LOLE Reliability Analysis

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Loss of Load Expectation

- LOLE is a probabilistic measure of the ability of the system to serve projected load
- LOLE = Days per year when daily peak demand is expected to exceed sum of available generating capacity and imports
- Criterion: 0.1 days/year or lower.
- If achieved, the study area should have capability to meet demand such that a shortage of power (which could result in a blackout) should occur no more than one day in ten years.

LOLE Values

LOLE for WUMS for 2012

	Base Case with the Import Capability Needed to Meet 0.1 Days/Year	Base Case with Total Simultan. Import Capability	BC + Fixes with Total Simultan. Import Capability	Byron-NMA with Total Simultan. Import Capability	Salem-NMA with Total Simultan. Import Capability
Total Generation	16,314	16,314	16,314	16,314	16,314
Net Peak Demand	15,127	15,127	15,127	15,127	15,127
Reserve Margin not Including Firm Imports	7.8%	7.8%	7.8%	7.8%	7.8%
Needed/Estimated Import Capability	1,915	3,049	3,974	4,783	4,802
Hypothetical "Reserves" Including Full Import Capability	20.5%	28.0%	34.1%	39.5%	39.6%
LOLE (Days/Year)	0.1	0.007	0.0005	0.00003	0.00003

- Base Case has sufficient Import Capability to meet the LOLE criterion of 0.1 Days/Year.
- How long could we delay the need for additional generation and/or import capability (strictly from and LOLE perspective) for each alternative?

Postponing Need

Years Before Additional Generation and/or Import Capability is Needed[1]

	Base Case	BC + Fixes	Byron-NMA	Salem-NMA
Total Simultaneous Import Capability	3,049	3,974	4,783	4,802
Import Capability Needed To Meet the LOLE Criterion	1,915	1,915	1,915	1,915
Difference	**1,134**	**2,059**	**2,868**	**2,887**
Average Annual Increase in the Projected Peak Demand	332	332	332	332
Years Before Additional Generation and/or Import Capability is Needed[1]	**3.4**	**6.2**	**8.6**	**8.7**

[1]Strictly from an LOLE perspective.

- Average increase in the projected net peak WUMS demand for the next ten years = 332 MW/Yr. (2.5% per year)