Evaluation of Nuclear Power Plant and Coal Power Plant Sites for New Nuclear Capacity

Nuclear Fuel Cycle and Supply Chain

Prepared for
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Systems Analysis and Integration Campaign

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ABSTRACT

The System Analysis and Integration Campaign (SA&I) was tasked to perform a quick turnaround study to estimate the number of potential new sites having a capacity of 600 MWe or greater that could be situated on (1) currently operating and recently retired coal power plant (CPP) sites and (2) current nuclear power plant (NPP) sites. The analysis of the CPP sites was performed by updating the operational status of coal plants as of April 2024 and building on the data from the coal-to-nuclear (C2N) study completed in 2022 by Hansen et al. (INL/RPT-22-67964-Rev000) using the Oak Ridge Siting Analysis for power Generation Expansion (OR-SAGE) tool. Current NPP sites with cancelled plans for additional units during initial site construction were evaluated, as well as sites that have initiated the process to obtain a combined construction and operating license (COL) to build new NPPs. Operating NPP sites that did not fit this profile and recently retired NPPs were also evaluated using subjective analysis based on knowledge of the site footprints (acreage), aerial analysis, and OR-SAGE visual parameter evaluation to estimate the viability of adding new NPPs at existing nuclear sites.

Table 1 shows a summary of the CPP analysis. There is a potential to backfit 128–174 GWe at 145 CPP sites with nameplate capacities above 600 MWe. The CPPs that are evaluated are located throughout 36 states.

Table 1. Summary of CPP results

CPP Evaluation	Total # of units (GWe)
Potential 600 MWe units	290 (174)
Potential 1,000 MWe units	136 (136)
Potential 1,117 MWe units	115 (128)

Table 2 shows a summary of the NPP analysis for the 54 existing NPP sites and 11 retired NPP sites. There is a potential to backfit 60–95 GWe at these sites. The NPPs that are evaluated are located throughout 31 states.

Table 2. Summary of NPP results

NPP Evaluation	Total # of units (GWe)
Potential 600 MWe units	158 (95)
Potential 1,117 MWe units	54 (60)

This brief report provides a summary of the methodology used to generate the estimates and the detailed results.

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ACRONYMS

C2N	coal-to-nuclear
COL	combined construction and operating license
CPP	coal power plant
DOE	US Department of Energy
EIA	US DOE Energy Information Administration
EPRI	Electric Power Research Institute
LWR	light-water reactor
NPP	nuclear power plant
NRC	US Nuclear Regulatory Commission
OR-SAGE	Oak Ridge Siting Analysis for power Generation Expansion
SA&I	System Analysis and Integration Campaign
SMR	small modular reactor

EVALUATION OF NUCLEAR POWER PLANT AND COAL POWER PLANT SITES FOR NEW NUCLEAR CAPACITY

1. INTRODUCTION

The System Analysis and Integration Campaign (SA&I) conducted a quick turnaround study to assess the potential deployment of new nuclear power plants (NPPs) at currently operating and recently retired coal power plants (CPPs) and at 54 operational NPP sites. Retired but not fully decommissioned NPP sites were also evaluated for additional NPPs because significant infrastructure remains. The analysis of the CPP sites was performed by updating the operational status of CPPs as of April 2024 and building on the coal-to-nuclear (C2N) study [1] using the Oak Ridge Siting Analysis for power Generation Expansion (OR-SAGE) siting analysis tool [2]. The capacity of new NPPs was assumed to be 600 MWe or larger, such as a conventional generic 1,000 MWe light-water reactor (LWR) or a 1,117 MWe advanced LWR representing AP1000.

OR-SAGE evaluates land parcels in cells measuring 100 m × 100 m. There are 800 cells in a 1-mile radius, which is approximately 2,000 acres of area in a circle around a generator. There are 10 siting parameters that can be evaluated cell by cell: (1) population density, (2) safe shutdown earthquake, (3) wetland / open water, (4) protected land, (5) slope, (6) landslide hazard, (7), 100-year floodplain, (8) streamflow–cooling water makeup, (9) proximity to hazards, and (10) proximity to fault lines.

The sum of the cell-by-cell results produces a visual composite map of the site which is then used to perform site evaluations. For this analysis, only CPPs with a current or previous capacity of 600 MWe or more were considered. Twenty operational NPP sites had initial plans for an additional unit or had initiated the process for combined construction and operating licenses (COL) to build new NPPs. The utility plans for the additional capacity were used as an informed proxy for the new nuclear capacity that could be built. The remaining 34 operational NPP sites that did not fit this profile were evaluated using knowledge of the site footprints (acreage), aerial analysis, and OR-SAGE visual parameter evaluations to estimate the viability of adding new NPPs at an existing nuclear site. This study is intended to provide insight into viable sites for new nuclear capacity at existing CPP and NPP sites.

2. ASSUMPTIONS

Baseline screening criteria in OR-SAGE have evolved and provide a good correlation for existing sites. The screening criteria for different reactor technologies are provided in Table 3 which shows that a range of parameters can be defined to set up the filters to analyze sites. The flags for population density, safe shutdown earthquake (indicates ground acceleration), and streamflow (indicates availability for cooling water makeup) can be modified further for the evaluation of advanced reactor technology sites.

For this study, US DOE Energy Information Administration (EIA) data through April 2024 for CPP sites were retrieved. The data were used to update the operational list of CPPs that had been developed for the 2022 C2N study. A logic filter was implemented to remove CPP sites having less than 600 MWe capacity, as well as CPP sites that had been retired prior to 2020, thus limiting the scope of the analysis. For the retired CPPs, it is assumed that the sites are available and have not been converted for other purposes such as gas-powered plants. It is also assumed that the retired sites have not lost their licenses to provide power to the grid.

EIA data through April 2024 were retrieved for NPP sites, and it was assumed that the retired NPPs have not lost their licenses to the grid. The CPP sites were scored using an OR-SAGE spreadsheet result based

on siting guidance provided by the US Nuclear Regulatory Commission (NRC) RG 4.7 [3] and the Electric Power Research Institute (EPRI) Siting Guide [4]. The NPP sites were evaluated using previous plans for nuclear capacity at each site or by a visual siting analysis using parameters evaluated in the OR-SAGE tool as augmented by aerial imagery and known plant acreage. All sites were evaluated within a 1-mile radius of the plant, which is approximately 2,000 acres. This analysis did not use any information about land ownership, land availability, or transmission capacity for NPPs.

Table 3. Summary of OR-SAGE baseline screening criteria

OR-SAGE screening criteria for reactor technologies	**Large LWR, including AP1000 (2012 EPRI study) [5]**	**LWR-based SMR (2012 DOE study) [6]**	**Non-LWR based Advanced reactors**
Population density (people/square mile)	>500 ppsm within 20 miles	>500 ppsm within 10 miles	>500 ppsm within 4 miles
Safe shutdown earthquake (ground acceleration)	>0.3 g	>0.5 g	>0.5 g
Wetlands / open waters	Not allowed		
Protected lands	Not allowed		
Slope	>12% grade	>18% grade	>18% grade
Landslide hazard (moderate or high)	Flag (High and Moderate)		Flag (High)
100-year floodplain	Not allowed		
Streamflow: cooling water makeup (number of gallons/minute; closed-cycle cooling; limited to 10% of resource)	200,000 gpm	65,000 gpm	NA
Proximity to hazards (buffer distance)	Flag 1–10 miles		
Proximity to fault lines (buffer distance)	Dependent on length of fault per 10 CFR 100 Appendix A Table 1		

3. POTENTIAL NEW NUCLEAR ON COAL SITES

The 2022 C2N study [1] evaluated a large volume of utilities and independent power producing CPPs. The OR-SAGE tool is typically used to visually decipher large data sets related to reactor plant siting. However, because it was not feasible to perform a visual analysis on each CPP included in the 2022 C2N study, a streamlined alternative OR-SAGE evaluation was performed that allowed the collection of CPPs to be scored relative to their potential for an NPP backfit.

OR-SAGE is used to evaluate land in 100 × 100 m parcels (about 2.5 acres for each parcel). These parcels make up the data cells in the OR-SAGE database. Each CPP site was evaluated to include a 1-mile circle around the generator. Approximately 800 OR-SAGE data cells are included in a 1-mile circle (2,000 acres). OR-SAGE is used to evaluate 10 siting parameters based on selected database interrogation values, as indicated in Table 3. If a cell value is exceeded in an unfavorable direction, then it is considered *tripped*. Of the 800 cells associated with the 1-mile radius area, the number of tripped cells can be counted and scored relative to an assumed acceptable percentage of tripped database cells for that parameter. This process was repeated for all 10 siting parameters. Thus, a spreadsheet of all CPPs was generated for evaluation.

Without the visualization that the OR-SAGE database can also provide, the parameters evaluated simply provide *flags*. There is no understanding of how the 10 siting parameters interact. No listed site appears to be precluded with certainty based on the OR-SAGE spreadsheet data. For the CPPs, the operating and retired nameplate capacities are used to predict available new nuclear replacement capacity, including available cooling water and transmission capacity. This is a reasonable assumption based on replacement of the generation technology at the CPP site.

Table 4 illustrates the potential to site 600 MWe, large 1,000 MWe, or 1,117 MWe new nuclear units on currently operating CPP sites with a combined retired and operating status capacity of 600 MWe or greater with a projected retirement date. The projected retirement dates are segmented into 2025–2030, 2031–2035, and 2036–2040 time frames. Retirement dates were obtained from data reported to DOE EIA. The table below indicates that of the currently operating CPP sites projected to retire by 2040, 33 sites in 18 states could be evaluated further for new nuclear unit backfits.

Table 4. Operating coal plants binned by projected retirement dates between 2025 and 2040 with NPP backfit potential

			2025-2030			2031-2035			2036-2040		
Plant State	Number of Sites	Total Capacity MWe	Potential 600 MWe Placements	Potential 1000 MWe Placements	Potential 1117 MWe Placements	Potential 600 MWe Placements	Potential 1000 MWe Placements	Potential 1117 MWe Placements	Potential 600 MWe Placements	Potential 1000 MWe Placements	Potential 1117 MWe Placements
AZ	1	821.8	0	0	0	1	0	0	0	0	0
CO	1	1427.6	2	1	1	0	0	0	0	0	0
IL	3	4447.9	7	3	3	0	0	0	0	0	0
IN	2	4543.4	7	3	3	0	0	0	0	0	0
KY	1	1750.0	0	0	0	2	1	1	0	0	0
MD	1	1370.2	2	1	1	0	0	0	0	0	0
MI	3	6235.4	4	2	2	5	3	2	0	0	0
MN	1	2469.3	0	0	0	4	2	2	0	0	0
MO	2	2341.4	3	2	1	0	0	0	0	0	0
MS	1	1096.6	1	1	0	0	0	0	0	0	0
NM	1	2269.6	0	0	0	3	2	2	0	0	0
SC	1	1260.0	2	1	1	0	0	0	0	0	0
TN	3	5555.2	6	3	3	2	1	1	0	0	0
TX	5	6362.0	7	3	3	0	0	0	1	1	0
UT	2	2677.3	2	1	1	0	0	0	1	1	0
WA	1	1459.8	2	1	1	0	0	0	0	0	0
WI	2	2352.0	3	2	1	0	0	0	0	0	0
WY	2	3364.1	1	0	0	0	0	0	4	2	2
Total	33	51803.6	49	24	21	17	9	8	6	4	2

Note: Data obtained from inventory of all coal-fired generators as of April 2024 (DOE EIA data).

Table 5 shows the currently operating CPP sites with a combined retired and operating status capacity of 600 MWe or greater with no projected retirement date reported to EIA. There are 85 sites in 28 states that could be used as sites for new nuclear units. Without further integrated resource planning information, it is assumed that these CPP units will be retired at a date beyond 2040.

Table 5. Operating coal plants reporting no projected retirement date to EIA with NPP backfit potential

Plant State	Number of Sites	Total Capacity MWe	Potential 600 MWe Placements	Potential 1000 MWe Placements	Potential 1117 MWe Placements
AL	3	5238.5	7	3	3
AR	4	4929.0	8	2	2
AZ	1	1765.8	2	1	1
CO	1	1635.3	2	1	1
FL	4	5936.0	8	4	4
GA	2	7062.6	10	6	6
IA	4	4012.6	5	1	1
IL	4	4877.6	6	2	2
IN	7	10668.5	14	8	4
KS	2	3758.9	5	3	2
KY	5	7723.7	10	5	4
LA	2	1891.5	3	1	1
MN	1	1072.5	1	1	0
MO	4	6596.1	8	5	5
MT	1	2363.4	3	2	2
NC	4	6872.1	10	5	4
ND	4	3553.6	5	1	1
NE	2	2752.2	4	2	2
OH	4	6944.9	10	5	4
OK	1	1138.0	1	1	1
PA	2	3823.0	6	2	2
SC	3	3821.6	5	2	2
TX	6	11053.8	14	8	7
UT	1	1577.2	2	1	1
VA	2	1516.0	2	0	0
WI	2	2408.1	3	2	1
WV	8	12907.1	17	9	8
WY	1	1710.0	2	1	1
Total	85	129609.6	173	84	72

Note: Data obtained from inventory of all coal-fired generators as of April 2024 (DOE EIA data).

Table 6 provides a list of CPP sites retired between 2020 and 2024 with previous site capacity of 600 MWe or greater. There are 27 sites in 16 states that could be used as sites for new NPPs. Coal plants that were retired prior to 2020 were not considered because retired CPP sites are frequently converted to gas-fired units or are used for other generation types or purposes. Furthermore, these sites may have lost their licenses to connect to the grid, so additional time and effort would be required for them to regain access to the grid.

Table 6. Coal power plants retired between 2020 and 2024 with NPP backfit potential

			Retired 2020-2024		
Plant State	Number of Sites	Total Capacity MWe	Potential 600 MWe Placements	Potential 1000 MWe Placements	Potential 1117 MWe Placements
GA	1	1904.0	3	1	1
IL	1	1099.8	1	1	0
IN	1	600.0	1	0	0
KY	2	3160.2	5	2	2
LA	1	720.7	1	0	0
MD	2	1980.0	3	1	1
MI	3	2973.1	4	1	1
MO	1	648.0	1	0	0
NM	1	1848.0	3	1	1
NY	2	1282.3	2	0	0
OH	4	6822.0	10	5	4
OR	1	642.2	1	0	0
PA	2	2649.0	4	2	1
TN	1	950.0	1	0	0
TX	3	2373.0	3	0	0
VA	1	1352.9	2	1	1
Total	27	31005.2	45	15	12

Note: Data obtained from inventory of all coal-fired generators as of April 2024 (DOE EIA data).

4. POTENTIAL NEW NUCLEAR ON EXISTING NUCLEAR SITES

The current 54 operating NPP sites provide an excellent option for adding new nuclear capacity because of their license pedigree. The spreadsheet analysis approach used for the CPPs was available for the initial analysis of NPPs. However, identifying the capacity of new nuclear units on an existing nuclear site is more challenging because the estimate is not based on replacement generator capacity, with inferred cooling water and transmission capacity, as it is for the CPP analyses. Therefore, a more comprehensive analysis was sought to conservatively estimate additional nuclear capacity at existing NPP sites.

Where possible, the current 54 NPP sites were evaluated for additional reactor potential based on past decisions by utilities to consider siting additional large LWR units on their sites. From 2007 to 2009, utilities prepared and submitted 18 COL applications. Vogtle 3 and 4 were completed through the COL process. Five new sites were proposed through the COL process and are not included in this analysis. The remaining 12 COL applications were reviewed for their contribution to the siting analysis. Likewise, 13 of the 54 operating NPP sites had initial plans to complete more reactors on their sites than were eventually built. These 1970-era building plans were also reviewed for their contribution to the siting analysis.

In addition to Vogtle 3 and 4, the NRC issued 5 COLs to build 8 reactors (10 GWe) on currently operating NPP sites. The 7 remaining COL applications to build 9 reactors (14 GWe) at currently operating NPP sites have been suspended or withdrawn by the applicants. The issued COLs and COL

applications indicate that the respective operating NPP sites have been evaluated and, at the time of the application, have the potential to host additional large LWR units.

As noted, some of the 54 NPP sites had initial plans for more LWR units than ultimately were built. In this case, 49 units (41 GWe) were planned at 13 NPP sites. Of those 49 planned units, 29 (19 GWe) were constructed and are operational. The remaining 20 units (22 GWe) were cancelled between 1977 and 1990, largely because of escalating cost. At the time of their cancellation, utility environmental, transmission, and water planning were adequate to support these units. Therefore, it is assumed that these 13 NPP sites could still support additional units in the present day. In the analysis, these planned units were assigned with the same capacity as their sister unit(s).

There is an overlap of 5 NPP sites that include both canceled units and proposed COL units. For the analysis, the utility plan with the highest proposed nameplate capacity was associated with the 5 overlapping sites. Merging canceled plant results with the COL proposal data yields a combined 20 sites with a potential for 31 reactor units. These 31 large LWR units would have a capacity of 37.9 GWe based on the original plans by the utilities[a]. In addition, 18 of these 20 sites are deemed to have the potential to site 72 generic reactor technologies rated at 600 MWe each for a total of 43.2 GWe.

The remaining 34 current NPP sites were evaluated using visual analysis of data from the OR-SAGE siting tool. The OR-SAGE evaluation for these 34 sites includes a review consistent with the NRC's General Site Suitability Criteria [3] and EPRI's siting guidance [4]. The sites were reviewed for factors such as nearby population density, nearby land preserved for public use, availability of adequate cooling water, unacceptable seismic or fault hazards, nearby wetlands or flood hazards, risk from hazardous facilities such as major airports, military sites, and chemical facilities, or landslide risk. The OR-SAGE results were compared to aerial imagery and available data on the site acreage to infer and perform a subjective analysis on the potential to site a small modular reactor or a large reactor. An example analysis using OR-SAGE data is shown in Figure 1.

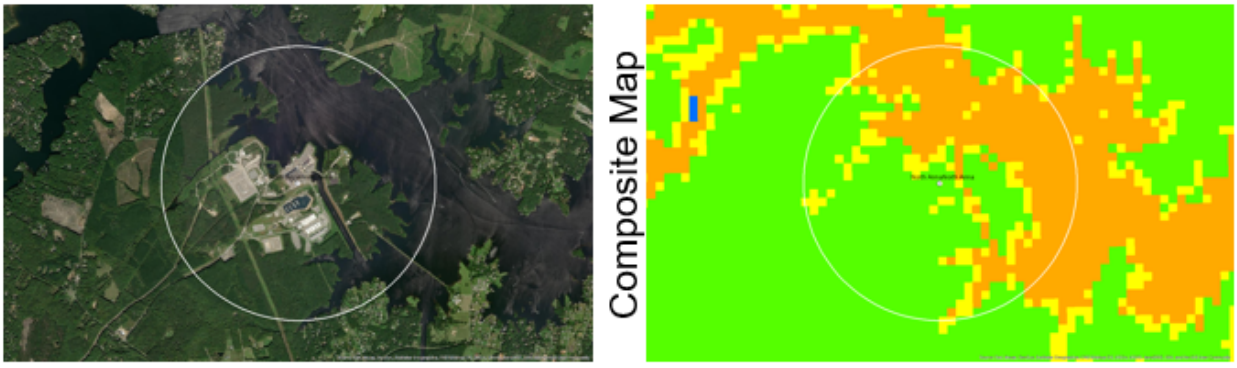

Figure 1. Example of aerial imagery and OR-SAGE analysis.

Overall, 17 of the 34 sites were deemed to have the potential to host a single- or dual-unit LWR installation. Two of the 17 units identified are large enough to host an additional single- or /dual-unit LWR installation for a total of 21.2 GWe. Power projections are conservative, assuming only one additional large LWR for cases in which space is judged to be available. Additionally, 23 of these 34 sites are deemed to have the potential to site a total of 79 generic reactor technologies rated at 600 MWe each (47.4 GWe) on 50-acre footprints.

[a] For tabular results, each unit was assigned a nameplate capacity of 1,117 MWe, which yields 34.6 GWe.

Table 7 lists current operating NPP sites in each US state that have the potential to site a large new NPP or a smaller reactor. The first three columns in Table 7 indicate the states which have operating NPP sites, the number of current sites, and the number of current units. The fourth and fifth columns provide data on the 20 NPP sites with canceled units or plans for a COL unit. Sites with canceled units and COLs are accounted for under the planned reactor column. The final two columns provide data on the NPP siting potential of the remaining 34 NPP sites. The analysis indicates that at the 54 currently operating NPP sites, there could be up to 37 NPP sites with the potential to host an additional large reactor and up to 41 NPP sites with the potential to host smaller 600 MWe reactor technologies.

Table 7. Currently operating NPP sites with potential for new nuclear plants

Plant state	Number of sites	Number of units	Sites with planned additional reactor	Sites that considered a COL *	Estimated sites with space for additional 1117 MWe reactor	Estimated sites with space for additional 600 MWe reactor
AL	2	5	0	0	2	2
AR	1	2	0	0	0	1
AZ	1	3	1	0	0	1
CA	1	2	0	0	0	0
CT	1	2	0	0	0	0
FL	2	4	0	1	0	2
GA	2	6	0	0	2	2
IL	6	11	1	0	4	6
KS	1	1	0	0	1	1
LA	2	2	1	0	1	2
MD	1	2	0	1	0	1
MI	2	3	0	1	0	2
MN	2	3	0	0	0	1
MO	1	1	1	0	0	1
MS	1	1	1	0	0	1
NC	3	5	1	0	1	2
NE	1	1	0	0	1	1
NH	1	1	1	0	0	0
NJ	2	3	1	0	0	0
NY	3	4	0	1	0	2
OH	2	2	2	0	0	2
PA	4	8	0	0	2	2
SC	4	7	0	1	1	2
TN	2	4	0	0	1	1
TX	2	4	0	2	0	2
VA	2	4	2	0	0	2
WA	1	1	1	0	0	1
WI	1	2	0	0	1	1
Total	54	94	13	7	17	41

* Sites with canceled units and COLs are accounted for under the planned reactor column.

Note: Data obtained from inventory of all nuclear reactors as of April 2024 (DOE EIA data).

DOE EIA identifies 11 reactor sites with 14 units in 11 states in a shutdown condition but not in a fully decommissioned status. Aerial imagery, knowledge of plant acreage, and engineering judgement were used to evaluate the potential for additional nuclear capacity at these sites. Table 8 lists retired NPP sites in various US states. The analyses indicate that there are 4 sites with the potential to host an additional large reactor (4.5 GWe) and 7 sites with the potential to host smaller 600 MWe generic reactor technologies (4.2 GWe). Although not considered in this analysis, three retired sites are under consideration for restarting an existing unit, with a combined capacity of 2.2 GWe.

Table 8. Retired NPP sites with potential for new nuclear plants

Plant state	Number of sites	Number of units	Space for additional 1,117 MWe reactor	Space for additional 600 MWe reactor
CA	1	2	0	0
FL	1	1	0	0
IA	1	1	1	1
MA	1	1	1	1
MI	1	1	1	1
NE	1	1	0	1
NJ	1	1	0	1
NY	1	2	0	0
PA	1	2	0	0
VT	1	1	0	1
WI	1	1	1	1
Total	11	14	4	7

Note: Data obtained from inventory of all nuclear reactors as of April 2024 (DOE EIA data).

5. SUMMARY

5.1 CPP

This evaluation of CPP sites with a minimum of 600 MWe transmission capacity indicates that 145 CPP sites may be suitable for building 128 GWe (with 1,117 MWe) reactors or 174 GWe with 600 MWe generic advanced reactor technology. This represents replacement power for existing or recently retired CPPs to reduce carbon emissions. The analysis focused on recently retired CPPs, operating CPPs with announced retirement dates, and operating CPPs with no announced retirement date. The CPP sites span 36 states. The results are summarized in Table 9.

Of the 145 CPP sites that may be amenable for siting nuclear, the analysis resulted in the following data for potential siting:

- 79% (115 of 145) have the potential to site a large LWR rated at 1,117 MWe
- 94% (136 of 145) have the potential to site a large LWR rated at 1,000 MWe
- 100% have the potential to site a generic 600 MWe reactor technology because of the study filter

Table 9. Detailed summary of CPP results

	Coal power plant (CPP)					
	Retired CPPs	***Operating CPPs***				***Total # of units (GWe)***
Retirement year	***Since 2020***	***2025–2030***	***2030–2035***	***2035–2040***	***Not announced***	
Potential 600 MWe units	45	49	17	6	173	290 (174)
Potential 1,000 MWe units	15	24	9	4	84	136 (136)
Potential 1,117 MWe units	12	21	8	2	72	115 (128)

5.2 NPP

Some of the current fleet of 94 operating NPPs on 54 sites in 28 states have the room and resources to site additional nuclear units. In addition, 11 recently retired NPP sites in 11 states have the room and resources to site additional nuclear units. This evaluation estimates that an additional 60–95 GWe could be built at existing NPP sites across a combined analysis of 31 states. The results are summarized in Table 10.

Of the 54 operating NPP sites that may be amenable for siting additional nuclear, the following was discerned:

- 69% (37 of 54) of the current NPP sites may be amenable to siting an additional large LWR
    - The analysis for 20 sites is based on sites that previously had a canceled unit or submitted a COL application to the NRC
    - Of the remaining 34 sites, 17 were evaluated to have the potential to site 1 or more large LWR units
- 24 states have the potential to site a large LWR
- 76% (41 of 54) of the current NPP sites may be amenable to siting a generic 600 MWe advanced reactor technology on a 50-acre footprint
- 24 states have the potential to site a generic 600 MWe advanced reactor technology
    - The list of 24 states differs slightly from the large LWR list

Table 10. Detailed summary of NPP results

	Nuclear power plant (NPP)			
	Retired	***Operating***		***Total # of units (GWe)***
Retirement year		***20 sites with COL or canceled unit***	***Remaining 34 sites***	
Potential 600 MWe units	7	72	79	158 (95)
Potential 1117 MWe units	4	31*	19**	54 (60)

*31 COL/canceled units (merged) had an estimated capacity of 37.9 GWe based on the technology selected. However, a capacity of 34.6 GWe was assigned to these units based on a generic large LWR capacity of 1,117 MWe.
**This is conservative because some sites could accommodate dual units.
Note: 19 COLs have been submitted since 2007. One site (Vogtle) is operational now, and one COL for a small reactor was denied. 12 COLs were submitted at existing NPP sites, and 5 COLs were submitted at brand new sites. The 5 COLs at new sites are not included in this table's data.

Locating new NPPs or technologies at a current NPP site is advantageous because communities surrounding these plants already support nuclear energy, know the safety culture, and are aware of continuous strict environmental monitoring of areas surrounding the plants, Furthermore, the communities benefit from better air and water quality, high-paying jobs associated with the NPP, as well as the benefits that a higher tax base provides. Locating replacement NPPs or technologies at an existing CPP is beneficial because it takes advantage of existing infrastructure and grid access, and it also maintains jobs.

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