactor power (PPE 17.3): 4300 MWt per unit, set by General Electric ABWR design
- Other bounding PPE parameter values were determined independently from the 4300 MWt parameter value
- PPE bounding values were used in application
 - Target site capacity of ~ 2000 MWe was a tool to construct the PPE, but was not a bounding value or PPE parameter

Process at COL: Exceeding Max MWt PPE Parameter

- At COL, application must show that the selected design “falls within” the design parameters established at ESP per §52.79(a)(1)
 - If 4300 MWt is not bounding, COL application must request a variance
 - Application would evaluate higher MWt for impacts to assumptions, analyses, or results at ESP (safety and environmental)
- Analyses of impact would be included in COL application, justifying the higher MWt
- This process would apply to each parameter in the PPE