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# Value/Impact Analyses of Accident Preventive and Mitigative Options for Spent Fuel Pools

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# Value/Impact Analyses of Accident Preventive and Mitigative Options for Spent Fuel Pools

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**Division of Safety Issue Resolution**
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## ABSTRACT

A series of value/impact studies were performed for accident preventive and mitigative options intended to reduce the risks posed by the storage of spent fuel at nuclear power plants in spent fuel storage pools. Options studied included limited low-density reracking of spent fuel, installation of water sprays above the spent fuel pool, and the installation of redundant cooling and/or makeup systems. The results of these studies indicated that the measures were in general not likely to be cost effective. The reason for this is due to both the low likelihood of a spent fuel pool accident that could result in a significant radiological release and the high cost of proposed modifications. These insights are largely contingent upon compliance with guidelines developed for licensees to assure the safe handling of heavy loads in the vicinity of spent fuel pools thus reducing the likelihood of the structural failure of the pool and rapid loss of water inventory due to a cask drop event.

# EXECUTIVE SUMMARY

## S.1 Introduction

In light of the possibility of a Zircaloy fire in a spent fuel pool, Generic Safety Issue 82, "Beyond Design Basis Accidents in Spent Fuel Pools," was assigned a MEDIUM priority in November 1983.

In a previous study undertaken at Brookhaven National Laboratory (BNL)[1] the radiological risks posed by the storage of spent reactor fuel at commercial reactor sites in the United States was characterized through evaluation of the likelihood and the consequences of identified scenarios involving loss of integrity in spent fuel pools. In the current study various options intended to reduce the risk posed by nuclear power plant spent fuel pools have been assessed within a value/impact methodological framework. These options included both accident preventive and mitigative measures as discussed below.

Limited low-density reracking of spent fuel is a mitigative option which is intended to reduce radiological releases through obviating the onset of self-sustaining clad oxidation in the event of loss of pool water inventory. An assessment of the cost impact of this option was made including the costs for the provision of the additional storage space required due to earlier exhaustion of pool capacity. These included pool, drywell, vault, cask, and silo facilities.

The NRC Standard Review plant (SRP) requires, as a minimum, redundant cooling systems as well as redundant coolant makeup systems for the spent fuel pool. To assess the risk control efficacy of these requirements and the potential for further risk-reduction in plants complying with the SRP, a preliminary evaluation of the risk impact of assuming system redundancy above the minimum currently required was undertaken. Additionally, for older plants with comparable SRP requirements, the risk-reduction potential of backfits was also assessed. Based upon a spectrum of assumed plant configurations, the financial impact of such modifications were also estimated.

Several methods that might serve to mitigate the consequences of "beyond-design-basis accidents" in commercial nuclear power plant spent fuel storage pools were proposed and evaluated to identify which mitigating measures, if any, appear to merit more detailed analyses.

## S.2 Spent Fuel Pool Inventory Reduction Options

The potential risk reduction value and the cost impact of storage pool system modifications and of alternative onsite spent fuel storage strategies were assessed.

Structural failure that could result in rapid and complete draining of water from the pool are predominantly caused by two types of initiators, i.e., seismic events and a cask drop on the spent fuel pool.[1] The probability of a severe seismic event has been recently re-evaluated[2] and data from this more recent document has been used in this study.

The limited low density storage option is one in which fuel discharged from the reactor within the last two years is stored in a low-density configuration. Calculations indicate that it reduces the likelihood of fire initiation following loss of pool inventory, by increasing air circulation capability, by a factor of five.[3] In order to obtain insight into the potential cost-effectiveness of the limited low-density reracking option, a value-impact assessment was performed following guidelines in the Handbook for Value-Impact Assessment (NUREG/CR-3568).[4]

Attributes considered included public health occupational exposure, offsite and onsite costs, and cost of industry implementation and operation. The associated incremental costs to the industry include the replacement of high-density storage racks with low-density racks, and the cost of increased dry storage requirements due to the consequent decrease in pool capacity.

A summary of the results is presented in Table S.1. It indicates that the costs outweigh the potential benefits due to both the low probability of the accidents under consideration and the high cost of proposed modifications.

## S.3 Improvement of Pool Make-up Reliability

The risk-control efficacy of the Standard Review Plan (SRP) requirements upon pool make-up capability was characterized within a value/impact framework. The approach taken was one of evaluating first the risk-reduction profile of requirements exceeding those of the SRP. For older plants with comparable SRP requirements, the risk-reduction potential for similar requirements was also assessed.

The cost/benefit characteristics of adding these improvements to the spent fuel pool cooling systems is summarized in Table S.2. Only the installation of an additional cooling pump to System C (Old Existing Plant with Both Cooling Pumps Required 30% of Time) appears to have non-negligible economic risk impact. The generalized representation of the Standard Review Plan requirements indicate that additional requirements would not result in cost/beneficial improvements.

## S.4 Water Spray System

Several accident mitigative measures such as water spray systems, building ventilation gas treatment systems, and covering fuel debris with solid materials were considered and evaluated to identify which mitigative measures, if any, appear to merit further analyses. Only the installation of a water spray above the spent fuel pool was studied within the value/impact framework due to its potentially significant risk-reduction properties. In the event of loss of pool water inventory, and subsequently, fuel damage due to the generation of fission product decay heat, the pool sprays would serve the function of decontaminating the radiological release. However, a scoping value-impact assessment indicates that the addition of a water spray system is not cost effective.

Table S.1 Summary of Industry-Wide Value-Impact Analysis of the Inventory Reduction Option

| Attributes | Best Estimate Evaluation ($1983)* |
|---|---|
| Public Health | $4.00 \times 10^7$ |
| Offsite/Onsite Property | $6.96 \times 10^6$ |
| Industry Implementation and Operation | $-1.38 \times 10^9$ |
| Net Benefit ($) | $-1.33 \times 10^9$ |
| Benefit ($)/Cost ($) Ratio | 0.035 |
| Ratio of Public Dose Reduction per Million Dollars Cost (Person-rem/$10^6$) | 29.0 |
| Cost of Implementation per Averted Person-rem ($/Person-rem) | $3.45 \times 10^4$ |

*Based on 1988 dollars, the Best Estimate Net Benefit, Benefit/Cost Ratio, Public Dose Reduction per Million Dollars Cost and Cost per Averted Person-rem would be $-1.47 \times 10^9$ Dollars, 0.032, 26.4 Person-rem and $3.79 \times 10^4$ Dollar/Person-rem, respectively. Cost escalation during 1983-1988 was assumed to be 9.8%.

Table S.2 Value-Impact for Generic Improvements to the Spent Fuel Pool Cooling System*

| System | Description | Improvement | Improvement Cost (1983$) | Expected Averted Cost (1983$) | Benefit/ Cost Ratio |
|---|---|---|---|---|---|
| A. | Minimum SRP | 1. Additional pump | 50,000 | None | 0.0 |
| | | 2. Additional train | 1.0E6 | 545 to 6640 | <<0.01 |
| B. | Minimum SRP Requirement With Credit for Fire System | 1. Additional pump | 50,000 | None | 0.0 |
| | | 2. Additional train | 1.0E6 | 27 to 330 | 0.0 |
| C. | Old Existing Plant With Both Cooling Pumps Required 30% of Time | 1. Additional pump | 50,000 | 2500 to 30,400 | .05 to 0.61 |
| | | 2. Additional train | 1.0E6 | 3160 to 38,550 | .003 to 0.04 |
| D. | Old Existing Plant With Credit for Fire System | 1. Additional pump | 50,000 | 125 to 1500 | .0025 to 0.03 |
| | | 2. Additional train | 1.0E6 | 159 to 1940 | <.002 |

*Quantification reflects a single spent fuel pool.

## S.5 Summary and Discussion

Generic analyses of various potential modifications to nuclear power plant spent fuel pools have been performed. Cast within the framework of value/impact analysis methodology, the risk-reduction value and the cost impact of these modifications were evaluated and compared. These were as follows:

1. The limited low-density reracking of recently discharged fuel to decrease the likelihood of the initiation of self-sustaining clad oxidation in the event of loss of pool water inventory.
2. The addition of a full capacity pump in one pool coolant makeup train to increase pool cooling reliability.
3. The addition of a completely independent pool coolant makeup train.
4. The installation of pool sprays to attenuate fission product releases in the event of fuel degradation.

Value/impact assessments were performed. A $1000/per person-rem averted conversion factor was utilized to convert dose-reduction measures into a monetary measure in the best estimate calculations. None of the risk-reduction measures were assessed to have a value/impact ratio greater than 1.

## Executive Summary References


1. V.L. Sailor et al., "Severe Accidents in Spent Fuel Pools in Support of Generic Safety Issue 82," NUREG/CR-4982 (July 1987).
2. P.G. Prassinos et al., "Seismic Failure and Cask Drop Analysis of the Spent Fuel Pools at Two Representative Nuclear Power Plants," NUREG/CR-5176 (January 1989).
3. A.S. Benjamin et al., "Spent Fuel Heatup Following Loss of Water During Storage," NUREG/CR-0649 (March 1979).
4. S.W. Heaberlin et al., "A Handbook for Value-Impact Assessment," NUREG/CR-3568 (December 1983).

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## ACKNOWLEDGEMENTS

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# 1. INTRODUCTION

The Reactor Safety Study (RSS, WASH-1400) concluded that risks associated with spent fuel storage were extremely small in comparison with severe accidents involving the reactor core. Since publication of the RSS, however, various factors have provided a basis for reexamination of the risks associated with the storage of spent fuel. First, the storage of spent fuel rather than its shipment for reprocessing or disposal is resulting in larger spent fuel pool inventories than anticipated in WASH-1400. Second, the accommodation of these larger inventories can involve the high-density racking of fuel assemblies and, third, various theoretical models have identified the possibility of a Zircaloy fire propagating from recently discharged assemblies to lower power assemblies in the event of a loss of pool water inventory. In the light of such factors, Generic Safety Issue 82, "Beyond Design Basis Accidents in Spent Fuel Pools" was assigned a MEDIUM priority in November, 1983.

In a previous study undertaken at Brookhaven National Laboratory (BNL)[1] current information and models regarding the likelihood and the consequences of pool drainage scenarios were adopted to generate a risk profile of the storage of spent fuel. In this study various options intended to reduce the risk posed by nuclear power plant spent fuel pools have been considered within a value/impact methodological framework. These options included both accident preventive and mitigative measures.

Limited low-density reracking of spent fuel, a risk reduction option which involves maintenance of recently discharged fuel batches (i.e., discharged within the last two years) in a low-density configuration, is a mitigative option which is intended to reduce radiological releases through obviating the onset of self-sustaining clad oxidation in the event of loss of pool water inventory. An assessment of the cost impact of this option was made including the costs for the provision of the additional storage space required due to earlier exhaustion of pool capacity. These included pool, drywell, vault, cask, and silo facilities.

Of the accident mitigative options considered, one option was studied within the value impact framework due to its potentially significant risk-reduction properties. This involved the installation of a water spray above the spent fuel pool. In the event of loss of pool water inventory, and subsequently, fuel damage due to the generation of fission product decay heat, the pool sprays would serve the function of decontaminating the radiological release.

The NRC Standard Review plant (SRP) provides guidance and defines the acceptance criteria for spent fuel cooling systems and is used by the NRC staff to determine whether a specific design complies with the Commission's Rules and Regulations. The SRP requires, as a minimum, redundant cooling systems as well as redundant coolant makeup systems for the spent fuel pool. To assess the risk control efficacy of these requirements and the potential for further risk-reduction in plants complying with the SRP, a preliminary evaluation of the risk impact of assuming system redundancy above the minimum currently required was undertaken. Such requirements affect risk through influencing the expected frequency with which loss of water inventory accidents occur in the spent fuel pool. Additionally, for older plants with comparable SRP requirements, the risk-reduction potential of backfits was also assessed.

Based upon a spectrum of assumed plant configurations, the financial impact of such modifications were also estimated.

## 1.1 Risk of Accidents in Spent Fuel Pools

With the U.S. moratorium on spent fuel reprocessing, spent fuel storage demands are being increased. To accommodate this growing need, existing storage pools are being expanded with the use of high-density storage of fuel. Furthermore, various dry storage options are being developed and used for extended storage.

To characterize the safety profile of spent fuel pool facilities, a range of postulated accident sequences was considered, and predictions of the probability of occurrence of these accidents and the resulting consequences were made in NUREG/CR-4982.[1] This work was performed under the auspices of the U.S. Nuclear Regulatory Commission in support of their technical analysis related to Generic Safety Issue 82, "Beyond Design Basis Accidents in Spent Fuel Pools."

The objective of the current report is to identify and to assess those additions or modifications to spent fuel pools that have the potential to reduce the risk associated with the storage of spent fuel in the spent fuel storage pool. The methodological framework of value/impact analysis is adopted in which the risk reduction value, and the cost impact of a given plant benefit are evaluated, and cast into a numerical framework that permits the direct comparison of benefit with cost.

Attention is focused upon those accident sequences that were assessed in Reference 1 to dominate the risk posed by spent fuel storage. Consideration of those measures that reduce the likelihood of, or the consequences of the accident sequences assessed to be risk dominant is an approach that permits investigations to be directed towards the plant backfits with the greatest potential risk reduction effect.

The risk dominant sequences fall into two categories. The first category involves structural failure of the spent fuel pool due to a seismic event and the consequent rapid loss of pool water inventory. The probability of such a severe seismic event has been discussed in NUREG/CR-4982, and has been recently re-evaluated.[2] Data from this more recent document has been used in the present study.

The generation of fission product decay heat raises the temperature of the uncovered fuel assemblies to the point where self-sustaining Zircaloy cladding oxidation is initiated in the most recently discharged assemblies and, possibly propagation of the cladding fire to neighboring assemblies ensues. The concomitant radiological releases result in health and economic consequences both onsite and offsite.

The second category of risk dominant accident sequences differ from those just described only with respect to the initiating event. Here the structural integrity of the pool is compromised through the impact of a heavy object (i.e., the dropping of a storage cask) upon the pool wall rather than through a seismic event. The probability of a cask dropping in the spent fuel pool is

given in NUREG/CR-4982 conditional upon a probability of 0.1 for structural failure. The present study uses a conditional probability of 1.0 as discussed in Reference 2.

Standard improvements in operator training, heavy load procedures, and equipment as outlined in NUREG-0612[3] are part of the resolution for Generic Issue A-36 and have been assessed to significantly reduce the likelihood of the accidental dropping of heavy loads, thus reducing the risk associated with the cask drop sequence significantly. The risk-reduction multiplicative factor associated with this resolution has been estimated to be 0.001[1] for affected sequences and has been incorporated in the present study.

The phenomenological progression of the cask-drop accident from the point of pool drainage is identical to that associated with the seismic sequence category.

## 2. RISK REDUCTION MEASURES

Given the diversity of plant-specific design and construction of spent fuel pools, the applicability of any generic analysis of risk-reduction measures is limited both with respect to the characterization of risk impact, and to the cost of implementation for any one plant. As with any generic assessment, therefore, the current analyses are intended only to provide a broad evaluation of the value/impact attributes of a given plant modification. In the event that more detailed analyses are found to be merited, such evaluations may need to be carried out on a plant specific basis.

In general, risk-reduction options may be classified into one of two categories reflecting the fashion in which the plant modification affects risk. A preventive option is one intended to reduce the frequency of conditions potentially conducive to the release of fission products from the fuel assemblies. The course of events leading to such conditions is defined as an accident sequence. Hence, an option intended to reduce the likelihood of the loss of pool integrity subsequent to a seismic event, or to reduce the unavailability of the pool cooling systems is classified as a preventive option. A mitigative option is one intended to reduce the magnitude of the consequences that would result from a selected set of accident sequences. This objective is generally achieved through reduction of the environmental radiological release associated with each of the affected sequences.

Given the occurrence of an accident sequence initiator (seismic event, load drop, loss of pool cooling, etc.), there exists the potential to arrest the progression of the accident at various stages of its development. For example, in the event of loss of pool cooling and the gradual boil-off of pool water inventory, measures taken to increase the reliability of inventory make-up will have direct impact upon the risk profile of such a sequence. Such a measure, characterized as accident preventive, is addressed in this report.

Given a loss of pool coolant inventory and the uncovery of spent fuel assemblies, measures taken to reduce the likelihood of the subsequent initiation of self-sustaining clad oxidation will also impact upon the risk profile of pool coolant-loss accidents. Such a measure, involving the reracking of in-pool fuel into lower density configurations in order to promote air cooling subsequent to water loss is assessed in the current report. Whether this measure be characterized as accident preventive or accident mitigative is dependent upon whether the initiation of clad oxidation is viewed as part of the accident sequence itself, or as part of the consequence scenario. For definiteness, the former viewpoint will be adopted such that the low-density fuel reracking measure is viewed as an accident preventive option.

Finally, given loss of water inventory, fuel uncovery and the onset of clad degradation, measures may be taken to minimize the subsequent release of radiological fission products. Such measures characterized as accident mitigative, actuation of installed pool sprays and the installation of filtering systems, are assessed in the current report.

## 3. SPENT FUEL POOL INVENTORY REDUCTION

### 3.1 Introduction

In NUREG/CR-4982[1] the radiological risks posed by the storage of spent reactor fuel at commercial reactor sites in the United States was characterized through evaluation of the likelihood and the consequences of identified scenarios involving loss of integrity in spent fuel pools. This section addresses the potential risk reduction value and the cost impact of storage pool system modifications and of alternative onsite spent fuel storage strategies.

A series of storage concepts were considered. The limited low density storage option is one in which fuel discharged from the reactor within the last two years is stored in a low-density configuration. The associated incremental costs to the utility include the replacement of high-density storage racks with low-density racks, and the cost of increased dry storage requirements due to the consequent decrease in pool capacity.

The risk-reduction basis for low-density racking of fuel is the promotion of air cooling in the event of loss of water inventory of the pool. The new high-density fuel storage racks restrict air flow and render recently discharged fuel (one to two years) susceptible to self-sustaining oxidation in the event of pool drainage. The older style fuel baskets with large inlet holes (3 inch diameter or more per assembly) allow less impeded air circulation. If all recently discharged fuel (less than two years) is kept in low density fuel baskets and they are separated from the wall and the older fuel by a one foot gap then the likelihood of the initiation of self-sustaining oxidation would be significantly reduced compared to the high density storage configuration.[4] Calculations with the SFUEL Code indicate that for plants which use a high density storage rack configuration a factor of five reduction in the likelihood of fire initiation (given loss of pool inventory) can be achieved by improved air circulation capability.[4] This reduction factor is based upon the time period following discharge for which SFUEL predicted sufficient decay heat to initiate clad fire.

In order to obtain insight into the potential cost-effectiveness of the limited low-density reracking option, a value-impact assessment was performed following guidelines in the Handbook for Value-Impact Assessment (NUREG/CR-3568).[5]

### 3.2 Development of Value/Impact Quantification

The principal components of any value-impact assessment are the attributes (costs and benefits) that are used to characterize the consequences of the action proposed in Section 3.1. The attributes described represent the factors that are affected by this proposed plant modification. Each attribute measures the change from the existing condition due to implementation of the option.

Comparisons of the benefit and cost in our value/impact analysis were carried out in 1983 dollars throughout this report, since many of the available data were expressed in 1983 dollars. Our results are not sensitive to the reference year since both costs and benefits were computed on the same cost index. Furthermore, the cost escalation between 1983 and 1988 was only

9.8% (Reference 17). Our final results (Tables 3.9 and 5.2), however, include data expressed in 1988 dollars.

### 3.2.1 Accident Sequence Frequencies

Because of the strong and reinforced concrete structure of LWR spent fuel storage pools, designed to Category I seismic criteria, initiating events that would lead to structural failure are extremely unlikely. However, a structural failure that results in rapid and complete draining of water from the pool could have significant consequences. The study presented in NUREG/CR-4982[1] concludes that the risk dominant sequences fall into two main categories.

The first category involves structural failure of the spent fuel pool due to a seismic event and the consequent rapid loss of pool water inventory. The probability of such a severe seismic event has been recently re-evaluated.[2] Data from the more recent document has been used in the present study (see Table 3.1).

The second category of risk involves the compromise of the structural integrity of the pool through the impact of a heavy object (i.e., the dropping of a storage cask) upon the pool. The frequency of a cask drop onto a spent fuel pool is given in NUREG/CR-4982. The conditional frequency of structural failure of the pool is assumed to be 0.1 in Reference 1. The present study uses a conditional probability of 1.0 based upon the more recent analyses reported in Reference 2. The assumed frequencies of the accident sequences considered in the current analyses are summarized in Table 3.1. Sensitivity to these assumptions is discussed in Section 3.3.3.

### 3.2.2 Public Health and Offsite Property Damage

The health and economic consequences of spent fuel pool accidents were calculated using the MELCOR Accident Consequence Code System (MACCS) Version 1.4. MACCS is a new consequence code developed at Sandia National Laboratories (SNL) and is intended to replace the older CRAC2. The code models are described in NUREG-1150 (Appendix 0).[6] The principal differences from CRAC2 are that MACCS uses a multipuff atmospheric dispersion model and has a new radiological health effects model described in NUREG/CR-4214.[7]

Two radiological source terms were utilized to reflect a range of release assumptions. The worst case assumes an accident that results in a Zircaloy fire that propagates throughout the entire spent fuel inventory in the pool, and that the accident occurs 30 days after the reactor was shut down for discharge of the last fuel batch. The best estimate assumes an accident that results in a Zircaloy fire that involves only the last fuel batch to be discharged, and that the accident occurs 90 days after the reactor was shut down. The source inventory was based on the Millstone 1 reactor as discussed in NUREG/CR-4982.[1] The release fractions were also based upon Reference 1. These are 100% of the noble gases, halogens, and alkali metals, a negligible release of lanthanides and actinides, 0.2% of the alkali earths and assorted releases of other isotopes from the fuel and cladding. The source was assumed to be released in one puff with a uniform particle size distribution and a deposition velocity of 0.01 m/s.

The Zion site was used to represent worst case conditions with respect to population density. Hence Zion data was combined with high source term assumptions to characterize 'worst case' consequences. MACCS sorts meteorological data into 29 categories (or bins) depending on rain, stability and wind speed. Four random samples from each bin are taken. This assures that weather sequences which can produce serious consequences are adequately represented (NUREG/CR-2239).[8] The population data for Zion were supplied by the NRC for 16 angular and 20 radial intervals out to 500 miles. Within 50 miles the population density is 860 people per square mile. The data also included the site-specific wind rose. The land fraction for intervals near Zion were obtained from the Zion FSAR and for large distances from a national map. For each grid element the appropriate state average land use and economic data current in 1980 was used.

For the best estimate calculations the Zion meteorology, and Illinois state average land use and economic data were employed in conjunction with a 95% land fraction uniform population density of 340 people per square mile (average of all U.S. nuclear power plant sites). Hence, this site data was employed in conjunction with the best estimate source term to evaluate best-estimate consequences. No planned evacuation was modeled since this has a small effect on the total cost and dose impact. However, people were assumed to be engaged in normal activities which provides some protection from the cloud shine, ground and inhalation dose pathways. Also people were relocated at one day if their projected ground shine dose in 7 days would exceed 25 rems. An additional dose limit over 30 years was set to 25 rems.

With this information the offsite costs and public dose impact were computed. The offsite costs include emergency actions, decontamination, interdiction, food disposal, and loss of use of farmland and residential areas. These costs do not include costs associated with health effects (see Table 3.2).

### 3.2.3 Occupational Exposure (Accidental)

Exposures for a major spent fuel pool accident were assumed to be similar to those associated with the TMI-2 accident. For this accident the estimated occupational radiation dose from cleanup was less than 4,580 man-rem.[5] This exposure is small compared to the potential offsite dose impact and more refined quantification appears to be unwarranted.

### 3.2.4 Onsite Property Damage

Economic risks from light water reactor (LWR) operation are dominated by onsite losses resulting from replacement power costs.[9] Severe accident risks also have significant contributions from plant monetary losses (i.e., repair and refurbishment) and plant decontamination.

The risk-dominant accident sequence as identified in Reference 1 involve: (1) failure of the pool due to seismic or load drop events resulting in a complete loss of water inventory, (2) Zircaloy fire initiation and propagation through the spent fuel assemblies stored in the pool, and (3) loss of containment integrity as the spent fuel pool building is breached. The consequences of these scenarios are expected to be similar to the Category II accident as defined in Reference 9, i.e., 50% clad melting and contamination. For this

case cleanup and decontamination costs are estimated to be approximately $165 million.[5] Outage times (5 to 7 years) are estimated from EPRI-NP-3380.[10] The costs for replacement of the spent fuel pool ($46 million for a 400 MT pool) and costs of permanent disposal of the damaged fuel ($26 million) are also estimated from EPRI-NP-3380.

The cost of replacement power can be approximated by

$$C = (0.13 * R + 0.12)10^6 \text{ \$/MW year}$$

where R is the fraction of replacement energy by oil fired or noneconomical power purchases for a given NERC (National Electric Reliability Council) region. This formula includes credit for the avoided variable fuel cycle cost of the shutdown reactor. For this study R = 0.41 was used as a best estimate (national average) and R = 0.9 was used for the worst case.[5] A plant capacity factor of 65% is factored into the above equation and a 1,000 MW generic plant was assumed.

The onsite costs are calculated from

$$U = \frac{(C_c + C_r + C_{rp})}{m} \frac{e^{-rt_i}}{r^2} (1 - e^{-r(t_f - t_i)})(1 - e^{-rm})$$

where U = present (1983) value of onsite property damage,
$C_c$ = cleanup and decontamination cost,
$C_r$ = repair, replacement of spent fuel pool, and disposal of damaged fuel cost,
$C_{rp}$ = replacement power cost,
$t_f$ = years remaining till end of reactor life, taken as 29.8,
$t_i$ = year plant starts operating ≡ 0.0,
r = discount rate (10%), and
m = years plant is out of service.

The values of U must be multiplied by the accident frequency and number of plants. U reflects the expected loss due to an accident. When U is multiplied by the accident frequency the result is the expected loss over a reactor life discounted to 1983 dollars. Table 3.3 summarizes these calculations.

### 3.2.5 Industry Implementation

#### 3.2.5.1 Spent fuel storage requirements

It has been assessed[1] that the risks of self-sustaining cladding oxidation for bundles in high density racks is confined to those that have been discharged from the core within the last two years. For plants with a reloading period of less than two years, the fuel with the greater likelihood of cladding oxidation initiation and propagation would be associated therefore with the last two reload batches. For plants with a reload period of two years or more, the higher-risk fuel would be confined to the last reload batch. Where two plants share a spent fuel pool and each has a reloading period of less than two years, the assumption of staggered reloading emplaces the last three reload batches entering the pool in the higher-risk category. Limited low-density reracking of spent fuel is a risk-reduction option that

involves maintenance of recently discharged fuel batches (i.e., discharged within the last two years) in a low-density configuration. This is a mitigative option in that, subsequent to an accident sequence leading to loss of cooling to the fuel, implementation of the option is intended to reduce radiological releases through obviating the onset of self-sustaining clad oxidation. Adopting the high density configuration as a base case, the degree of risk-reduction achieved through a limited low density racking option can be investigated.

The cost impact of this option involves, first, the cost associated with the installation of low density racks and, second, the incremental cost associated with altered additional storage requirements resulting from earlier exhaustion of the spent fuel pool capacity. To evaluate the latter cost, the time at which additional storage will be required and the degree of that storage must first be evaluated both in the base case and in the case for which limited low density racking is assumed. The costs associated with fulfulling these requirements must then be estimated.

Available spent fuel and fuel pool data have been collated for all U.S. operating PWR and BWR plants. Spent fuel management schemes have been developed for the low density racking option and of evaluating the modified storage requirements. The results are presented in Table 3.4, "Nuclear Power Plant Spent Fuel Storage Data."

Data needed for completion of this collation was assembled with the aid of the DOE document "Spent Fuel Storage Requirements 1987," DOE/RL-87-11 (Sept. 1987).[11] This document provides spent fuel storage inventories and capacities and utility estimates of future discharges from U.S. commercial nuclear reactors through the year 2005. Historical data through 1986 are presented, and projected discharge through the end of each reactor life are estimated.

Information relative to the low density storage option are reflected in Columns 12-15 of Table 3.4.

In estimating the storage capacity decrement of the storage pools, it was assumed that the fuel bundle packing area densities for PWR and BWR high density racks exceed the low density rack densities by factors of 4 and 3 respectively. These ratios were based on the inter-bundle spacing for high and low density racks. For PWRs, the bundle center to center spacing ranges from 10.5 to 13 inches for high density racks while for the low density racks the range is 18 to 22 inches, giving area ratios ranging from 2 to 4.4. For BWRs, these sizes are 6.5-8 inches for high density racks and 10-13 inches for low density racks, yielding area ratios of 1.5-4. A sample of spent fuel pool capacity expansion amendments[12] requested by licensees indicated that the average ratio of modified capacity to the initial capacity was about 3.5 for PWRs and 3.0 for BWRs. For many PWRs, however, the appropriate ratio was approximately 4 and, therefore, this value was assumed as the generic scaling factor.

Based on the pool storage capacity decrement due to conversion to low density configurations, the year in which the current pool storage space will become full (Column 13) and the additional storage space required to the end-of-life of the plants (Column 14) were adjusted relative to the base case.

The plants were classified into four groups based upon the year in which the additional storage space will be required. In the majority of the plants (denoted as X in Column 15), conversion to the low density option would result in a storage capacity that would not accommodate the current spent fuel pool inventory. In these plants, construction of additional storage space would need to begin concurrently with conversion to low density racking and, in certain cases, this additional space would need to be in a low density configuration to accommodate recent fuel discharges. Several plants, denoted Y in Column 15, have sufficient capacity to accommodate the low density racking requirements presently but this space may be exhausted in a time-frame shorter than that associated with construction of additional storage space.

In estimating the design, construction and licensing time for additional storage, the lead time estimates of Reference 10 were used.

Plants denoted Z in Column 15 would have no immediate need for additional storage in the low density racking option. Based upon the lead time estimates of Reference 10, the year in which construction procedures would need to be initiated is given in Column 15. One plant, denoted U, currently has sufficient storage space to the end-of-life even allowing for low density storage of the full core reserve and the last 2 reload batches.

It is reiterated that the approach adopted here to evaluate the modified storage requirements, given implementation of the limited low density racking option, is based upon a generic assessment of the relative packing densities of high and low density racks. No plant-specific variation in this ratio, nor factors associated with pool-specific geometries have been accounted for in the assessment. Further, the projected storage requirements are based upon the current maximum storage capacities provided in Reference 11. Offsite transshipments of fuel and onsite transfers were not accounted for unless the spent fuel pools are connected by some means as indicated in Table 3.4. These projections are anticipated to be sensitive to adjustment of the approximated pool capacities in Reference 11 and to transshipment assumptions.

3.2.5.2 Cost estimate

Cost estimate for replacing high-density storage racks with low-density racks for recently discharged fuel have been evaluated. Also the cost for required additional spent fuel storage capacity based on the storage requirement in Table 3.4 have been evaluated for four dry-storage concepts and for additional wet-pool storage. The cost estimates were broken down into two assumptions:

1. Wait until capacity is required.
2. Provide for required capacity now.

Various societal discount rates were selected (0, 5 and 10%) to show the sensitivity to the discount rate for future or delayed actions.

Costing data presented in EPRI NP-3380 provided the basis for the evaluation. This data were parameterized to facilitate calculations and involved:

1. Capital Costs.
2. Operation and Maintenance Costs (O&M).
3. Implementation time for design, licensing and construction (allowing for overlap).

The storage options selected for this study are shown in Table 3.5.

Reracking costs have been discussed in EPRI NP-3380 which involve construction and installation of high-density racks to replace low-density racks. This data pertained to three reracking options: low-density racks to borated stainless steel racks, low density to stainless steel racks and stainless steel to borated stainless steel racks.

The cost of conversion from high- to low-density racks per assembly space was approximated to be equal to the cost of the reracking options considered in the EPRI report. (Each cost per assembly was approximately equal for the three options considered.) Since these reracking costs were ultimately assessed to be typically one to two orders of magnitude less than the incremental cost of additional storage, this approximation did not introduce significant inaccuracies.

Operational and maintenance costs are incurred when the auxiliary storage capacity is put into operation. From then on these costs will be constant on an annual basis for the remaining life of the reactor. These costs have been estimated with the aid of EPRI NP-3380.

Table 3.6 summarizes the results of the cost assessments performed. For discount rates of 0%, 5% and 10%, the table displays the incremental cost of spent fuel storage to the end of plant use given conversion to limited low-density in-pool storage. The discounts are applied assuming that construction is initiated when required. Zero discount is equivalent to the assumption that construction is initiated immediately for each plant. The costs are averaged over LWR units and are provided in 1983 dollars. Data are provided for the five storage options outlined in Table 3.5. Unit-averaged costs are provided for each.

Additional statistics generated in the evaluation of the net incremental costs associated with the limited low-density storage of spent fuel are presented in Appendix A. They may be consulted for confirmation of the summary figure provided in Table 3.6. All costs are quoted in 1983 dollars. The tables contain the following information.

Table A1: The incremental cost of additional storage associated with limited low-density in-pool storage under 'build now' and 'build when needed' (10% discount rate) assumptions.

Tables A2-A6: Cost of additional storage assuming high-density and assuming limited low-density in-pool storage. Storage-type options: pool (Table 4), drywell (Table 5), vault (Table 6), cask (Table 7) and silo (Table 8). Evaluated at 0%, 5% and 10% discount rates.

Tables A2a-A6a: Assuming high-density in-pool storage, these tables provide a breakdown of additional storage costs into construction, and operation and maintenance components for each option.

Tables A2b-A6b: Assuming limited low-density in-pool storage, these tables provide a breakdown of additional storage costs into construction, and operation and maintenance costs for each option.

## 3.3 Value-Impact Assessment

### 3.3.1 Assumptions and Checklist for Identification of Affected Attributes

Table 3.7 summarizes the affected attributes of this study while Table 3.8 summarizes the quantification of the affected parameters. Following Reference 1, the mechanism for risk-reduction by the limited low-density reracking option is the reduction of the conditional probability of the initiation of self-sustaining Zircaloy clad oxidation given loss of pool water inventory. Hence an 80% (see Reference 1) reduction in sequence frequency is applied uniformly both to the seismic and the cask-drop categories of sequences to model the risk-reduction value of the option. It should be noted that an additional, potential risk-reduction mechanism associated with low-density racking is a mitigative nature and involves reduction of the potential radiological source term, given fuel degradation. Such an effect could be modeled in the 'worst case' conditions where participation of older fuel discharge in the clad fire is assumed. Since 80% sequence frequency reduction removes most of the risk (i.e., 80%) associated with the sequences, and Table 3.9 reveals that the cost impact of this option significantly outweighs its value, then the modeling of additional accident mitigative values of the option would not alter the cost/benefit insights.

### 3.3.2 Value/Impact Comparison

Table 3.9 presents a summary of the value-impact analysis. For the industrial cost of implementation, the best estimate uses the costs associated with the wet pool storage option while the high estimate utilized dry cask storage costs. Monetary attributes in Table 3.9 were expressed in 1983 dollars as well as 1988 dollars to account for the escalation of costs in this period. The cost escalation between 1983-1988 was assumed to be 9.8% (Reference 17).

The results indicate that the costs outweigh the benefits due primarily to the low probability of the accidents under consideration. An important factor is the probability of pool failure due to heavy load drops. Table 3.9 is predicated upon compliance with the guidelines which were developed for licensees to assure the safe handling of heavy loads.

These recommended guidelines include general rules for all facilities to reduce the potential for uncontrolled movement of a load or a load drop, such as by calling for: definition of safe load paths; development of load handling procedures, periodic inspection and testing of the crane; qualifications, training and specified conduct of the crane operator; and use of guidelines on rigging.

If these guidelines are not part of the standard operating procedures for a facility then plant-specific human reliability analyses may be warranted to characterize the value/impact properties of the current option.

### 3.3.3 Sensitivity Studies

The results presented in Table 3.9 are based on assumptions listed in Table 3.8. In Table 3.9 best estimate/worst case evaluations are presented. However, other parameters might be varied to investigate the sensitivity of these parameters to the final results. Those parameters include:

1. Pool Failure Probability,
2. Discount Rate,
3. Monetary Conversion of Health Effects,
4. Plant Site Economics,
5. Meteorology, and
6. Industrial Implementation.

The sensitivity of the value-impact assessment to variations in each of these parameters is examined below and the results are summarized in Table 3.10.

1. Pool Failure Probability

There is a large uncertainty in the risks associated with the structural failure of the spent fuel pool. It is significantly dependent upon the magnitude of the probability of pool failure due to seismic events and the probability of a cask drop induced pool failure. Since the risk-reduction impact of low-density reracking is effected through reduction in the frequency of all pool drainage sequences by a multiplicative factor, then any fractional increase in the assumed frequencies of the sequences is reflected by the same factorial increase in the risk-reduction value of reracking. For example, if the base frequency of pool drainage sequences is increased by a factor of 100, then the risk-reduction value of reracking is increased by a factor of 100 also. Hence, in the high risk-reduction estimate case (Zion demography and high source term), increasing the assumed frequency of pool drainage sequences by an order of magnitude results in a benefit/cost ratio of 3.5.

2. Discount Rate

The baseline assumption for the discount rate was 10%. The effect of changing the discount rate can be seen by using a 5% rate. The affected attributes are offsite and onsite property costs as well as industrial implementation. Public dose reduction is not affected since it is not discounted in accordance with the guidelines of Reference 5. The impact of a change in discount rate is relatively small. The best estimate net benefit would remain somewhat the same since both benefits and costs increase. The best estimate benefit/cost ratio decreases to 0.028 from 0.035.

3. Monetary Conversion of Health Effects

A major difficulty in the net-benefit method is the evaluation of health effects in monetary units. The sensitivity of this particular analysis to that evaluation can be demonstrated by substituting values of $500 and $2,000 per person-rem averted instead of $1,000 per person-rem. The ratio estimates (public dose reduction/$10$^6$ cost) are not affected by these variations. Revised best estimates of the net-benefit are $-1.35E9 and $-1.29E9 for $500 and

$2,000 conversion respectively relative to the net-benefit of $-1.33E9 associated with the $1,000 conversion factor.

4. Plant-Site Economics

The baseline calculations adopted the economic factors of the surrounding area of the Zion plant site as a best estimate. However, the economic value of land at the Zion site is somewhat higher than that of the U.S. average. The impact of the economics of the area surrounding the plant site was assessed by recalculating the offsite consequence attributes using the economy of West Virginia as input to the MACCS code.[6] The economy of the West Virginia site is considered to be much below the national average. The results indicated that site economics do not impact the cost benefit ratio significantly since it may be seen from Table 3.9 that dollar-converted health effects exceed economic risk by an order of magnitude.

5. Meteorology

The baseline calculations employed Zion weather conditions. Several additional severe accident calculations indicated that varying weather models caused only a small change in the public health/offsite consequences.

6. Industrial Implementation

The incremental costs associated with spent fuel storage construction costs and overhead/maintenance is known quite accurately as indicated in Reference 10. Therefore, the sensitivity to industrial implementation was not investigated.

Table 3.10 displays the results of the sensitivity studies. It can be seen that the net benefit is quite sensitive to the spent fuel pool failure probability and to a lesser degree sensitive to the monetary conversion of health effects. The net benefits are less sensitive to discount rate, economics, and meteorology of the plant site.

Table 3.1 Estimated Risks From Spent Fuel Pool Fires

| Event | Probability | |
|---|---|---|
| | PWR Plant | BWR Plant |
| Structural Failure of Pool Resulting from Seismic Events | 1.8E-6/Ry* | 6.7E-6/Ry |
| Probability of a Cask Drop Caused by Human Error | 3.1E-4/Ry | 3.1E-4/Ry |
| Reduction in Failure Rate for Cask Drop Implementing Generic Issue A-36 | 1.0E-3 | 1.0E-3 |
| Conditional Probability of Pool Structural Failure Given a Cask Drop | 1.0 | 1.0 |
| Conditional Probability of a Clad Fire Given a Pool Structural Failure** | 1.0 | 0.25 |
| Frequency of Spent Fuel Pool Fire from Seismic Initiator | 1.8E-6/Ry | 1.68E-6/Ry |
| Frequency of Spent Fuel Pool Fire from a Cask Drop Initiator | 3.1E-7/Ry | 7.75E-8/Ry |

*Ry = Reactor year.
**NUREG/CR-4982, p. 75.

Table 3.2 Offsite Consequence Calculations

| Case | Characterization | Source Term* | Population | Public Health Dose (person-rem) | Offsite Property Damage ($1983) |
|---|---|---|---|---|---|
| 1 | Average Case | Last fuel discharged 90 days after discharge | 340 persons/ $mile^2$ | $7.97 \times 10^6$ | $3.41 \times 10^9$ |
| 2 | Worst Case | Entire pool inventory 30 days after discharge | Zion population (roughly 860 $persons/mile^2$) | $2.56 \times 10^7$ | $2.62 \times 10^{10}$ |

*From NUREG/CR-4982.

Table 3.3 Onsite Property Damage Costs Per Accident ($)

| Item | Best Estimate | Worst Case |
|---|---|---|
| Cleanup and Decontamination | 1.65E8 | 1.65E8 |
| Repair | 7.2E7 | 7.2E7 |
| Replacement Power | 8.67E8 | 1.66E9 |
| Total Number of Operating Years Remaining | 29.8 years | 29.8 years |
| Number of Years Plant is Out of Service | 5 years | 7 years |
| Expected Dollar Loss | 8.24E9 | 1.29E10 |

TABLE 3.4 Nuclear Power Plant Spent Fuel Storage Data(a)

| | PLANT NAME | TYPE (d) | STARTUP YEAR | SHUTDOWN YEAR | FULL CORE (e) | RE-LOAD (e) | FUEL CYCLE (MON.) | INV. 1986 (e) | CURRENT RACK CONF MAX. CAP. (b)(e) | CURRENT RACK CONF FILLUP YEAR (f) | CURRENT RACK CONF ADD. STORAGE REQ. (e)(g) | MODIFIED CONF(c) MAX. CAP. (e)(h) | MODIFIED CONF(c) FILLUP YEAR (f) | MODIFIED CONF(c) ADD. STORAGE REQ. (e)(g) | CLASSIFICATION (i) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ARK NUCLEAR 1 | P | 1974 | 2008 | 177 | 60 | 18 | 448 | 988 | 1998 | 377 | 608(120) | (k) | 737 | X |
| | ARK NUCLEAR 2 | P | 1980 | 2012 | 177 | 68 | 18 | 288 | 988 | 1999 | 585 | 580(136) | 1989 | 973 | Y |
| | BEAVER VALLEY 1 | P | 1976 | 2016 | 157 | 69 | 18 | 283 | 833 | 1998 | 863 | 419(138) | (k) | 1267 | X |
| | BEAVER VALLEY 2 | P | 1987 | 2026 | 157 | 73 | 18 | 0 | 1088 | 2009 | 858 | 850(146) | 2000 | 1298 | Z(1998) |
| | BELLEFONTE 1 | P | 1992(j) | 2028 | 205 | 84 | 18 | 0 | 1068 | 2009 | 1900 | 554(168) | 2000 | 2404 | Z(1998) |
| | BELLEFONTE 2 | P | 1995(j) | 2030 | 205 | 84 | 18 | 0 | 1068 | 2011 | 1900 | 554(168) | 2002 | 2404 | Z(1998) |
| | BIG ROCK 1 | B | 1965 | 2001 | 84 | 20 | 12 | 188 | 441 | 1995 | 95 | 381( 40) | 1992 | 176 | Y |
| A | BRAIDWOOD 1 | P | 1987 | 2026 | 193 | 84 | 18 | 0 | 1050 | 1998 | 3627 | 294(252) | 1990 | 4383 | Y(p) |
| A | BRAIDWOOD 2 | P | 1988 | 2027 | 193 | 84 | 18 | 0 | (m) | (n) | (m) | (m) | 1990 | (m) | Y(p) |
| B | BROWNS FERRY 1 | B | 1974 | 2014 | 764 | 228 | 20 | 1328 | 3471 | 2002 | 3228 | 5574(684) | 1998 | 4594 | Z(1994) |
| B | BROWNS FERRY 2 | B | 1976 | 2014 | 764 | 228 | 20 | 1192 | 3471 | (n) | (m) | (m) | 1998 | (m) | Z(1994) |
| | BROWNS FERRY 3 | B | 1977 | 2017 | 764 | 228 | 20 | 1004 | 3471 | 2001 | 2441 | 2659(456) | 1995 | 3353 | Z(1991) |
| | BRUNSWICK 1 | B | 1977 | 2010 | 560 | 188 | 18 | 840 | 1803 | 1990 | 2401 | 1051(376) | (k) | 3153 | X |
| | | P(u) | | | | 0 | | 160 | 160 | | | | | | |
| | BRUNSWICK 2 | B | 1975 | 2010 | 560 | 188 | 18 | 756 | 1839 | 1991 | 2281 | 1087(376) | (k) | 3033 | X |
| | | P(u) | | | | 0 | | 144 | 144 | | | | | | |
| A | BYRON 1 | P | 1985 | 2024 | 193 | 88 | 18 | 0 | 1050 | 1994 | 3627 | 264(264) | (k) | 4413 | X(p) |
| A | BYRON 2 | P | 1987 | 2026 | 193 | 88 | 18 | 0 | (m) | (n) | (m) | (m) | (k) | (m) | X(p) |
| | CALLAWAY 1 | P | 1984 | 2024 | 193 | 84 | 18 | 84 | 1340 | 2005 | 1129 | 838(168) | 1998 | 1633 | Z(1992) |
| B | CALVERT CLF 1 | P | 1975 | 2014 | 217 | 96 | 24 | 618 | 830 | 1992 | 2213 | 1254(192) | (k) | 2789 | X |
| B | CALVERT CLF 2 | P | 1977 | 2016 | 217 | 96 | 24 | 432 | 1000 | (n) | (m) | (m) | (k) | (m) | X |
| | CATAWBA 1 | P | 1985 | 2025 | 193 | 72 | 15 | 84 | 2615 | 2025 | 0 | 2183(144) | 2021 | 228 | Z(2017) |
| | CATAWBA 2 | P | 1986 | 2026 | 193 | 72 | 15 | 0 | 2615 | 2026 | 0 | 2183(144) | 2023 | 210 | Z(2019) |
| | CLINTON 1 | B | 1987(j) | 2027 | 624 | 172 | 18 | 0 | 2672 | 2006 | 2572 | 1984(344) | 2000 | 3260 | Z(1998) |
| B | COMANCHE PK 1 | P | 1989 | 2030 | 193 | 66 | 12 | 0 | 1695 | 2015 | 2087 | 2788(198) | 2010 | 2661 | Z(2006) |
| B | COMANCHE PK 2 | P | 1989 | 2030 | 193 | 66 | 12 | 0 | 1687 | (n) | (m) | (m) | 2010 | (m) | Z(2006) |
| A | COOK 1 | P | 1975 | 2009 | 193 | 80 | 18 | 546 | 2270 | 1998 | 1241 | 1502(256) | 1991 | 2009 | Y |
| A | COOK 2 | P | 1978 | 2009 | 193 | 88 | 18 | 424 | (m) | (n) | (m) | (m) | 1991 | (m) | Y |
| | COOPER STN | B | 1974 | 2008 | 548 | 116 | 12 | 648 | 2368 | 1997 | 1238 | 1902(232) | 1993 | 1702 | Z(1989) |
| | CRYSTAL RVR 3 | P | 1977 | 2016 | 177 | 72 | 24 | 302 | 1157 | 2005 | 432 | 941( 72) | 1999 | 648 | Z(1995) |
| | DAVIS-BESSE 1 | P | 1978 | 2017 | 177 | 60 | 18 | 197 | 735 | 1995 | 2490 | 375(120) | 1988 | 2850 | X |
| | DIABLO CANYON 1 | P | 1985 | 2025 | 193 | 85 | 24 | 51 | 1324 | 2011 | 517 | 1069( 85) | 2006 | 772 | Z(2001) |
| | DIABLO CANYON 2 | P | 1988 | 2025 | 193 | 85 | 24 | 0 | 1324 | 2011 | 517 | 1069( 85) | 2006 | 772 | Z(2001) |
| | DRESDEN 1 | B | 1960 | 1984 | 464 | 0 | - | 683 | 720 | | 0 | | | | CLOSED |
| | DRESDEN 2 | B | 1970 | 2008 | 724 | 168 | 18 | 1606 | 3537 | 1998 | 1015 | 2905(316) | 1992 | 1647 | Y |
| | DRESDEN 3 | B | 1971 | 2006 | 724 | 168 | 18 | 1456 | 3537 | 2000 | 693 | 2905(316) | 1994 | 1325 | Z(1990) |
| | DUANE ARNOLD | B | 1975 | 2010 | 368 | 128 | 18 | 696 | 2050 | 1999 | 998 | 1538(256) | 1991 | 1510 | Y |
| | ENRICO FERMI 2 | B | 1987(j) | 2025 | 764 | 276 | 20 | 0 | 2305 | 1997 | 5365 | 1201(552) | 1998 | 6459 | Y |
| | FARLEY 1 | P | 1977 | 2012 | 157 | 68 | 18 | 410 | 1407 | 2006 | 298 | 999(136) | 1997 | 708 | Z(1993) |
| | FARLEY 2 | P | 1981 | 2012 | 157 | 68 | 18 | 268 | 1407 | 2008 | 140 | 999(136) | 1999 | 548 | Z(1995) |
| | FITZPATRICK | B | 1975 | 2015 | 560 | 180 | 18 | 1012 | 2854 | 1997 | 2246 | 2134(360) | 1991 | 2968 | Y |
| | FORT CALHOUN | P | 1973 | 2008 | 133 | 45 | 18 | 334 | 729 | 1994 | 413 | 459( 90) | (k) | 683 | X |
| | FT ST VRAIN | G | 1979 | 2007 | 1482 | 240 | 24 | 0 | 504 | | | (240) | | | X |
| | GINNA | P | 1970 | 2008 | 121 | 32 | 12 | 470 | 1016 | 2000 | 219 | 824( 64) | 1994 | 411 | Z(1990) |
| | GRAND GULF 1 | B | 1985 | 2022 | 800 | 268 | 18 | 264 | 3124 | 1998 | 4392 | 2052(536) | 1992 | 5464 | Y |
| | HADDAM NECK | P | 1968 | 2007 | 157 | 52 | 18 | 594 | 1168 | 1997 | 319 | 856(104) | 1998 | 631 | Y |
| | HARRIS 1 | P | 1987(j) | 2026 | 157 | 52 | 18 | 0 | 3351 | 2026 | 0 | 3039(104) | 2026 | 0 | U |
| | | B(v) | | | | 0 | - | 0 | 2057(w) | - | - | | | | |
| B | HATCH 1 | B | 1974 | 2009 | 560 | 196 | 18 | 1107 | 3181 | 2000 | 2874 | 4850(588) | 1998 | 4050 | Z(1992) |
| B | HATCH 2 | B | 1979 | 2012 | 560 | 196 | 18 | 745 | 2845 | (n) | (m) | (m) | 1998 | (m) | Z(1992) |
| | HOPE CREEK | B | 1987(j) | 2026 | 764 | 232 | 18 | 0 | 3976 | 2007 | 2620 | 3048(464) | 2001 | 3748 | Z(1997) |
| | HUMBOLDT BAY | B | 1963 | 1976 | 184 | 0 | - | 390 | 486 | - | 0 | | | | CLOSED |

TABLE 3.4 Nuclear Power Plant Spent Fuel Storage Data(a)(cont'd)

| | PLANT NAME | TYPE (d) | STARTUP YEAR | SHUTDOWN YEAR | FULL CORE (e) | RE-LOAD (e) | FUEL CYCLE (MON.) | INV. 1986 (e) | CURRENT RACK CONF MAX. CAP. (b)(e) | CURRENT RACK CONF FILLUP YEAR (f) | CURRENT RACK CONF ADD. STORAGE REQ. (e)(g) | MODIFIED CONF(c) MAX. CAP. (e)(h) | MODIFIED CONF(c) FILLUP YEAR (f) | MODIFIED CONF(c) ADD. STORAGE REQ. (e)(g) | CLASSIFICATION (i) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | INDIAN PT 1 | P | 1962 | 1980 | 120 | 0 | - | 160 | 756 | - | 0 | | | | CLOSED |
| | INDIAN PT 2 | P | 1974 | 2006 | 193 | 68 | 18 | 464 | 980 | 1994 | 493 | 572(136) | (k) | 901 | X |
| | INDIAN PT 3 | P | 1976 | 2015 | 193 | 76 | 18 | 292 | 1317 | 2004 | 536 | 861(152) | 1994 | 992 | Z(1990) |
| | KEWAUNEE | P | 1974 | 2014 | 121 | 37 | 12 | 369 | 963 | 1999 | 579 | 741( 74) | 1993 | 801 | Z(1989) |
| | LACROSSE | B | 1969 | 2002 | 72 | 24 | 12 | 261 | 440 | 1992 | 205 | 344( 48) | 1987 | 301 | X |
| B | LASALLE CTY 1 | B | 1982 | 2022 | 764 | 220 | 18 | 132 | 1080 | 1990 | 9824 | 840(660) | (k) | 11144 | X(p) |
| B | LASALLE CTY 2 | B | 1984 | 2023 | 764 | 220 | 18 | 0 | 1080 | (n) | (m) | (m) | (k) | (m) | X(p) |
| | LIMERICK 1 | B | 1986 | 2024 | 764 | 224 | 18 | 0 | 2040 | 1995 | 4098 | 1144(448) | 1988 | 4992 | X |
| | LIMERICK 2 | B | 1990 | 2029 | 764 | 220 | 18 | 0 | 2040 | 1998 | 4236 | 1160(440) | 1991 | 5116 | Y |
| | MAINE YANKEE | P | 1972 | 2008 | 217 | 73 | 18 | 793 | 1476 | 1996 | 632 | 1038(146) | 1987 | 1070 | X |
| | MCGUIRE 1 | P | 1981 | 2021 | 193 | 72 | 15 | 219 | 1463 | 2005 | 965 | 1031(144) | 1997 | 1397 | Z(1993) |
| | MCGUIRE 2 | P | 1984 | 2023 | 193 | 72 | 15 | 186 | 1463 | 2006 | 969 | 1031(144) | 1998 | 1421 | Z(1994) |
| | MILLSTONE 1 | B | 1970 | 2010 | 580 | 196 | 24 | 1536 | 2184 | 1987 | 2480 | 1792(196) | (k) | 2872 | X |
| | MILLSTONE 2 | P | 1975 | 2015 | 217 | 68 | 18 | 474 | 1112 | 1997 | 823 | 644(156) | (k) | 1291 | X |
| | MILLSTONE 3 | P | 1986 | 2025 | 193 | 84 | 18 | 0 | 1836 | 2016 | 541 | 1332(168) | 2007 | 1045 | Z(2003) |
| | MONTICELLO | B | 1971 | 2007 | 484 | 120 | 18 | 428 | 2237 | 2004 | 855 | 1757(240) | 1998 | 835 | Z(1994) |
| | NINE MILE PT 1 | B | 1969 | 2005 | 532 | 184 | 24 | 1444 | 2776 | 1996 | 884 | 2408(184) | 1990 | 1252 | Y |
| | NINE MILE PT 2 | B | 1987 | 2026 | 764 | 276 | 24 | 0 | 4049 | 2011 | 1971 | 3497(276) | 2007 | 2533 | Z(2003) |
| A | NORTH ANNA 1 | P | 1978 | 2018 | 157 | 65 | 18 | 294 | 1737 | 1999 | 1866 | 1152(195) | 1992 | 2451 | Y |
| A | NORTH ANNA 2 | P | 1980 | 2020 | 157 | 65 | 18 | 235 | 0 | (n) | (m) | (m) | 1992 | (m) | Y |
| A | OCONEE 1 | P | 1973 | 2013 | 177 | 60 | 18 | 590 | 1312 | 1989 | 2102 | 772(180) | (k) | 2641 | X |
| A | OCONEE 2 | P | 1974 | 2013 | 177 | 60 | 18 | 381 | 0 | (n) | (m) | (m) | (k) | (m) | X |
| | OCONEE 3 | P | 1974 | 2014 | 177 | 60 | 18 | 529 | 825 | 1991 | 1021 | 465(120) | (k) | 1381 | X |
| | OYSTER CRK 1 | B | 1969 | 2004 | 560 | 128 | 18 | 1392 | 2600 | 1994 | 912 | 2088(256) | 1989 | 1424 | Y |
| | PALISADES | P | 1971 | 2011 | 204 | 68 | 24 | 545 | 798 | 1988 | 835 | 594( 68) | (k) | 1039 | X |
| | PALO VERDE 1 | P | 1986 | 2024 | 241 | 85 | 18 | 0 | 1329 | 2005 | 1117 | 819(170) | 1996 | 1627 | Z(1992) |
| | PALO VERDE 2 | P | 1986 | 2025 | 241 | 85 | 18 | 0 | 1329 | 2006 | 1121 | 819(170) | 1997 | 1631 | Z(1993) |
| | PALO VERDE 3 | P | 1987 | 2026 | 241 | 85 | 18 | 0 | 1329 | 2007 | 1121 | 819(170) | 1998 | 1631 | Z(1994) |
| | PEACHBOTTOM 2 | B | 1974 | 2008 | 764 | 228 | 18 | 1462 | 3814 | 1997 | 1812 | 2902(456) | 1991 | 2724 | Y |
| | PEACHBOTTOM 3 | B | 1974 | 2008 | 764 | 220 | 18 | 1496 | 3819 | 1997 | 1589 | 2939(440) | 1991 | 2469 | Y |
| | PERRY 1 | B | 1987 | 2026 | 748 | 224 | 18 | 0 | 4020 | 2009 | 2548 | 3124(448) | 2003 | 3444 | Z(1999) |
| | PILGRIM 1 | B | 1972 | 2008 | 580 | 192 | 24 | 1320 | 2320 | 1993 | 1512 | 1936(192) | 1988 | 1896 | X |
| A | POINT BEACH 1 | P | 1970 | 2007 | 121 | 32 | 12 | 446 | 1502 | 1995 | 849 | 1214( 96) | 1990 | 1137 | Y |
| A | POINT BEACH 2 | P | 1972 | 2008 | 121 | 32 | 12 | 408 | (m) | (n) | (m) | (m) | 1990 | (m) | Y |
| A | PRAIRIE ISL 1 | P | 1973 | 2008 | 121 | 40 | 12 | 386 | 1386 | 1993 | 1142 | 1026(120) | 1988 | 1502 | X |
| A | PRAIRIE ISL 2 | P | 1974 | 2008 | 121 | 40 | 12 | 415 | (m) | (n) | (m) | (m) | 1988 | (m) | X |
| B | QUAD CITIES 1 | B | 1973 | 2007 | 724 | 160 | 18 | 1393 | 3657 | 2005 | 503 | 6594(480) | 2002 | 1463 | Z(1998) |
| B | QUAD CITIES 2 | B | 1973 | 2007 | 724 | 160 | 18 | 1428 | 3897 | (n) | (m) | (m) | 2002 | (m) | Z(1998) |
| | RANCHO SECO 1 | P | 1975 | 2008 | 177 | 69 | 18 | 267 | 1080 | 2004 | 228 | 666(138) | 1992 | 640 | Y |
| | ROBINSON 2 | P(u) | 1971 | 2007 | 157 | 48 | 16 | 270 | 544 | 1990 | 668 | 256( 96) | (k) | 956 | X |
| | RVR BEND 1 | B | 1986 | 2025 | 624 | 192 | 18 | 0 | 3172 | 2007 | 2452 | 2404(384) | 2001 | 3220 | Z(1997) |
| | SALEM 1 | P | 1977 | 2016 | 193 | 80 | 18 | 344 | 1170 | 1997 | 1007 | 690(160) | 1989 | 1487 | Y |
| | SALEM 2 | P | 1981 | 2020 | 193 | 84 | 18 | 174 | 1170 | 2001 | 1163 | 666(168) | 1992 | 1667 | Y |
| E | SAN ONOFRE 1 | P | 1968 | 1999 | 157 | 52 | 24 | 146 | 216 | 1995 | 2362 | 1006(270) | 1989 | 3172 | Y |
| E | SAN ONOFRE 2 | P | 1983 | 2012 | 217 | 109 | 24 | 147 | 800 | (n) | (m) | (m) | 1989 | (m) | Y |
| E | SAN ONOFRE 3 | P | 1984 | 2013 | 217 | 109 | 24 | 147 | 800 | (n) | (m) | (m) | 1989 | (m) | Y |
| | SEABROOK 1 | P | 1987(j) | 2031 | 193 | 64 | 15 | 0 | 1236 | 2008 | 1261 | 852(128) | 2000 | 1645 | Z(1996) |
| A | SEQUOYAH 1 | P | 1981 | 2021 | 193 | 80 | 18 | 212 | 1381 | 1995 | 2680 | 661(240) | 1989 | 3400 | Y |
| A | SEQUOYAH 2 | P | 1982 | 2022 | 193 | 80 | 18 | 136 | (m) | (n) | (m) | (m) | 1989 | (m) | Y |
| | SHOREHAM | B | 1988(j) | 2027 | 560 | 184 | 18 | 0 | 2685 | 2008 | 2635 | 1949(368) | 2000 | 3371 | Z(1996) |
| | SOUTH TEXAS 1 | P | 1987 | 2027 | 193 | 52 | 12 | 0 | 1969 | 2023 | 258 | 1657(104) | 2017 | 570 | Z(2013) |
| | SOUTH TEXAS 2 | P | 1989 | 2028 | 193 | 52 | 12 | 0 | 1969 | 2024 | 258 | 1657(104) | 2018 | 570 | Z(2014) |

TABLE 3.4 Nuclear Power Plant Spent Fuel Storage Data(a)(cont'd)

| | PLANT NAME | TYPE (d) | STARTUP YEAR | SHUTDOWN YEAR | FULL CORE (e) | RE-LOAD (e) | FUEL CYCLE (MON.) | INV. 1988 (e) | CURRENT RACK CONF MAX. CAP. (b)(e) | CURRENT RACK CONF FILLUP YEAR (f) | CURRENT RACK CONF ADD. STORAGE REQ. (e)(g) | MODIFIED CONF(c) MAX. CAP. (e)(h) | MODIFIED CONF(c) FILLUP YEAR (f) | MODIFIED CONF(c) ADD. STORAGE REQ. (e)(g) | CLASSIFICATION (i) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ST LUCIE 1 | P | 1976 | 2016 | 217 | 76 | 18 | 444 | 728 | 1987 | 1182 | 272(152) | (k) | 1638 | X(p) |
| | ST LUCIE 2 | P | 1983 | 2023 | 217 | 72 | 18 | 164 | 1076 | 2001 | 1126 | 644(144) | 1992 | 1558 | Y |
| | SUMMER 1 | P | 1984 | 2024 | 157 | 68 | 18 | 112 | 1276 | 2008 | 761 | 868(136) | 1999 | 1169 | Z(1995) |
| A | SURRY 1 | P | 1972 | 2012 | 157 | 53 | 18 | 488 | 1044 | 2012 | 97 | 2331(159) | 2005 | 574 | Z(2001) |
| A | SURRY 2 | P | 1973 | 2013 | 157 | 53 | 18 | 385 | 1764(y) | (n) | (m) | (m) | 2005 | (m) | Z(2001) |
| B | SUSQUEHANNA 1 | B | 1983 | 2022 | 764 | 232 | 18 | 488 | 2840 | 2000 | 7288 | 4288(696) | 1995 | 8680 | Z(1991) |
| B | SUSQUEHANNA 2 | B | 1985 | 2024 | 764 | 232 | 18 | 324 | 2840 | (n) | (m) | (m) | 1995 | (m) | Z(1991) |
| | THREE MILE ISL 1 | P | 1974 | 2003 | 177 | 73 | 18 | 284 | 1401(x) | 2008 | 75 | 963(146) | 1997 | 613 | Z(1993) |
| | TROJAN | P | 1976 | 2011 | 193 | 48 | 12 | 379 | 1408 | 2004 | 373 | 1120( 98) | 1998 | 681 | Z(1994) |
| E | TURKEY PT 3 | P | 1972 | 2007 | 157 | 48 | 18 | 424 | 1484 | 2002 | 384 | 1608(144) | 1995 | 816 | Z(1991) |
| E | TURKEY PT 4 | P | 1973 | 2007 | 157 | 48 | 18 | 448 | 636 | (n) | (m) | (m) | 1995 | (m) | Z(1991) |
| B | VOGTLE 1 | P | 1987 | 2027 | 193 | 84 | 18 | 0 | 1117(x) | 2006 | 2495 | 1478(252) | 2000 | 3251 | Z(1998) |
| B | VOGTLE 2 | P | 1988 | 2028 | 193 | 84 | 18 | 0 | 1117(x) | (n) | (m) | (m) | 2000 | (m) | Z(1998) |
| | VT YANKEE 1 | B | 1972 | 2012 | 368 | 132 | 18 | 1322 | 2870 | 1999 | 1068 | 2342(264) | 1993 | 1598 | Z(1989) |
| | WASH NUCLEAR 2 | B | 1984 | 2023 | 764 | 156 | 12 | 128 | 2658 | 1998 | 4018 | 2034(312) | 1994 | 4642 | Z(1990) |
| | WATERFORD 3 | P | 1985 | 2024 | 217 | 88 | 18 | 92 | 1388 | 2006 | 1148 | 838(176) | 1997 | 1671 | Z(1993) |
| A | WATTS BAR 1 | P | 1989(j) | 2025 | 193 | 80 | 18 | 0 | 1294 | 2001 | 2891 | 574(240) | 1994 | 3411 | Z(1990) |
| A | WATTS BAR 2 | P | 1990(j) | 2027 | 193 | 80 | 18 | 0 | (m) | (n) | (m) | (m) | 1994 | (m) | Z(1990) |
| | WOLF CREEK 1 | P | 1985 | 2025 | 193 | 76 | 18 | 52 | 1340 | 2008 | 857 | 884(152) | 1999 | 1313 | Z(1995) |
| | YANKEE-ROWE 1 | P | 1961 | 2001 | 76 | 38 | 18 | 341 | 721 | 1999 | 38 | 493( 76) | 1990 | 284 | Y |
| A | ZION 1 | P | 1973 | 2008 | 193 | 72 | 18 | 574 | 2079 | 1995 | 1295 | 1431(216) | 1988 | 1943 | X |
| A | ZION 2 | P | 1974 | 2008 | 193 | 72 | 18 | 503 | (m) | (n) | (m) | (m) | 1988 | (m) | X |



A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) UTILITY DATA AS OF 12/31/1988 (Reference DOE/RL-87-11)
(b) PROJECTED MAXIMUM CAPACITY USING CURRENTLY LICENSED TECHNOLOGY(i.e.,HIGH DENSITY RERACKING)
(c) BASED ON THE CONVERSION OF POOLS TO LOW DENSITY RACKS FOR THE FUEL LESS THAN 2 YEARS OLD.
(d) P=PWR, B=BWR, G=HTGR
(e) UNIT IN NUMBER OF ASSEMBLIES
(f) YEAR WHEN THE STORAGE SPACE RUNS OUT AT THE PLANT SITE. FULL CORE RESERVE(FCR) ASSUMED.
(g) ADDITIONAL STORAGE REQUIRED TO THE END-OF-LIFE OF THE PLANTS. FCR ASSUMED.
(h) NUMBERS IN () INDICATE LOW DENSITY RACKS NEEDED TO ACCOMODATE FUEL LESS THAN 2 YEARS OLD.
(i) CLASSIFICATION OF PLANTS ACCORDING TO ADDITIONAL STORAGE NEED (AS OF 1988).
  X PLANTS WHICH CURRENTLY NEED ADDITIONAL STORAGE SPACE WHEN POOLS ARE CONVERTED TO LOW DENSITY.
  Y PLANTS WHICH CURRENTLY HAVE SPACE BUT WHOSE SPACE WILL RUN OUT BEFORE CONSTRUCTION OF ADDITIONAL SPACE WHEN POOLS ARE CONVERTED TO LOW DENSITY RACKS (CONSTRUCTION TIME BASED ON THE CASK OPTION.)
  Z PLANTS WHICH CURRENTLY HAVE SUFFICIENT SPACE BUT EVENTUALLY NEED CONSTRUCTION OF ADDITIONAL SPACE WHEN POOLS ARE CONVERTED TO LOW DENSITY RACKS( NUMBERS IN () INDICATE THE YEAR WHEN CONSTRUCTION OF ADDITIONAL STORAGE SPACE SHOULD BEGIN - BASED ON THE CASK STORAGE METHOD.)
  U PLANTS WHICH HAVE SUFFICIENT SPACE UNTIL END-OF-LIFE OF THE PLANT.
(j) STARTUP DATE BASED ON PROJECTED YEAR OF FIRST DISCHARGE.
(k) NEED ADDITIONAL STORAGE SPACE AS OF 1988.
(m) INCLUDED IN UNIT 1
(n) SAME AS UNIT 1
(p) NO SPACE IN THE POOL FOR FCR+FUEL LESS THAN 2 YEARS OLD WHEN CONVERTED TO LOW-DENSITY CONFIGURATION.

TABLE 3.4 Nuclear Power Plant Spent Fuel Storage Data(a)(cont'd)

(u) SOME ROBINSON 2 PWR FUEL IS STORED AT THE BRUNSWICK (BWR) REACTOR SITE.
(v) IN 1985, HARRIS 1 IDENTIFIED SPACE FOR THE FUTURE STORAGE OF BWR FUEL. (HARRIS 1 IS A PWR.)
(w) CAN BE CONVERTED TO PWR STORAGE IF NECESSARY.
(x) THIS NUMBER IS NOT EXPLICITLY GIVEN BY THE UTILITY. MAXIMUM CAPACITY WAS DERIVED FROM UTILITY'S STATEMENT REGARDING THE TIME WHEN THE STORAGE SPACE RUNS OUT.
(y) INCLUDES STORAGE CAPACITY OF DRY STORAGE INSTALLATION (ISFSI).

Table 3.5 Storage Options

| Number | Storage Option | Special Condition |
|---|---|---|
| 1 | Wet-Pool | |
| 2 | Drywell | |
| 3 | Vault | Fuel is Canned |
| 4 | Cask | 10 MTU Cask |
| 5 | Silo | |

Table 3.6 Incremental Storage Costs Associated With Limited Low-Density Racking in the Primary Pool (1983 Dollars)

| STORAGE OPTION | PER UNIT | | | ALL PLANTS | | |
|---|---|---|---|---|---|---|
| | 0%* | 5% | 10% | 0%* | 5% | 10% |
| POOL | 2.17+7 | 1.67+7 | 1.28+7 | 2.34+9 | 1.80+9 | 1.38+9 |
| DRYWELL | 9.13+6 | 8.24+6 | 6.85+6 | 9.86+8 | 8.90+8 | 7.40+8 |
| VAULT | 2.07+7 | 1.67+7 | 1.28+7 | 2.24+9 | 1.80+9 | 1.38+9 |
| CASK | 1.20+7 | 1.22+7 | 1.05+7 | 1.30+9 | 1.32+9 | 1.13+9 |
| SILO | 1.56+7 | 1.22+7 | 9.35+6 | 1.68+9 | 1.32+9 | 1.01+9 |

*Zero % discount rate corresponds to the case where additional storage capacity is built now.

Notes:
1. These costs include the cost of in-pool reracking and the incremental costs associated with the change in additional storage requirements resulting from the decrease in primary pool capacity.
2. Assuming the extra storage capacity is built when required, two discount rates are applied.

Table 3.7 Checklist for Identification of Affected Attributes

| | ATTRIBUTE | QUANTIFIED | UNAFFECTED |
|---|---|---|---|
| 1. | Public Health | X | |
| 2. | Occupational Exp. (Accidental) | X | |
| 3. | Occupational Exp. (Routine) | | X |
| 4. | Offsite Costs | X | |
| 5. | Onsite Costs | X | |
| 6. | Regulatory Efficiency | | X |
| 7. | Improvement in Knowledge | | X |
| 8. | Industry Implementation & Operation | X | |
| 9. | NRC Development | | X[a] |
| 10. | NRC Implementation | | X[a] |
| 11. | NRC Operation | | X[a] |

[a]Based on DOE/RL-87-11 (Reference 11) virtually all plants will require additional at-reactor spent fuel storage. NRC costs for at-reactor storage licensing actions are not affected by this alternative.

Table 3.8 Summary of Parameters Affecting Attributes for the Spent Fuel Pool Inventory Reduction Option

| Attributes | Factors Affecting Attributes | Description | Quantification | References |
|---|---|---|---|---|
| Public Health Dose Reduction | A. Pool Failure Probability | Seismic Structural Failure | | Table 3.1 |
| | | High - PWR | $1.8 \times 10^{-6}$/Ry | Ref. 2 |
| | | - BWR | $1.68 \times 10^{-6}$ | |
| | | Low | ≈ 0 | |
| | | Failure due to Cask Drop | | |
| | | High - PWR | $3.1 \times 10^{-7}$/Ry | Ref. 2 |
| | | - BWR | $7.75 \times 10^{-8}$ | |
| | | Low | ≈ 0 | |
| | | Others | ≈ 0 | |
| | B. Number of Pools Involved | PWR | 69 | DOE/RL-87-11 |
| | | BWR | 39 | |
| | C. Average Remaining Life-Time of Plant | PWR | 29.8 | DOE/RL-87-11 |
| | | BWR | 27.9 | |
| | D. Radioactive Inventory Release | Worst Case | Total Inventory 30 days After Discharge | NUREG/CR-4982 |
| | | Best Estimate | Last Fuel Discharge 90 Days After Discharge | |
| | E. Meteorology | | Zion | |
| | F. Population | Worst Case | Zion (860 people/sq. mi.) | |
| | | U.S. Average | 340 people/sq. mi. | |
| | G. Risk Reduction | 80% Sequence Frequency Reduction | 80% | NUREG/CR-4982 |
| Reduction of Occupational Exposure --Accidental | | | Considered to be insignificant compared to Public Health Impact | |
| Reduction of Occupational Exposure --Routine | | | No significant change expected | |

Table 3.8 Summary of Parameters Affecting Attributes for the Spent Fuel Pool Inventory Reduction Option (Cont'd)

| Attributes | Factors Affecting Attributes | Description | Quantification | References |
|---|---|---|---|---|
| Offsite Property Damage | A, B, C, D, E, F, G | Same as those of Public Health | | |
| | Ecomony | | Zion | |
| | Discount Rate | | 10% | |
| Onsite Property Damage | Decontamination, Refurbishment and Replaceement Power Time. | | 5 years | NUREG/CR-3568<br>EPRI NP-3380 |
| | Discount Rate | | 10% | |
| Reg. Efficiency | Unaffected | | | |
| Improvement in Knowledge | Unaffected | | | |
| Industry Implementation and Operation | Additional Storage Option and Reracking Cost. | High (Pool Option)<br>Low (Drywell Option) | | DOE/RL-87-11<br>EPRI NP-3365 |
| | Discount Rate | | 10% | |
| NRC Development /Implementation/ Operation | Unaffected | | | |

Table 3.9 Summary of Industry-Wide Value-Impact Analysis of the Inventory Reduction Option[a]

| Attributes | Dose Reduction (Person-Rem) Best Estimate | Dose Reduction (Person-Rem) High Estimate[b] | Evaluation ($1983) Best Estimate | Evaluation ($1983) High Estimate[b] |
|---|---|---|---|---|
| Public Health | $4.00 \times 10^4$ | $1.28 \times 10^5$ | $4.00 \times 10^7$ | $1.28 \times 10^8$ |
| Occupational Exposure | | | | |
| /Accidental | ≈ 0 | ≈ 0 | ≈ 0 | ≈ 0 |
| /Routine | ≈ 0 | ≈ 0 | ≈ 0 | ≈ 0 |
| Offsite Property | | | $1.42 \times 10^6$ | $2.22 \times 10^6$ |
| Onsite Property | | | $5.54 \times 10^6$ | $4.25 \times 10^7$ |
| Regulatory Efficiency | | | Unaffected | |
| Improvement in Knowledge | | | Unaffected | |
| Industry Implementation and Operation | | | $-1.38 \times 10^9$ | $-1.13 \times 10^9$ |
| NRC Development, Implementation and Operation | | | Unaffected | |
| Net Benefit ($) | | | $-1.33 \times 10^9$[c] | $-9.57 \times 10^8$ |
| Benefit ($)/Cost ($) Ratio | | | 0.035[c] | 0.15 |
| Ratio of Public Dose Reduction per Million Dollars Cost (Person-rem/$10^6$) | | | 29.0[c] | 113.0 |
| Cost of Implementation per Averted Person-rem ($/Person-rem) | | | $3.45 \times 10^4$[c] | $8.83 \times 10^4$ |

(a) Based upon a U.S. pool population of 108.
(b) High estimate is based on the 'Worst Case' source term release and Zion site population (see Table 3.2).
(c) Based on 1988 dollars, the Best Estimate Net Benefit, Benefit/Cost Ratio, Public Dose Reduction per Million Dollars Cost and Cost per Averted Person-rem would be $-1.47 \times 10^9$ Dollars, 0.032, 26.4 Person-rem and $3.79 \times 10^4$ Dollar/Person-rem, respectively. Cost escalation during 1983-1988 was assumed to be 9.8% (Reference 17).

Table 3.10 Value-Impact Sensitivity Analysis of the Inventory Reduction Option

| Parameter | New Value | Net Benefit $ | Public Dose Reduction/ Million $ | Benefit/ Cost |
|---|---|---|---|---|
| Baseline Best Estimate | | -1.33E9 | 29.0 | .035 |
| Pool Failure Probability | Factor of 100 Increase | 3.32E9 | 2900 | 3.5 |
| Discount Rate | 5% | -1.75E9 | 22.2 | .028 |
| Monetary Evaluation of Health Effects | $500/person-rem | -1.35E9 | No Change | .020 |
| | $2000/person-rem | -1.29E9 | No Change | .063 |
| Economics of the Plant Site | W. Virginia | -1.34E9 | 24.5 | .029 |

# 4. IMPROVEMENT OF POOL MAKE-UP RELIABILITY

## 4.1 Introduction

In the current section, the risk-control efficacy of Standard Review Plan (SRP) requirements upon pool make-up capability is characterized within a value/impact framework. The approach taken is one of evaluating first the risk-reduction profile of requirements exceeding those of the SRP. Second for older plants comparable to the SRP requirements, the risk-reduction potential for similar requirements is also assessed.

The methods used to provide cooling for the removal of decay heat from stored assemblies in a spent fuel pool vary from plant to plant. Spent fuel assemblies are cooled and covered with water during all storage conditions.

If circulation of the pool cooling water is disrupted, e.g., due to station blackout, pump failure, pipe rupture, etc., the water temperature of the pool would steadily increase until boiling occurred.

Thermal-hydraulic analyses of the consequences of partial or complete loss of pool cooling capability are a routine part of the safety analysis reports required for licensing. Generally, these analyses address several scenarios ranging from likely to extremely unlikely conditions. Even under pessimistic assumptions the water level in the pool would drop only a few inches per hour. Thus, there is considerable time available to restore normal cooling or to implement one of several alternative backup options for cooling.

The NRC Standard Review Plan[13] provides guidance and defines the acceptance criteria for spent fuel pool cooling systems and is used by the NRC staff to determine whether a specific design complies with the Commission's Rules and Regulations.

The SRP requires conformance with General Design Criteria 2, 4, 5, 44, 45, 46, 61 and 63 along with several specific criteria relating to operating temperatures and structural classification. Although these requirements are very general the SRP requires, as a minimum, redundant cooling systems as well as redundant makeup systems. Thus, four failures must occur before the spent fuel pool can be uncovered. A station blackout could cause these multiple failures, but the likelihood of recovering from a station blackout before the spent fuel is uncovered (at least 24 hours) is extremely high.

## 4.2 Quantification

Four "generic" fuel pool cooling and makeup systems have been examined to illustrate the possible range of failure frequencies for these systems. The failure estimates are also "generic" in nature and may tend to overestimate the actual failure rates. A detailed systems analysis of a specific cooling system (including recovery actions) is likely to result in a somewhat lower failure rate considering the time frame (days) for recovery. The four representative systems are outlined below.

System A - Minimum cooling and makeup system required by the SRP:[13] One full capacity cooling train with redundant active components (i.e., redundant valves and pumps). One Category I makeup system and one backup pump or system (not required to be Category I) which can be aligned to a Category I water supply.

System B - Minimum cooling and makeup system with credit for makeup from fire system (Note that some plants may identify the fire system as the backup in System A).

System C - Typical older system comparable to current SRP requirements: One cooling train with backup active components (but backup components are required to supplement cooling about 30% of time[11]); One safety grade makeup train and one non-safety grade makeup system.

System D - Typical older system (System C) with third makeup train available (e.g., fire system).

Simplified failure estimates are listed in Table 4.1 for these four representative systems. Note that systems A and B are not intended to represent actual systems. Rather, they are representative of the minimum requirements in the current SRP. Systems C and D are based on a previous analysis[1] and represent older plants.

The failure rates and system failure frequencies are based on failure rate data from the Reactor Safety Study[14] with methods similar to the Prioritization Study.[15] Specifically:

- An 0.1 per reactor year frequency for the initiating event is based on the Reactor Safety Study estimates for failure of one spent fuel pool cooling train.
- The conditional failure probability of 0.05 (for the second train of Type A and B) represents a relatively high common mode failure probability given previously in the Prioritization Study.[15]
- The conditional failure probability of 0.3 (for the second train of Type C and D) represents the assumption that both cooling pumps are necessary 30% of the time. Thus a failure of one pump represents a failure of the system.
- Train 1 of the makeup system is assumed to be independent of the cooling system and is assigned a low common cause contribution. Note that the likelihood of the prolonged (greater than 24 hours) station blackout event is assumed to be low ($<10^{-6}$ per reactor year). Otherwise station blackout could provide a common cause failure of all pumps.
- Train 2 of the makeup system is assumed to have a high common cause contribution (~5%) since it is likely to have several active components in common with the first train of makeup.

- The 5% conditional failure probability of the fire system is arbitrary and can only be construed as engineering judgement. The likelihood of successful cooling with the fire system after all else has failed will depend greatly upon plant specific equipment and emergency procedures.

The failure frequencies for these four systems range from $2.2 \times 10^{-5}$ to $1.9 \times 10^{-7}$ per year. Although a loss of cooling and subsequent heat up is a very slow event (several days), previous analyses by Benjamin et al.[4] have shown that after the fuel is uncovered, the remaining water would block air circulation and clad overheating would occur even for fuel which had been cooled for 1 year. However, because of the lack of air circulation within the spent fuel holders, the oxidation reaction would be oxygen starved and clad melting would not occur. Thus, catastrophic failure of the spent fuel would not be expected. Consequence estimates have been obtained previously for this type of accident (see page 65 of NUREG/CR-4982, Cases 3 and 4). Only the noble gases were released in significant quantities. The consequences were found to be minimal (about 4 person-rem). Thus the offsite health consequences of this type of accident are expected to be minimal. However, the economic consequences of such an accident appear to be important. Since the reactor could not operate until the spent fuel pool was available, the cost of the replacement power, until the spent fuel pool building was decontaminated and the equipment was repaired, could be considerable. It is estimated that repairs and decontamination would take from one month to a year depending upon the degree of fuel damage and contamination. Replacement power was calculated based on a 1,000 MW generic plant and a 65% capacity factor.[5] The onsite cost would then range from 16 to 195 million dollars conditional upon a spent fuel pool accident. Integrated over the life of the plant (taken to be 29.2 years, the industry average remaining plant lifetime), the expected cost associated with gradual coolant loss sequences could be as high as $125,000 per plant (assuming failure rate frequencies for a plant with system C: see Table 4.1).

In calculating the expected averted costs associated with improved makeup systems, the product of the resultant accident sequence frequency reduction and the onsite costs associated with the accident, discounted at 10% over the remaining plant lifetime is evaluated.

Two alternative systems for improvement of the fuel pool cooling system have been assessed as potentially cost-beneficial for the four system types:

- Alternative 1 is simply another full capacity pump and associated valves to eliminate the need for running the cooling system without a backup pump (System C). The cost estimate for this alternative is $50,000 (1983) based upon References 16 and 17.

- Alternative 2 is a completely independent makeup train. We assume this system to be similar to the primary spent fuel pool supply train. The hardware requirements include a Category I water storage tank (200,000 gallon capacity), pumps, controls and piping. The cost of the independent makeup train plus overhead and maintenance costs were estimated with the aid of References 16 and 17. The cost is estimated at $\$10^6$ (1983).

## 4.3 Results and Conclusions of Value-Impact Study

The cost/benefit characteristics of adding either of these improvements to the four generic spent fuel pool cooling systems is summarized in Table 4.2 where a discount rate of 10% is assumed. Only improvements to one cooling system (Type C) appears to have non-negligible economic risk impact. The generalized representation of the Standard Review Plan requirements indicate that additional requirements would not result in cost/beneficial improvements. Although the assessment was based on the 1983 dollars, minor variations of equipment costs due to inflation between 1983 and 1988 do not significantly alter the conclusions of this study.

For those older plants (Type C) which operate the spent fuel pool cooling system without a backup, these preliminary evaluations indicate that the addition of a full capacity pump or a redundant makeup train is not a cost-beneficial measure (see Table 4.2). However, the estimated cost of a full capacity pump is approaching the range of averted cost. Thus such an improvement may be justifiable on a plant-specific basis.

Table 4.1 Failure Frequency for Generic Spent Fuel Pool Cooling and Makeup Systems*

| System Type | Description | Failure Rates Per Demand | | | | | Total Failure Frequency Per System Year |
|---|---|---|---|---|---|---|---|
| | | Cooling System | | Makeup System | | | |
| | | Train 1** | Train 2 | Train 1 | Train 2 | Fire System | |
| A. | Minimum SRP Requirement | 0.1 | 0.05 | 0.015 | 0.05 | -- | $3.8 \times 10^{-6}$ |
| B. | Minimum SRP Requirement With Credit for Fire System | 0.1 | 0.05 | 0.015 | 0.05 | 0.05 | $1.9 \times 10^{-7}$ |
| C. | Old Existing Plant with Both Cooling Pumps Required 30% of Timett | 0.1 | 0.3 | 0.015 | 0.05 | -- | $2.2 \times 10^{-5}$ |
| D. | Old Existing Plant With Credit for Fire System | 0.1 | 0.3 | 0.015 | 0.05 | 0.05 | $1.1 \times 10^{-6}$ |

*Reference 1.
**Units of failure per system year.

Table 4.2 Value-Impact for Generic Improvements to the Spent Fuel Pool Cooling System*

| System | Description | Improvement | Improvement Cost (1983$) | Expected Averted Cost (1983$) | Benefit/ Cost Ratio |
|---|---|---|---|---|---|
| A. | Minimum SRP | 1. Additional pump | 50,000 | None | 0.0 |
| | | 2. Additional train | 1.0E6 | 545 to 6640 | <<0.01 |
| B. | Minimum SRP Requirement With Credit for Fire System | 1. Additional pump | 50,000 | None | 0.0 |
| | | 2. Additional train | 1.0E6 | 27 to 330 | 0.0 |
| C. | Old Existing Plant With Both Cooling Pumps Required 30% of Time | 1. Additional pump | 50,000 | 2500 to 30,400 | .05 to 0.61 |
| | | 2. Additional train | 1.0E6 | 3160 to 38,550 | .003 to 0.04 |
| D. | Old Existing Plant With Credit for Fire System | 1. Additional pump | 50,000 | 125 to 1500 | .0025 to 0.03 |
| | | 2. Additional train | 1.0E6 | 159 to 1940 | <.002 |

*Quantification reflects a single spent fuel pool.

# 5. ACCIDENT MITIGATIVE OPTIONS

## 5.1 Introduction

This section discusses several proposed methods that might serve to mitigate the consequences of "beyond-design-basis accidents" in commercial nuclear power plant spent fuel storage pools. Two hypothetical accident sequences, defined in Section 5.2, have been considered. The efficacy of three mitigating systems is evaluated for each of the two accident sequences. The objective of these preliminary evaluations is to identify which mitigating measures, if any, appear to merit more detailed analyses. A value-impact assessment for one of the mitigative measures is performed in Section 5.5.

It must be noted that the designs and structural details of spent fuel pools are plant specific. Also, the current inventories of spent fuel vary greatly from plant to plant. Therefore, the evaluations that follow will not apply equally to all plants. In the event that more detailed analyses are found to be merited, such evaluations will need to be carried out on a plant-specific basis.

## 5.2 Definition of Accident Sequences

Generic Safety Issue 82, "Beyond Design Basis Accidents in Spent Fuel Pools," was the subject of a recent risk assessment[1] limited specifically to accident sequences resulting in complete or partial loss of water inventory of a spent fuel pool. Initiating events for such sequences included:

- structural failure of pool due to seismic events, missiles or cask drop;
- water inventory boil-off resulting from prolonged loss of cooling water circulation capability; and
- partial drain down of pool due to pneumatic seal failure.

Accident sequences that were analyzed in Reference 1 ranged from catastrophic cases which involved Zircaloy fires to less severe situations in which damage was limited to multiple cladding failures.

For purposes of this report, two sequence types have been selected to represent a bounding case with respect to the source terms involved. Less severe cases, such as partial loss of water inventory and loss of cooling capability are not discussed, since the source terms released to the environment from these sequences are relatively small and thus the associated risk reduction potential is bounded by those discussed here. The less severe accident sequences are also relatively low frequency. For both the sequences considered, it is assumed that radiation levels severely limit or preclude human access to the spent fuel pool area. Also, it should be noted that most of the accident sequences are postulated to occur simultaneously with other plant disruptive events due to common initiating causes such as seismic events. The sequences are characterized in the following sections. For convenience, the accident sequences have been denoted by the symbols "A1" and "A2."

### 5.2.1 Accident Sequence "A1," A Complete Loss of Pool Water Inventory Followed by a Zircaloy Fire

The accident sequence, "A1," reflects an upper bound scenario with respect to potential radiological releases. It is based on the following assumptions:

- structural failure of the pool results in a complete loss of water inventory;
- the age and storage configuration of the spent fuel meet the criteria for ignition of a Zircaloy fire (see Reference 1, pp. 49-62);
- the Zircaloy fire propagates through all of the spent fuel assemblies stored in the pool;
- a major fraction of the $UO_2$ fuel pellets are oxidized to $U_3O_8$ and relocate as a bed of rubble on the bottom of the drained pool; and
- the containment integrity of the building covering the spent fuel pool is breached.*

The fire is assumed to burn and propagate through the spent fuel inventory for a period of approximately eight hours, producing localized maximum temperatures in the range of 1500°C as each fuel batch successively ignites and the cladding is consumed (see Reference 18 for the temperature-time profiles for several typical cases).

Theoretical analyses and expertimental data that relate to an A1 type sequence are very limited, and, in particular, no studies have been made which can be readily adapted to characterize the bed of debris resulting from a spent fuel Zircaloy fire. As far as a source term for sequence A1 is concerned, the release data obtained from the Chernobyl accident, i.e., the fractional releases that occurred after the initial burst release, are possibly pertinent. Such data are summarized in Section 6 of Reference 19. The Chernobyl fractional releases of specific isotopes differ somewhat from the estimates made in Reference 1, Table 4.2, pg. 69. In particular, the cesium release fractions were an order of magnitude smaller in the Chernobyl case. For purposes of bounding the risk reduction potential of mitigative options discussed in Section 5.3, the release fractions estimated in Reference 1 and utilized in Section 3 of the current document will be adopted, pending further investigation of the relevance of the Chernobyl data. The source term is obtained by convolution of the fractional releases with the radionuclide inventory as a function of decay time (tonnes of fuel in each discharge batch).

### 5.2.2 Accident Sequence "A2," A Complete Loss of Pool Water Inventory Followed by Clad Failures but Not Zircaloy Fire

The accident "A2" sequence, is based on the following set of assumptions:

- complete loss of water inventory due to structural failure of the pool;

*Spent fuel pools are normally housed in "secondary containment" areas (as, e.g., in BWRs), or in auxiliary buildings that provide only limited containment capability; however, even limited containment, when intact, can greatly attenuate the source term. The sequence A1 assumes that the building roof has collapsed as a result of the intense heat of the Zircaloy fire, and vigorous convection carries the plume into the atmosphere.

- conditions for the ignition of a Zircaloy fire are not satisfied (see Reference 1, Tables 3.1 through 3.5);
- the containment integrity of the building is intact;
- pool structural damage is such that water inventory cannot be restored before extensive clad failures; and
- all assemblies with decay times of 5 years or less subsequently suffer 100% failures of the clad pressure envelope.

The fractional releases of selected radionuclides from the fuel (gap releases) are assumed to be as follows:

| | |
|---|---|
| Noble gases: | 1.00 |
| Cesium isotopes: | 0.05 |

## 5.3 Definitions of Mitigative Measures

Several measures have been proposed which might effectively mitigate the consequences or interrupt the progress of beyond-design-basis accidents in spent fuel pools (e.g., see Reference 1, Section 6). Design criteria for such systems depend on the particular accident sequence against which protection is sought. Design details would be plant specific as appropriate for the particular pool configuration. Not all measures would be applicable to all spent fuel pools.

### 5.3.1 Mitigative Measure "M1," Covering Fuel Debris With Solid Materials

Mitigative measure, "M1," applies only to accident sequence A1, i.e., a catastrophic accident in which the stored fuel inventory has been reduced to a bed of hot rubble. It consists of the a contingency plan to dump massive amounts of various solid materials into the drained pool to cover the rubble to a depth of several feet. It is assumed that the solid materials are not stockpiled onsite, but could be obtained in a timely manner on an ad hoc basis, the materials being commonly available in all parts of the country. The types of material or potential value include sand, clay, dolomite, boron compounds, lead, etc. "M1" would consist of a generic contingency plan that:

- specifies the types and quantities of materials that would be used;
- conceptual studies on how the materials could be emplaced; and
- analyses on attenuation of radioactive releases and gamma-ray shielding efficacy.

### 5.3.2 Mitigative Measure "M2," Water Spray Systems

Mitigative system, "M2," consists of a water spray system located above the pool, having sufficient capacity to block or mitigate a given accident sequence.

### 5.3.3 Mitigative Measure "M3," Building Ventilation Gas Treatment System

Mitigative system, "M3," consists of a building ventilation/filter system designed to reduce the concentration of airborne radioactivity before discharge to the environment.

## 5.4 Discussion of the Efficacies of Mitigative Measures for Two Accident Sequences

This section presents qualitative evaluations of the mitigation measures for the different accident sequences. The objective is to identify which measures, if any, appear to merit more detailed, quantitative analysis.

### 5.4.1 Zircaloy Fires (A1): Mitigative Options

A1/M1: An A1 sequence initiated by a beyond-design-basis seismic event implies serious damage in other sections of the nuclear plant, as well as major disruption of emergency services in the surrounding region. Given a catastrophic Zircaloy fire, the M1 measure would attenuate prolonged radioactive releases from the bed of rubble, but it appears dubious that the measures could be implemented soon enough to prevent a major release to the environment during the first few hours of the sequence.

The question to be evaluated here, is whether it would be cost effective to develop a generic contingency plan as a cooperative effort among all licensees, and, if so, how much development effort would be merited? The contingency plan would be concerned with an extremely low frequency, but high consequence event.

The results at Chernobyl can be used as a rough gauge of the efficacy of this measure, when carried out on a strictly ad hoc basis with apparently no advanced planning. It is reasonable to assume that a generic M1 plan could be prepared that, if ever needed, could be more effective than the Chernobyl experience, i.e., be implemented sooner and provide higher attenuation of radioactive releases.

It is our evaluation that M1 merits a small effort, perhaps a few man-months of study to determine whether a more intensive planning effort would be cost effective.

A1/M2: A seismic Category I safety-grade water spray system drawing on a Category I reservoir of water could be effective in mitigating the consequences of a Zircaloy fire in a spent fuel pool that has lost its water inventory. Such a system built to meet seismic safety standards would have a very high probability of surviving a seismic event. It would also act as a standby for an accident initiated by a shipping cask drop resulting in structural failure of the pool. A value/impact analysis for a spray system is described in Section 5.5.

In situations where spray actuation is retarded relative to fire initiation, there is the possibility that oxidation could be aggravated by the water source. Consideration of this scenario is beyond the scope of the current analysis.

A1/M3: No building ventilation system could cope with an A1 accident sequence.

### 5.4.2 Clad Failure Without Zircaloy Fire (A2): Mitigative Options

A2/M1: In the event of a structural failure which allows the pool water inventory to drain, recovery from the accident would present difficult problems even though no Zircaloy fire occurred. Radiation levels above the pool would be extremely high, preventing human entry. Structural repairs which would allow the pool to be refilled with water would be difficult, is not impossible. Therefore, an M1 type measure might prove necessary for recovery. The cost effectiveness of developing a contingency plan faces the same uncertainties as described earlier for A1/M1. It is our evaluation that a modest effort appears merited and could be included in the scope of the A1/M1 study.

A2/M2: (See A1/M2. The same evaluation applies here).

A2/M3: In an A2 sequence, in which the building integrity is not breached, an M3 building ventilation and gas treatment system could reduce the discharge of airborne particulate radioactivity. To be effective, the system would have to be qualified to survive the A2 initiating event, and have adequate capacity to handle extremely large volumes of air. Removal of noble gases from the circulating air would require heroic measures - a system of cryogenic filters (e.g., liquid nitrogen cooled zeolite beds), that could be purged into high pressure cylinders at frequent intervals, and, of course, a large supply of liquid nitrogen would be necessary. Investment in an effective M3 system to cope with an extremely low frequency A2 accident sequence would not appear to be reasonable.

## 5.5 Value-Impact Assessment of a Post-Accident Spray System

### 5.5.1 Characterization of Post-Accident Spray Systems

Post-accident spray systems were discussed in Section 5.4 as a potentially significant mitigative measure for spent fuel accidents. A scoping value-impact assessment has been performed in this section to provide some insight into the potential cost-effectiveness of introducing spray systems. This assessment is a rough approximation (order of magnitude) of a cost and benefit comparison and generally follows the guidelines outlined for "First Approximation of Benefits and Costs" in NUREG/CR-3568.[5]

It should be emphasized that this assessment is scoping in nature due to the many assumptions involved and large uncertainties in data, especially with respect to the estimation of seismic accident sequence frequencies, and decontamination factors assumed for spray systems. The benefit estimate has the potential to be increased significantly through modification of assumptions with regard to cask drop frequencies.

The principal risk reduction effect of spray systems is achieved by decontaminating radiological releases thus permitting greater retention of fission products in the pool and the pool building. Results of analyses of severe reactor accidents (Draft NUREG/CR-4551, Vol. 1, in support of Draft NUREG-1150)[20] indicate that containment spray systems can be significantly effective in reducing source terms and severity of consequences of nuclear reactor accidents.

In this assessment, it was assumed that the major benefit of spray systems derives from reduction in the offsite consequences. In NUREG/CR-3673[9] it was estimated that occupational exposure would be small compared to the offsite impact of a radiological accident. The incremental contribution to risk reduction through mitigation of the accident would then be a much smaller and second order effect.[1] Decontamination and Replacement Power Costs would also be assumed to be minimally influenced by the use of a spray system.

### 5.5.2 Quantification

The effectiveness of a spray system is measured by the Decontamination Factor (DF = The amount of release of the radioactive species to the environment without spray divided by the amount of release with spray). Decontamination factors for a fuel pool spray system are difficult to estimate without detailed calculations. A DF for containment spray systems (for major reactor accidents) was assigned a best estimate of 45 across radionuclide groups in the NUREG-1150 analysis of the Surry plant.[20] That factor will be assumed for the current calculations. From Table 5.1 it may be seen that a Df of 45 has the effect of reducing offsite consequences to a small fraction of their original levels. In practical terms, therefore, a DF of 45 provides an upper bound upon the value/impact ratio relative to spray effectiveness.

In Reference 1, seismic initiators and cask drop accidents were identified as potentially dominant contributors to the risk for spent fuel pool accidents. Contributions from other sequences were assessed to be relatively small due both to lower initiator frequencies and lesser radiological releases. For purposes of the current scoping analysis, an accident sequence frequency was assumed corresponding to data presented in Table 3.1.

Preliminary construction and industry maintenance costs were based upon References 16 and 17. Assumed hardware requirements included a Category I water storage tank (200,000 gallon capacity) and a spray system including pumps, spray nozzles, and associated hardware. Total costs (industry wide: 108 pools) were estimated at $1.1E+8 (1983$).

The offsite consequences were calculated using the MACCS code.[6] The Zion plant was selected as a reference plant since detailed population and land data were available. Two calculations were performed varying source terms and population density. The population density of 340 persons/sq. mile used in the "Average Case" is a U.S. average figure. The average source term developed in NUREG/CR-4982 was utilized here. The "Worst Case" represents the combined effect of the worst case source term developed in NUREG/CR-4982 and a high population density (860 persons/square mile: Zion population). The Zion economic data and Zion meteorology were used for both calculations. The offsite property damage in MACCS is given in 1980 dollars and has been escalated to 1983 dollars. Table 5.1 summarizes these calculations.

Results of the value/impact analysis are shown in Table 5.2. The table indicates a first estimate of industry-wide potential benefit of $4.2E+7 based purely upon the dollar conversion of radiological dose to the population, and a potential cost of $1.1E+8. The expected averted offsite economic impact is estimated to be $6.77E+6. These figures are based upon the average case release/population assumptions, and a 10% discount rate for monetary costs.

For the worst case release/population, the expected dose reduction benefit over plant lifetime (with $1000/person-rem conversion) is $1.18E+8 and the economic impact reduction is $5.20E+7.

## 5.6 Conclusions

Inspection of Table 5.2 reveals that for best estimate calculations, the installation of pool sprays is not a cost-effective measure. High estimates of risk-reduction (high source term and Zion demography) can be seen to result in marginally cost-effective comparisons for this option. As a generic industry-wide analysis based upon the U.S. population of plant sites,however, utilization of Zion site demography for consequence evaluation results in an overly conservative estimate of risk-reduction properties of a given plant modification. Use of Zion demography in the 'high estimate' calculations is intended only to provide insights into the potential site-specific risk reduction achievement of a given backfit. In-plant, pool-specific evaluations of risk-reduction would need to be performed, however, to reach conclusions regarding the cost-effectiveness of any modification on a plant-specific basis. As with the fuel reracking measure discussed in Section 3, the dominant sensitivity factors in the cost-benefit evaluation are the frequencies of the pool failure sequences. A given percentage increase in the assumed frequency of all sequences leading to structural failure of the pool would result in an equal percentage increase in the risk-reduction value of the pool spray option. Current assumptions regarding the frequencies of the seismic and heavy load drop sequences are based upon the sequence analyses of Reference 1 and the updated seismic and load drop fragilities reported in Reference 2. The current study may easily be used to reflect alternative assumptions regarding sequence frequencies through straightforward numerical scaling adjustments of the results generated.

## 6. SUMMARY AND DISCUSSION

Generic analyses of various potential modifications to nuclear power plant spent fuel pools have been performed. Cast within the framework of value/impact analysis methodology, the risk-reduction value and the cost impact of these modifications were evaluated and compared. The analyses focused upon the risk-dominant accident sequences identified in Reference 1. Both accident preventive and accident mitigative risk-reduction options were assessed. These were as follows:

1. The limited low-density reracking of recently discharged fuel to decrease the likelihood of the initiation of self-sustaining clad oxidation in the event of loss of pool water inventory.
2. The addition of a full capacity pump in one pool coolant makeup train to increase pool cooling reliability.
3. The addition of a completely independent pool coolant makeup train.
4. The installation of pool sprays to attenuate fission product releases in the event of fuel degradation.

Best-estimate calculations of the following value/impact attributes were performed: Public dose, offsite economic impact, onsite economic impact and industry implementation and operation costs. Other attributes identified, such as occupational exposure and regulatory efficiency improvement were considered either to be negligible contributors to the value/impact balance or unaffected within the scope of the current project. A $1000/per person-rem averted conversion factor was utilized to convert dose-reduction measures into a monetary measure in the best estimate calculations. None of the risk-reduction measures were assessed to have a value/impact ratio greater than 1.

A series of sensitivity calculations were performed in which various parameter inputs and modeling assumptions were varied. Factors varied included source term magnitude, site demography economics and meteorology, accident sequence frequencies, cost discount rate, dose/dollar conversion and the cost of implementation to industry. The only factors with significant influence upon the balance of value against impact was found to be the frequencies of the sequences that involve structural failure of the pool due to seismic events and heavy load drop events. The aggregate frequency of all such sequences is found to behave as a simple multiplier in evaluation of the risk-reduction value of the low-density reracking and the spray installation options. Hence to increase this aggregate frequency by a factor of 10, say, is to increase the risk-reduction value of each of these two plant modifications by a factor of 10 also. In the case of low-density reracking, this aggregate frequency would need to be increased by two orders of magnitude to enter the cost-effective domain while, for spray installation, increase by a single order of magnitude would increase the value/impact ratio above 1. It should be noted that even then, to draw inferences regarding the cost-effectiveness of a pool modification on a plant-specific basis would require plant-specific analyses.

Given this sensitivity to the sequence frequencies, it is important to identify the factors and assumptions that influence these frequencies. These include seismic hazard magnitudes and pool fragilities. Reference 2 provided

the basis for the current quantification. Additional important assumptions relate to the effect of implementing the resolution of Generic Issue A-36 in the handling of heavy loads in the vicinity of the pool. These assumptions are summarized in Table 3.1 and are based upon discussions in Reference 1.

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# APPENDIX A

Additional statistics associated with Limited Low-Density Storage of Spent Fuel.

TABLE A1. COST TO PROVIDE THE ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS STORAGE OPTIONS (1983 DOLLARS)

| | PLANT NAME | TYPE | SHUTDOWN YEAR | LOW DEN RACKS NEEDED | BUILT NOW | | | | | BUILT WHEN NEEDED (10% DISCOUNT RATE) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | POOL | DRYWELL | VAULT | CASK | SILO | POOL | DRYWELL | VAULT | CASK | SILO |
| | ARK NUCLEAR 1 | P | 2008 | 120 | 1.86+7 | 9.05+6 | 1.94+7 | 1.25+7 | 1.70+7 | 2.32+7 | 1.05+7 | 1.94+7 | 1.36+7 | 1.52+7 |
| | ARK NUCLEAR 2 | P | 2012 | 136 | 2.39+7 | 1.06+7 | 2.35+7 | 1.43+7 | 2.00+7 | 2.45+7 | 1.14+7 | 2.13+7 | 1.53+7 | 1.64+7 |
| | BEAVER VALLEY 1 | P | 2016 | 138 | 3.46+7 | 1.19+7 | 2.69+7 | 1.43+7 | 2.00+7 | 2.87+7 | 1.36+7 | 2.69+7 | 1.97+7 | 1.93+7 |
| | BEAVER VALLEY 2 | P | 2026 | 146 | 3.64+7 | 1.23+7 | 2.80+7 | 1.51+7 | 2.13+7 | 1.02+7 | 5.05+6 | 9.56+6 | 7.11+6 | 7.12+6 |
| | BELLEFONTE 1 | P | 2028 | 168 | 4.02+7 | 1.54+7 | 4.08+7 | 2.24+7 | 2.77+7 | 1.23+7 | 7.09+6 | 1.53+7 | 1.20+7 | 1.08+7 |
| | BELLEFONTE 2 | P | 2030 | 168 | 4.02+7 | 1.54+7 | 4.08+7 | 2.24+7 | 2.77+7 | 1.03+7 | 6.00+6 | 1.28+7 | 1.00+7 | 9.02+6 |
| | BIG ROCK 1 | B | 2001 | 40 | 6.87+6 | 9.38+5 | 1.62+6 | 4.33+5 | 2.49+6 | 7.26+6 | 2.16+6 | 3.63+6 | 2.13+6 | 3.10+6 |
| A | BRAIDWOOD 1 | P | 2026 | 252 | 3.74+7 | 3.11+7 | 6.08+7 | 2.36+7 | 4.52+7 | 3.17+7 | 2.48+7 | 4.31+7 | 3.94+7 | 3.10+7 |
| A | BRAIDWOOD 2 | P | 2027 | (a) | | | | | | | | | | |
| B | BROWNS FERRY 1 | B | 2014 | 684 | 1.99+7 | 1.34+7 | 3.04+7 | 1.96+7 | 2.14+7 | 8.69+6 | 6.01+6 | 1.17+7 | 9.04+6 | 8.48+6 |
| B | BROWNS FERRY 2 | B | 2014 | (a) | | | | | | | | | | |
| | BROWNS FERRY 3 | B | 2017 | 456 | 2.55+7 | 1.01+7 | 2.24+7 | 1.28+7 | 1.66+7 | 1.29+7 | 6.70+6 | 1.28+7 | 9.53+6 | 9.49+6 |
| | BRUNSWICK 1 | B | 2010 | 376 | 1.47+7 | 7.14+6 | 1.57+7 | 1.00+7 | 1.07+7 | 1.21+7 | 6.69+6 | 1.34+7 | 1.03+7 | 9.16+6 |
| | | P | | | | | | | | | | | | |
| | BRUNSWICK 2 | B | 2010 | 376 | 1.80+7 | 7.29+6 | 1.63+7 | 1.01+7 | 1.14+7 | 1.55+7 | 7.83+6 | 1.54+7 | 1.18+7 | 1.09+7 |
| | | P | | | | | | | | | | | | |
| A | BYRON 1 | P | 2024 | 264 | 3.72+7 | 3.17+7 | 6.19+7 | 2.35+7 | 4.55+7 | 3.10+7 | 3.00+7 | 3.73+7 | 4.78+7 | 2.73+7 |
| A | BYRON 2 | P | 2026 | (a) | | | | | | | | | | |
| | CALLAWAY 1 | P | 2024 | 168 | 3.51+7 | 1.48+7 | 3.35+7 | 1.69+7 | 2.49+7 | 1.50+7 | 8.09+6 | 1.59+7 | 1.17+7 | 1.16+7 |
| B | CALVERT CLF 1 | P | 2014 | 192 | 2.47+7 | 1.20+7 | 3.22+7 | 2.08+7 | 2.05+7 | 2.11+7 | 1.36+7 | 2.55+7 | 2.51+7 | 1.69+7 |
| B | CALVERT CLF 2 | P | 2016 | (a) | | | | | | | | | | |
| | CATAWBA 1 | P | 2025 | 144 | 5.52+7 | 1.90+7 | 3.15+7 | 1.95+7 | 2.45+7 | 2.05+6 | 1.13+6 | 1.46+6 | 1.15+6 | 1.26+6 |
| | CATAWBA 2 | P | 2026 | 144 | 5.28+7 | 1.87+7 | 3.09+7 | 1.94+7 | 2.36+7 | 1.73+6 | 9.89+5 | 1.26+6 | 1.01+6 | 1.09+6 |
| | CLINTON 1 | B | 2027 | 344 | 2.38+7 | 8.68+6 | 1.92+7 | 9.72+6 | 1.45+7 | 7.89+6 | 4.09+6 | 7.58+6 | 5.67+6 | 5.69+6 |
| B | COMANCHE PK 1 | P | 2030 | 198 | 3.36+7 | 1.33+7 | 3.74+7 | 2.68+7 | 2.36+7 | 4.51+6 | 2.81+6 | 5.62+6 | 4.82+6 | 4.02+6 |
| B | COMANCHE PK 2 | P | 2030 | (a) | | | | | | | | | | |
| A | COOK 1 | P | 2009 | 256 | 3.18+7 | 1.86+7 | 4.42+7 | 2.75+7 | 3.12+7 | 2.30+7 | 1.44+7 | 3.02+7 | 2.30+7 | 2.14+7 |
| A | COOK 2 | P | 2009 | (a) | | | | | | | | | | |
| | COOPER STN | B | 2008 | 232 | 9.59+6 | 5.23+6 | 1.10+7 | 7.52+6 | 9.42+6 | 8.86+6 | 4.33+6 | 7.84+6 | 5.65+6 | 6.11+6 |
| | CRYSTAL RVR 3 | P | 2016 | 72 | 1.39+7 | 6.51+6 | 1.39+7 | 8.91+6 | 1.24+7 | 6.79+6 | 3.12+6 | 5.52+6 | 3.87+6 | 4.40+6 |
| | DAVIS-BESSE 1 | P | 2017 | 120 | 3.88+7 | 1.24+7 | 3.26+7 | 1.90+7 | 2.09+7 | 3.38+7 | 1.96+7 | 3.49+7 | 3.78+7 | 2.33+7 |
| | DIABLO CANYON 1 | P | 2025 | 85 | 1.18+7 | 6.73+6 | 1.48+7 | 9.83+6 | 1.21+7 | 3.28+6 | 1.77+6 | 3.06+6 | 2.31+6 | 2.43+6 |
| | DIABLO CANYON 2 | P | 2025 | 85 | 1.18+7 | 6.73+6 | 1.48+7 | 9.83+6 | 1.21+7 | 3.28+6 | 1.77+6 | 3.06+6 | 2.31+6 | 2.43+6 |
| | DRESDEN 1 | B | 1984 | | | | | | | | | | | |
| | DRESDEN 2 | B | 2008 | 316 | 1.42+7 | 6.10+6 | 1.26+7 | 8.04+6 | 1.17+7 | 1.32+7 | 5.79+6 | 1.01+7 | 6.98+6 | 8.21+6 |
| | DRESDEN 3 | B | 2008 | 316 | 1.42+7 | 3.63+6 | 6.89+6 | 3.75+6 | 7.74+6 | 1.11+7 | 4.12+6 | 6.83+6 | 4.42+6 | 5.70+6 |
| | DUANE ARNOLD | B | 2010 | 256 | 1.87+7 | 6.29+6 | 1.29+7 | 7.63+6 | 1.29+7 | 1.75+7 | 6.98+6 | 1.22+7 | 8.19+6 | 9.93+6 |
| | ENRICO FERMI 2 | B | 2025 | 552 | 3.80+7 | 1.39+7 | 3.79+7 | 2.20+7 | 2.40+7 | 2.89+7 | 1.59+7 | 3.61+7 | 2.90+7 | 2.47+7 |
| | FARLEY 1 | P | 2012 | 136 | 2.10+7 | 8.47+6 | 1.78+7 | 1.17+7 | 1.65+7 | 1.10+7 | 4.95+6 | 8.67+6 | 6.14+6 | 6.96+6 |
| | FARLEY 2 | P | 2012 | 136 | 2.10+7 | 5.50+6 | 1.09+7 | 6.18+6 | 1.20+7 | 9.16+6 | 3.63+6 | 5.99+6 | 4.02+6 | 5.00+6 |
| | FITZPATRICK | B | 2015 | 380 | 2.51+7 | 8.36+6 | 1.84+7 | 1.03+7 | 1.41+7 | 1.79+7 | 8.36+6 | 1.61+7 | 1.19+7 | 1.20+7 |
| | FORT CALHOUN | P | 2008 | 90 | 1.39+7 | 3.94+6 | 8.09+6 | 4.54+6 | 8.63+6 | 1.88+7 | 6.90+6 | 1.19+7 | 7.64+6 | 9.87+6 |
| | FT ST VRAIN | G | 2007 | 240 | | | | | | | | | | |
| | GINNA | P | 2008 | 64 | 1.38+7 | 1.78+6 | 3.33+6 | 9.69+5 | 5.08+6 | 1.07+7 | 3.27+6 | 5.42+6 | 3.23+6 | 4.63+6 |
| | GRAND GULF 1 | B | 2022 | 536 | 2.78+7 | 1.31+7 | 3.29+7 | 1.82+7 | 2.26+7 | 1.92+7 | 1.14+7 | 2.44+7 | 1.88+7 | 1.72+7 |
| | HADDAM NECK | P | 2007 | 104 | 1.62+7 | 5.06+6 | 1.04+7 | 5.91+6 | 1.06+7 | 1.76+7 | 6.68+6 | 1.17+7 | 7.62+6 | 9.52+6 |
| | HARRIS 1 | P | 2026 | 104 | 4.75+5 | 4.75+5 | 4.75+5 | 4.75+5 | 4.75+5 | 4.75+5 | 4.75+5 | 4.75+5 | 4.75+5 | 4.75+5 |
| | | B | | | | | | | | | | | | |

TABLE A1. COST TO PROVIDE THE ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS STORAGE OPTIONS (1983 DOLLARS) (cont'd)

| | PLANT NAME | TYPE | SHUTDOWN YEAR | LOW DEN RACKS NEEDED | BUILT NOW | | | | | BUILT WHEN NEEDED (10% DISCOUNT RATE) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | POOL | DRYWELL | VAULT | CASK | SILO | POOL | DRYWELL | VAULT | CASK | SILO |
| B | HATCH 1 | B | 2009 | 588 | 1.83+7 | 1.11+7 | 2.49+7 | 1.63+7 | 1.79+7 | 9.72+6 | 6.21+6 | 1.20+7 | 9.31+6 | 8.76+6 |
| B | HATCH 2 | B | 2012 | (a) | | | | | | | | | | |
| | HOPE CREEK | B | 2026 | 464 | 2.46+7 | 1.12+7 | 2.49+7 | 1.31+7 | 1.84+7 | 7.71+6 | 4.46+6 | 8.30+6 | 6.27+6 | 6.17+6 |
| | HUMBOLDT BAY | B | 1976 | | | | | | | | | | | |
| | INDIAN PT 1 | P | 1980 | | | | | | | | | | | |
| | INDIAN PT 2 | P | 2006 | 136 | 1.52+7 | 9.75+6 | 2.15+7 | 1.49+7 | 1.68+7 | 1.95+7 | 1.03+7 | 1.98+7 | 1.47+7 | 1.49+7 |
| | INDIAN PT 3 | P | 2015 | 152 | 2.87+7 | 1.19+7 | 2.67+7 | 1.68+7 | 2.17+7 | 1.86+7 | 7.87+6 | 1.48+7 | 1.08+7 | 1.12+7 |
| | KEWAUNEE | P | 2014 | 74 | 1.39+7 | 5.85+6 | 1.27+7 | 7.66+6 | 1.15+7 | 1.18+7 | 5.07+6 | 9.18+6 | 6.29+6 | 7.34+6 |
| | LACROSSE | B | 2002 | 48 | 1.14+7 | 1.36+6 | 2.66+6 | 6.77+5 | 4.09+6 | 1.58+7 | 5.21+6 | 8.90+6 | 5.16+6 | 7.00+6 |
| B | LASALLE CTY 1 | B | 2022 | 660 | 2.73+6 | 7.67+6 | 2.89+7 | 6.76+6 | 1.43+7 | 1.47+6 | 1.15+7 | 8.27+6 | 2.14+7 | 5.27+6 |
| B | LASALLE CTY 2 | B | 2023 | (a) | | | | | | | | | | |
| | LIMERICK 1 | B | 2024 | 448 | 2.84+7 | 1.33+7 | 3.17+7 | 1.53+7 | 2.23+7 | 2.75+7 | 1.66+7 | 3.17+7 | 2.63+7 | 2.20+7 |
| | LIMERICK 2 | B | 2029 | 440 | 2.95+7 | 1.30+7 | 3.18+7 | 1.52+7 | 2.24+7 | 2.19+7 | 1.27+7 | 2.68+7 | 2.02+7 | 1.90+7 |
| | MAINE YANKEE | P | 2008 | 140 | 2.09+7 | 9.77+6 | 2.16+7 | 1.36+7 | 1.83+7 | 2.54+7 | 1.28+7 | 2.31+7 | 1.73+7 | 1.71+7 |
| | MCGUIRE 1 | P | 2021 | 144 | 3.19+7 | 1.22+7 | 2.76+7 | 1.49+7 | 2.06+7 | 1.26+7 | 6.47+6 | 1.26+7 | 9.35+6 | 9.20+6 |
| | MCGUIRE 2 | P | 2023 | 144 | 3.19+7 | 1.25+7 | 2.82+7 | 1.48+7 | 2.09+7 | 1.15+7 | 6.01+6 | 1.16+7 | 8.65+6 | 8.56+6 |
| | MILLSTONE 1 | B | 2010 | 196 | 3.31+6 | 2.82+6 | 6.11+6 | 4.84+6 | 3.21+6 | 3.05+5 | -3.50+ | 1.87+6 | 9.06+5 | 1.58+6 |
| | MILLSTONE 2 | P | 2015 | 156 | 3.24+7 | 1.14+7 | 2.60+7 | 1.46+7 | 2.00+7 | 2.91+7 | 1.34+7 | 2.61+7 | 1.91+7 | 1.93+7 |
| | MILLSTONE 3 | P | 2025 | 168 | 2.76+7 | 1.22+7 | 2.73+7 | 1.61+7 | 2.15+7 | 5.20+6 | 2.82+6 | 4.84+6 | 3.76+6 | 3.79+6 |
| | MONTICELLO | B | 2007 | 240 | 1.41+7 | 2.03+6 | 3.59+6 | 1.22+6 | 5.34+6 | 7.60+6 | 2.56+6 | 4.03+6 | 2.55+6 | 3.48+6 |
| | NINE MILE PT 1 | B | 2005 | 184 | 1.40+7 | 3.05+6 | 5.82+6 | 2.90+6 | 7.01+6 | 1.56+7 | 5.33+6 | 9.04+6 | 5.64+6 | 7.54+6 |
| | NINE MILE PT 2 | B | 2026 | 276 | 1.51+7 | 5.77+6 | 1.27+7 | 8.07+6 | 9.77+6 | 3.14+6 | 1.74+6 | 2.90+6 | 2.29+6 | 2.29+6 |
| A | NORTH ANNA 1 | P | 2018 | 195 | 3.91+7 | 1.58+7 | 4.34+7 | 2.74+7 | 2.79+7 | 2.41+7 | 1.35+7 | 3.09+7 | 2.50+7 | 2.12+7 |
| A | NORTH ANNA 2 | P | 2020 | (a) | | | | | | | | | | |
| A | OCONEE 1 | P | 2013 | 180 | 2.17+7 | 1.01+7 | 3.03+7 | 2.44+7 | 1.72+7 | 1.14+7 | 7.81+6 | 1.19+7 | 1.87+7 | 6.95+6 |
| A | OCONEE 2 | P | 2013 | (a) | | | | | | | | | | |
| | OCONEE 3 | P | 2014 | 120 | 1.80+7 | 9.08+6 | 2.06+7 | 1.18+7 | 1.39+7 | 1.55+7 | 8.60+6 | 1.77+7 | 1.34+7 | 1.19+7 |
| | OYSTER CRK 1 | B | 2004 | 256 | 1.18+7 | 4.19+6 | 8.41+6 | 5.11+6 | 8.43+6 | 1.51+7 | 6.06+6 | 1.05+7 | 6.97+6 | 8.50+6 |
| | PALISADES | P | 2011 | 68 | 1.17+6 | 3.39+6 | 7.77+6 | 5.85+6 | 4.67+6 | 5.70+5 | 1.79+6 | 4.06+6 | 3.69+6 | 2.62+6 |
| | PALO VERDE 1 | P | 2024 | 170 | 3.56+7 | 1.38+7 | 3.11+7 | 1.58+7 | 2.32+7 | 1.48+7 | 7.65+6 | 1.50+7 | 1.10+7 | 1.10+7 |
| | PALO VERDE 2 | P | 2025 | 170 | 3.56+7 | 1.37+7 | 3.12+7 | 1.58+7 | 2.32+7 | 1.35+7 | 7.03+6 | 1.37+7 | 1.01+7 | 1.01+7 |
| | PALO VERDE 3 | P | 2026 | 170 | 3.56+7 | 1.37+7 | 3.12+7 | 1.58+7 | 2.32+7 | 1.24+7 | 6.45+6 | 1.25+7 | 9.24+6 | 9.25+6 |
| | PEACHBOTTOM 2 | B | 2008 | 456 | 2.19+7 | 8.87+6 | 1.97+7 | 1.30+7 | 1.52+7 | 1.72+7 | 8.46+6 | 1.60+7 | 1.22+7 | 1.20+7 |
| | PEACHBOTTOM 3 | B | 2008 | 440 | 1.88+7 | 8.65+6 | 1.90+7 | 1.28+7 | 1.49+7 | 1.62+7 | 8.09+6 | 1.52+7 | 1.14+7 | 1.15+7 |
| | PERRY 1 | B | 2026 | 448 | 2.50+7 | 1.04+7 | 2.28+7 | 1.25+7 | 1.69+7 | 6.48+6 | 3.65+6 | 6.54+6 | 5.03+6 | 4.96+6 |
| | PILGRIM 1 | B | 2008 | 192 | 1.17+7 | 4.73+6 | 1.02+7 | 6.14+6 | 9.10+6 | 1.64+7 | 7.23+6 | 1.34+7 | 9.33+6 | 1.05+7 |
| A | POINT BEACH 1 | P | 2007 | 96 | 1.45+7 | 5.85+6 | 1.34+7 | 8.54+6 | 1.08+7 | 1.47+7 | 6.97+6 | 1.33+7 | 9.87+6 | 1.01+7 |
| A | POINT BEACH 2 | P | 2008 | (a) | | | | | | | | | | |
| A | PRAIRIE ISL 1 | P | 2008 | 120 | 2.12+7 | 7.31+6 | 1.65+7 | 9.63+6 | 1.25+7 | 2.07+7 | 9.66+6 | 1.89+7 | 1.40+7 | 1.37+7 |
| A | PRAIRIE ISL 2 | P | 2008 | (a) | | | | | | | | | | |
| B | QUAD CITIES 1 | B | 2007 | 480 | 7.69+6 | 4.20+6 | 7.67+6 | 6.06+6 | 7.16+6 | 3.69+6 | 2.14+6 | 3.17+6 | 2.49+6 | 2.68+6 |
| B | QUAD CITIES 2 | B | 2007 | (a) | | | | | | | | | | |
| | RANCHO SECO 1 | P | 2008 | 138 | 2.78+7 | 8.16+6 | 1.67+7 | 9.70+6 | 1.73+7 | 2.03+7 | 8.05+6 | 1.41+7 | 9.45+6 | 1.15+7 |
| | ROBINSON 2 | P | 2007 | 96 | 5.20+6 | 5.59+6 | 1.28+7 | 9.23+6 | 9.00+6 | 7.77+6 | 5.36+6 | 1.07+7 | 8.49+6 | 7.79+6 |
| | RVR BEND 1 | B | 2025 | 384 | 2.45+7 | 9.01+6 | 2.02+7 | 1.10+7 | 1.53+7 | 7.42+6 | 3.93+6 | 7.15+6 | 5.43+6 | 5.42+6 |
| | SALEM 1 | P | 2016 | 160 | 3.33+7 | 1.39+7 | 3.15+7 | 1.65+7 | 2.30+7 | 2.69+7 | 1.39+7 | 2.80+7 | 2.06+7 | 2.02+7 |
| | SALEM 2 | P | 2020 | 168 | 3.49+7 | 1.57+7 | 3.58+7 | 1.80+7 | 2.62+7 | 2.19+7 | 1.20+7 | 2.44+7 | 1.80+7 | 1.77+7 |

TABLE A1. COST TO PROVIDE THE ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS STORAGE OPTIONS (1983 DOLLARS) (cont'd)

| | PLANT NAME | TYPE | SHUTDOWN YEAR | LOW DEN RACKS NEEDED | BUILT NOW | | | | | BUILT WHEN NEEDED (10% DISCOUNT RATE) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | POOL | DRYWELL | VAULT | CASK | SILO | POOL | DRYWELL | VAULT | CASK | SILO |
| E | SAN ONOFRE 1 | P | 1999 | 270 | 3.25+7 | 1.37+7 | 3.73+7 | 2.75+7 | 2.53+7 | 2.91+7 | 1.65+7 | 3.65+7 | 3.16+7 | 2.45+7 |
| E | SAN ONOFRE 2 | P | 2012 | (a) | | | | | | | | | | |
| E | SAN ONOFRE 3 | P | 2013 | (a) | | | | | | | | | | |
| | SEABROOK 1 | P | 2031 | 128 | 3.00+7 | 1.31+7 | 3.00+7 | 1.40+7 | 2.21+7 | 9.67+6 | 5.38+6 | 1.08+7 | 7.81+6 | 7.74+6 |
| A | SEQUOYAH 1 | P | 2021 | 240 | 5.38+7 | 2.37+7 | 5.38+7 | 3.39+7 | 3.49+7 | 3.80+7 | 2.21+7 | 3.98+7 | 4.15+7 | 2.70+7 |
| A | SEQUOYAH 2 | P | 2022 | (a) | | | | | | | | | | |
| | SHOREHAM | B | 2027 | 368 | 2.40+7 | 9.11+6 | 2.02+7 | 1.04+7 | 1.51+7 | 8.01+6 | 4.23+6 | 7.79+6 | 5.87+6 | 5.87+6 |
| | SOUTH TEXAS 1 | P | 2027 | 104 | 1.42+7 | 6.66+6 | 1.38+7 | 9.79+6 | 1.24+7 | 1.71+6 | 1.06+6 | 1.50+6 | 1.21+6 | 1.29+6 |
| | SOUTH TEXAS 2 | P | 2028 | 104 | 1.42+7 | 6.55+6 | 1.35+7 | 9.59+6 | 1.22+7 | 1.60+6 | 1.00+6 | 1.40+6 | 1.14+6 | 1.22+6 |
| | ST LUCIE 1 | P | 2010 | 152 | 8.85+6 | 7.07+6 | 1.63+7 | 1.15+7 | 9.35+6 | 2.65+6 | 2.32+6 | 7.06+6 | 5.15+6 | 4.35+6 |
| | ST LUCIE 2 | P | 2023 | 144 | 3.53+7 | 1.12+7 | 2.53+7 | 1.23+7 | 1.93+7 | 2.06+7 | 9.66+6 | 1.88+7 | 1.37+7 | 1.39+7 |
| | SUMMER 1 | P | 2024 | 136 | 3.27+7 | 1.12+7 | 2.56+7 | 1.43+7 | 1.97+7 | 1.07+7 | 5.13+6 | 9.65+6 | 7.17+6 | 7.26+6 |
| A | SURRY 1 | P | 2012 | 159 | 1.66+7 | 5.19+6 | 1.01+7 | 6.56+6 | 1.05+7 | 4.79+6 | 2.21+6 | 3.42+6 | 2.49+6 | 2.90+6 |
| A | SURRY 2 | P | 2013 | (a) | | | | | | | | | | |
| B | SUSQUEHANNA 1 | B | 2022 | 696 | 4.07+7 | 1.88+7 | 4.05+7 | 2.49+7 | 2.73+7 | 1.93+7 | 1.16+7 | 2.44+7 | 2.08+7 | 1.67+7 |
| B | SUSQUEHANNA 2 | B | 2024 | (a) | | | | | | | | | | |
| | THREE MILE ISL 1 | P | 2008 | 148 | 2.10+7 | 4.76+6 | 9.19+6 | 4.86+6 | 1.07+7 | 1.10+7 | 4.11+6 | 6.75+6 | 4.43+6 | 5.68+6 |
| | TROJAN | P | 2011 | 98 | 1.40+7 | 6.51+6 | 1.38+7 | 9.34+6 | 1.24+7 | 7.55+6 | 3.52+6 | 6.20+6 | 4.41+6 | 4.95+6 |
| E | TURKEY PT 3 | P | 2007 | 144 | 1.65+7 | 9.33+6 | 1.99+7 | 1.45+7 | 1.68+7 | 1.12+7 | 5.75+6 | 1.05+7 | 7.78+6 | 8.15+6 |
| E | TURKEY PT 4 | P | 2007 | (a) | | | | | | | | | | |
| B | VOGTLE 1 | P | 2027 | 252 | 5.22+7 | 2.10+7 | 5.19+7 | 3.62+7 | 3.25+7 | 1.40+7 | 8.01+6 | 1.73+7 | 1.50+7 | 1.18+7 |
| B | VOGTLE 2 | P | 2028 | (a) | | | | | | | | | | |
| | VT YANKEE 1 | B | 2012 | 264 | 1.42+7 | 6.60+6 | 1.38+7 | 8.85+6 | 1.26+7 | 1.21+7 | 5.41+6 | 9.64+6 | 6.68+6 | 7.68+6 |
| | WASH NUCLEAR 2 | B | 2023 | 312 | 1.65+7 | 8.24+6 | 1.95+7 | 9.97+6 | 1.38+7 | 1.07+7 | 6.45+6 | 1.32+7 | 9.85+6 | 9.46+6 |
| | WATERFORD 3 | P | 2024 | 176 | 3.53+7 | 1.41+7 | 3.19+7 | 1.63+7 | 2.37+7 | 1.38+7 | 7.18+6 | 1.40+7 | 1.03+7 | 1.03+7 |
| A | WATTS BAR 1 | P | 2026 | 240 | 5.62+7 | 2.44+7 | 5.62+7 | 3.47+7 | 3.64+7 | 2.61+7 | 1.52+7 | 3.29+7 | 2.81+7 | 2.24+7 |
| A | WATTS BAR 2 | P | 2027 | (a) | | | | | | | | | | |
| | WOLF CREEK 1 | P | 2025 | 152 | 3.70+7 | 1.29+7 | 2.92+7 | 1.57+7 | 2.18+7 | 1.13+7 | 5.60+6 | 1.06+7 | 7.98+6 | 7.93+6 |
| | YANKEE-ROWE 1 | P | 2001 | 76 | 2.06+7 | 2.51+6 | 4.84+6 | 1.28+6 | 7.46+6 | 2.04+7 | 6.04+6 | 1.02+7 | 6.60+6 | 8.68+6 |
| A | ZION 1 | P | 2008 | 216 | 3.04+7 | 1.69+7 | 4.02+7 | 2.36+7 | 2.83+7 | 2.84+7 | 1.78+7 | 3.48+7 | 2.84+7 | 2.40+7 |
| A | ZION 2 | | 2008 | (a) | | | | | | | | | | |
| | TOTAL | | | | 2.34+9 | 9.86+8 | 2.24+9 | 1.30+9 | 1.68+9 | 1.38+9 | 7.40+8 | 1.38+9 | 1.13+9 | 1.01+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A2. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - POOL STORAGE OPTION(1983 DOLLARS).

| | PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | P | 120 | 7.27+7 | 3.49+7 | 1.77+7 | 5.42+5 | 9.08+7 | 5.78+7 | 4.03+7 | 1.86+7 | 2.34+7 | 2.32+7 |
| | ARK NUCLEAR 2 | P | 136 | 7.50+7 | 3.67+7 | 1.34+7 | 5.54+5 | 9.83+7 | 5.72+7 | 3.74+7 | 2.39+7 | 2.71+7 | 2.45+7 |
| | BEAVER VALLEY 1 | P | 138 | 9.08+7 | 3.92+7 | 1.88+7 | 6.21+5 | 1.25+8 | 7.07+7 | 4.69+7 | 3.46+7 | 3.21+7 | 2.87+7 |
| | BEAVER VALLEY 2 | P | 146 | 8.40+7 | 2.00+7 | 5.35+6 | 6.47+5 | 1.20+8 | 3.88+7 | 1.49+7 | 3.64+7 | 1.95+7 | 1.02+7 |
| | BELLEFONTE 1 | P | 168 | 1.11+8 | 2.55+7 | 6.72+6 | 7.34+5 | 1.50+8 | 4.78+7 | 1.83+7 | 4.02+7 | 2.30+7 | 1.23+7 |
| | BELLEFONTE 2 | P | 168 | 1.11+8 | 2.32+7 | 5.55+6 | 7.34+5 | 1.50+8 | 4.33+7 | 1.51+7 | 4.02+7 | 2.09+7 | 1.03+7 |
| | BIG ROCK 1 | B | 40 | 5.91+7 | 3.18+7 | 1.77+7 | 6.56+4 | 6.59+7 | 3.98+7 | 2.48+7 | 6.87+6 | 8.06+6 | 7.26+6 |
| A | BRAIDWOOD 1 | P | 252 | 1.99+8 | 7.61+7 | 3.51+7 | 1.03+6 | 2.35+8 | 1.11+8 | 6.58+7 | 3.74+7 | 3.58+7 | 3.17+7 |
| A | BRAIDWOOD 2 | P | (a) | | | | | | | | | | |
| B | BROWNS FERRY 1 | B | 684 | 8.27+7 | 2.94+7 | 1.13+7 | 1.32+6 | 1.01+8 | 4.16+7 | 1.87+7 | 1.99+7 | 1.35+7 | 8.69+6 |
| B | BROWNS FERRY 2 | B | (a) | | | | | | | | | | |
| | BROWNS FERRY 3 | B | 456 | 8.56+7 | 3.04+7 | 1.19+7 | 9.02+5 | 1.10+8 | 4.82+7 | 2.38+7 | 2.55+7 | 1.87+7 | 1.29+7 |
| | BRUNSWICK 1 | B | 376 | 9.46+7 | 5.46+7 | 3.46+7 | 7.59+5 | 1.09+8 | 6.69+7 | 4.59+7 | 1.47+7 | 1.31+7 | 1.21+7 |
| | | P | | 0.00+0 | | | | | | | | | |
| | BRUNSWICK 2 | B | 376 | 9.00+7 | 5.02+7 | 3.06+7 | 7.52+5 | 1.07+8 | 6.61+7 | 4.53+7 | 1.86+7 | 1.67+7 | 1.55+7 |
| | | P | | 0.00+0 | | | | | | | | | |
| A | BYRON 1 | P | 264 | 1.99+8 | 8.38+7 | 4.24+7 | 1.07+6 | 2.35+8 | 1.17+8 | 7.23+7 | 3.72+7 | 3.46+7 | 3.10+7 |
| A | BYRON 2 | P | (a) | | | | | | | | | | |
| | CALLAWAY 1 | P | 168 | 9.63+7 | 2.71+7 | 8.58+6 | 7.13+5 | 1.31+8 | 5.01+7 | 2.29+7 | 3.51+7 | 2.37+7 | 1.56+7 |
| B | CALVERT CLF 1 | P | 192 | 1.19+8 | 6.04+7 | 3.44+7 | 7.16+5 | 1.43+8 | 8.28+7 | 5.48+7 | 2.47+7 | 2.31+7 | 2.11+7 |
| B | CALVERT CLF 2 | P | (a) | | | | | | | | | | |
| | CATAWBA 1 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 6.42+5 | 5.46+7 | 8.39+6 | 1.41+6 | 5.52+7 | 8.79+6 | 2.05+6 |
| | CATAWBA 2 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 5.94+5 | 5.23+7 | 7.35+6 | 1.14+6 | 5.28+7 | 7.94+6 | 1.73+6 |
| | CLINTON 1 | B | 344 | 9.93+7 | 2.59+7 | 7.73+6 | 6.96+5 | 1.22+8 | 3.92+7 | 1.49+7 | 2.38+7 | 1.40+7 | 7.89+6 |
| B | COMANCHE PK 1 | P | 198 | 1.03+8 | 1.87+7 | 3.83+6 | 8.76+5 | 1.35+8 | 2.96+7 | 7.46+6 | 3.36+7 | 1.17+7 | 4.51+6 |
| B | COMANCHE PK 2 | P | (a) | | | | | | | | | | |
| A | COOK 1 | P | 256 | 7.92+7 | 3.48+7 | 1.61+7 | 1.12+6 | 1.10+8 | 6.19+7 | 3.80+7 | 3.18+7 | 2.82+7 | 2.30+7 |
| A | COOK 2 | P | (a) | | | | | | | | | | |
| | COOPER STN | B | 232 | 7.04+7 | 3.25+7 | 1.59+7 | 4.90+5 | 7.95+7 | 4.24+7 | 2.43+7 | 9.59+6 | 1.04+7 | 8.86+6 |
| | CRYSTAL RVR 3 | P | 72 | 7.04+7 | 2.20+7 | 7.41+6 | 3.34+5 | 8.40+7 | 3.26+7 | 1.39+7 | 1.39+7 | 1.09+7 | 6.79+6 |
| | DAVIS-BESSE 1 | P | 120 | 1.37+8 | 6.07+7 | 3.02+7 | 5.48+5 | 1.76+8 | 9.78+7 | 6.35+7 | 3.88+7 | 3.76+7 | 3.38+7 |
| | DIABLO CANYON 1 | P | 85 | 7.72+7 | 1.73+7 | 4.32+6 | 3.89+5 | 8.86+7 | 2.37+7 | 7.21+6 | 1.18+7 | 6.79+6 | 3.28+6 |
| | DIABLO CANYON 2 | P | 85 | 7.72+7 | 1.73+7 | 4.32+6 | 3.89+5 | 8.86+7 | 2.37+7 | 7.21+6 | 1.18+7 | 6.79+6 | 3.28+6 |
| | DRESDEN 1 | B | | 0.00+0 | | | | | | | | | |
| | DRESDEN 2 | B | 316 | 6.82+7 | 3.03+7 | 1.42+7 | 6.12+5 | 8.18+7 | 4.52+7 | 2.68+7 | 1.42+7 | 1.55+7 | 1.32+7 |
| | DRESDEN 3 | B | 316 | 6.36+7 | 2.63+7 | 1.14+7 | 6.12+5 | 7.72+7 | 3.97+7 | 2.19+7 | 1.42+7 | 1.40+7 | 1.11+7 |
| | DUANE ARNOLD | B | 256 | 7.04+7 | 2.95+7 | 1.31+7 | 5.30+5 | 8.86+7 | 4.93+7 | 3.00+7 | 1.87+7 | 2.03+7 | 1.75+7 |
| | ENRICO FERMI 2 | B | 552 | 1.43+8 | 5.24+7 | 2.29+7 | 1.08+6 | 1.80+8 | 8.55+7 | 5.07+7 | 3.80+7 | 3.42+7 | 2.89+7 |
| | FARLEY 1 | P | 136 | 5.91+7 | 1.86+7 | 6.19+6 | 6.13+5 | 7.95+7 | 3.49+7 | 1.65+7 | 2.10+7 | 1.70+7 | 1.10+7 |
| | FARLEY 2 | P | 136 | 5.46+7 | 1.59+7 | 4.86+6 | 6.13+5 | 7.50+7 | 3.07+7 | 1.34+7 | 2.10+7 | 1.54+7 | 9.16+6 |
| | FITZPATRICK | B | 360 | 8.75+7 | 3.69+7 | 1.71+7 | 7.30+5 | 1.12+8 | 5.80+7 | 3.42+7 | 2.51+7 | 2.18+7 | 1.79+7 |
| | FORT CALHOUN | P | 90 | 7.04+7 | 3.76+7 | 2.12+7 | 3.19+5 | 8.40+7 | 5.57+7 | 3.96+7 | 1.39+7 | 1.84+7 | 1.88+7 |
| | FT ST VRAIN | G | 240 | 0.00+0 | | | | | | | | | |
| | GINNA | P | 64 | 5.91+7 | 2.49+7 | 1.10+7 | 2.32+5 | 7.27+7 | 3.83+7 | 2.14+7 | 1.38+7 | 1.38+7 | 1.07+7 |
| | GRAND GULF 1 | B | 536 | 1.23+8 | 4.51+7 | 1.92+7 | 1.04+6 | 1.49+8 | 6.80+7 | 3.73+7 | 2.78+7 | 2.39+7 | 1.92+7 |
| | HADDAM NECK | P | 104 | 6.82+7 | 3.18+7 | 1.57+7 | 4.19+5 | 8.40+7 | 5.06+7 | 3.27+7 | 1.62+7 | 1.92+7 | 1.75+7 |
| | HARRIS 1 | P | 184 | 0.00+0 | | | 4.75+5 | | | | | | |
| | | B | | 0.00+0 | | | | | | | | | |

TABLE A2. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - POOL STORAGE OPTION(1983 DOLLARS) (cont'd)

| | PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| B | HATCH 1 | B | 588 | 7.27+7 | 2.96+7 | 1.28+7 | 1.14+6 | 8.99+7 | 4.24+7 | 2.13+7 | 1.83+7 | 1.40+7 | 9.72+6 |
| B | HATCH 2 | B | (a) | | | | | | | | | | |
| | HOPE CREEK | B | 464 | 9.76+7 | 2.49+7 | 7.19+6 | 9.22+5 | 1.21+8 | 3.80+7 | 1.40+7 | 2.46+7 | 1.40+7 | 7.71+6 |
| | HUMBOLDT BAY | B | | 0.00+0 | | | | | | | | | |
| | INDIAN PT 1 | P | | 0.00+0 | | | | | | | | | |
| | INDIAN PT 2 | P | 136 | 7.27+7 | 3.83+7 | 2.14+7 | 6.01+5 | 8.73+7 | 5.71+7 | 4.03+7 | 1.52+7 | 1.94+7 | 1.95+7 |
| | INDIAN PT 3 | P | 152 | 7.04+7 | 2.31+7 | 8.14+6 | 6.77+5 | 9.84+7 | 4.59+7 | 2.41+7 | 2.87+7 | 2.35+7 | 1.66+7 |
| | KEWAUNEE | P | 74 | 7.96+7 | 3.17+7 | 1.37+7 | 2.84+5 | 9.31+7 | 4.58+7 | 2.52+7 | 1.39+7 | 1.44+7 | 1.18+7 |
| | LACROSSE | B | 48 | 6.82+7 | 4.07+7 | 2.52+7 | 6.68+4 | 7.95+7 | 5.56+7 | 4.09+7 | 1.14+7 | 1.50+7 | 1.58+7 |
| B | LASALLE CTY 1 | B | 660 | 2.19+8 | 1.09+8 | 6.60+7 | 1.27+6 | 2.15+8 | 1.08+8 | 6.62+7 | 2.73+6 | 2.70+5 | 1.47+6 |
| B | LASALLE CTY 2 | B | (a) | | | | | | | | | | |
| | LIMERICK 1 | B | 448 | 1.35+8 | 5.36+7 | 2.56+7 | 8.93+5 | 1.63+8 | 8.23+7 | 5.22+7 | 2.84+7 | 2.98+7 | 2.75+7 |
| | LIMERICK 2 | B | 440 | 1.41+8 | 4.72+7 | 1.94+7 | 8.73+5 | 1.70+8 | 7.28+7 | 4.04+7 | 2.95+7 | 2.85+7 | 2.19+7 |
| | MAINE YANKEE | P | 148 | 7.27+7 | 3.49+7 | 1.77+7 | 5.25+5 | 9.31+7 | 6.01+7 | 4.25+7 | 2.09+7 | 2.57+7 | 2.54+7 |
| | MCGUIRE 1 | P | 144 | 8.55+7 | 2.50+7 | 8.11+6 | 6.42+5 | 1.17+8 | 4.51+7 | 2.01+7 | 3.19+7 | 2.07+7 | 1.26+7 |
| | MCGUIRE 2 | P | 144 | 8.86+7 | 2.43+7 | 7.48+6 | 6.42+5 | 1.20+8 | 4.34+7 | 1.84+7 | 3.19+7 | 1.97+7 | 1.15+7 |
| | MILLSTONE 1 | B | 196 | 1.02+8 | 6.37+7 | 4.44+7 | 4.05+5 | 1.05+8 | 6.46+7 | 4.43+7 | 3.31+6 | 1.30+6 | 3.05+5 |
| | MILLSTONE 2 | P | 156 | 8.63+7 | 3.64+7 | 1.69+7 | 6.13+5 | 1.18+8 | 6.80+7 | 4.54+7 | 3.24+7 | 3.22+7 | 2.91+7 |
| | MILLSTONE 3 | P | 168 | 6.59+7 | 1.23+7 | 2.52+6 | 7.45+5 | 9.28+7 | 2.40+7 | 6.98+6 | 2.76+7 | 1.24+7 | 5.20+6 |
| | MONTICELLO | B | 240 | 5.23+7 | 1.85+7 | 6.91+6 | 4.89+5 | 6.59+7 | 2.97+7 | 1.40+7 | 1.41+7 | 1.16+7 | 7.60+6 |
| | NINE MILE PT 1 | B | 184 | 6.59+7 | 3.27+7 | 1.70+7 | 3.80+5 | 7.95+7 | 4.91+7 | 3.23+7 | 1.40+7 | 1.67+7 | 1.56+7 |
| | NINE MILE PT 2 | B | 276 | 7.95+7 | 1.76+7 | 4.36+6 | 5.71+5 | 9.40+7 | 2.40+7 | 6.93+6 | 1.51+7 | 6.94+6 | 3.14+6 |
| A | NORTH ANNA 1 | P | 196 | 1.12+8 | 4.21+7 | 1.76+7 | 8.91+5 | 1.50+8 | 7.28+7 | 4.08+7 | 3.91+7 | 3.16+7 | 2.41+7 |
| A | NORTH ANNA 2 | P | (a) | | | | | | | | | | |
| A | OCONEE 1 | P | 180 | 1.31+8 | 7.47+7 | 4.84+7 | 8.01+5 | 1.51+8 | 8.90+7 | 5.90+7 | 2.17+7 | 1.51+7 | 1.14+7 |
| A | OCONEE 2 | P | (a) | | | | | | | | | | |
| | OCONEE 3 | P | 120 | 1.04+8 | 5.50+7 | 3.26+7 | 5.42+5 | 1.22+8 | 7.10+7 | 4.76+7 | 1.80+7 | 1.65+7 | 1.55+7 |
| | OYSTER CRK 1 | B | 256 | 6.82+7 | 3.68+7 | 2.09+7 | 5.11+5 | 7.95+7 | 5.16+7 | 3.54+7 | 1.18+7 | 1.53+7 | 1.51+7 |
| | PALISADES | P | 68 | 9.76+7 | 5.97+7 | 4.08+7 | 2.70+5 | 9.85+7 | 6.01+7 | 4.11+7 | 1.17+6 | 6.70+5 | 5.70+5 |
| | PALO VERDE 1 | P | 176 | 9.36+7 | 2.64+7 | 8.36+6 | 6.74+5 | 1.29+8 | 4.93+7 | 2.25+7 | 3.56+7 | 2.36+7 | 1.48+7 |
| | PALO VERDE 2 | P | 176 | 9.38+7 | 2.51+7 | 7.60+6 | 6.74+5 | 1.29+8 | 4.70+7 | 2.05+7 | 3.56+7 | 2.26+7 | 1.35+7 |
| | PALO VERDE 3 | P | 176 | 9.38+7 | 2.39+7 | 6.91+6 | 6.74+5 | 1.29+8 | 4.47+7 | 1.87+7 | 3.56+7 | 2.15+7 | 1.24+7 |
| | PEACHBOTTOM 2 | B | 456 | 7.04+7 | 3.25+7 | 1.59+7 | 9.02+5 | 9.14+7 | 5.22+7 | 3.22+7 | 2.19+7 | 2.06+7 | 1.72+7 |
| | PEACHBOTTOM 3 | B | 440 | 7.04+7 | 3.25+7 | 1.59+7 | 8.73+5 | 8.83+7 | 5.05+7 | 3.12+7 | 1.88+7 | 1.89+7 | 1.62+7 |
| | PERRY 1 | B | 448 | 8.96+7 | 2.13+7 | 5.68+6 | 8.93+5 | 1.14+8 | 3.33+7 | 1.13+7 | 2.50+7 | 1.29+7 | 6.48+6 |
| | PILGRIM 1 | B | 192 | 7.95+7 | 4.24+7 | 2.43+7 | 3.97+5 | 9.08+7 | 5.78+7 | 4.03+7 | 1.17+7 | 1.58+7 | 1.64+7 |
| A | POINT BEACH 1 | P | 98 | 7.27+7 | 3.66+7 | 1.94+7 | 3.64+5 | 8.68+7 | 5.21+7 | 3.38+7 | 1.45+7 | 1.59+7 | 1.47+7 |
| A | POINT BEACH 2 | P | (a) | | | | | | | | | | |
| A | PRAIRIE ISL 1 | P | 120 | 8.08+7 | 4.31+7 | 2.46+7 | 4.31+5 | 1.02+8 | 6.44+7 | 4.48+7 | 2.12+7 | 2.17+7 | 2.07+7 |
| A | PRAIRIE ISL 2 | P | (a) | | | | | | | | | | |
| B | QUAD CITIES 1 | B | 480 | 5.00+7 | 1.70+7 | 6.08+6 | 9.21+5 | 5.68+7 | 2.19+7 | 8.85+6 | 7.69+6 | 5.76+6 | 3.69+6 |
| B | QUAD CITIES 2 | B | (a) | | | | | | | | | | |
| | RANCHO SECO 1 | P | 138 | 5.46+7 | 1.92+7 | 7.12+6 | 6.19+5 | 8.18+7 | 4.52+7 | 2.68+7 | 2.78+7 | 2.66+7 | 2.03+7 |
| | ROBINSON 2 | P | 96 | 8.40+7 | 5.08+7 | 3.27+7 | 4.00+5 | 9.88+7 | 5.73+7 | 4.01+7 | 5.20+6 | 7.10+6 | 7.77+6 |
| | RVR BEND 1 | B | 384 | 9.10+7 | 2.35+7 | 6.85+6 | 7.81+5 | 1.15+8 | 3.65+7 | 1.35+7 | 2.45+7 | 1.38+7 | 7.42+6 |
| | SALEM 1 | P | 160 | 9.40+7 | 3.91+7 | 1.79+7 | 7.11+5 | 1.27+8 | 6.92+7 | 4.41+7 | 3.33+7 | 3.08+7 | 2.69+7 |
| | SALEM 2 | P | 168 | 9.85+7 | 3.36+7 | 1.28+7 | 7.45+5 | 1.33+8 | 6.19+7 | 3.40+7 | 3.49+7 | 2.90+7 | 2.19+7 |

TABLE A2. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - POOL STORAGE OPTION(1983 DOLLARS) (cont'd)

| PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| E SAN ONOFRE 1 | P | 270 | 6.77+7 | 3.70+7 | 2.08+7 | 9.56+5 | 9.92+7 | 6.85+7 | 4.90+7 | 3.25+7 | 3.25+7 | 2.91+7 |
| E SAN ONOFRE 2 | P | (a) | | | | | | | | | | |
| E SAN ONOFRE 3 | P | (a) | | | | | | | | | | |
| SEABROOK 1 | P | 128 | 1.11+8 | 2.54+7 | 6.85+6 | 5.74+5 | 1.41+8 | 4.25+7 | 1.60+7 | 3.00+7 | 1.77+7 | 9.67+6 |
| A SEQUOYAH 1 | P | 240 | 1.56+8 | 6.55+7 | 3.20+7 | 1.06+6 | 2.09+8 | 1.09+8 | 6.89+7 | 5.38+7 | 4.48+7 | 3.80+7 |
| A SEQUOYAH 2 | P | (a) | | | | | | | | | | |
| SHOREHAM | B | 368 | 1.00+8 | 2.60+7 | 7.79+6 | 7.38+5 | 1.23+8 | 3.95+7 | 1.51+7 | 2.40+7 | 1.42+7 | 8.01+6 |
| SOUTH TEXAS 1 | P | 184 | 5.46+7 | 7.61+6 | 1.17+6 | 5.51+5 | 6.82+7 | 1.20+7 | 2.33+6 | 1.42+7 | 4.94+6 | 1.71+6 |
| SOUTH TEXAS 2 | P | 184 | 5.46+7 | 7.25+6 | 1.06+6 | 5.46+5 | 6.82+7 | 1.14+7 | 2.12+6 | 1.42+7 | 4.73+6 | 1.60+6 |
| ST LUCIE 1 | P | 152 | 1.02+8 | 6.37+7 | 4.44+7 | 5.52+5 | 1.10+8 | 6.78+7 | 4.65+7 | 8.85+6 | 4.65+6 | 2.65+6 |
| ST LUCIE 2 | P | 144 | 9.74+7 | 3.20+7 | 1.20+7 | 5.25+5 | 1.32+8 | 5.91+7 | 3.21+7 | 3.53+7 | 2.78+7 | 2.66+7 |
| SUMMER 1 | P | 136 | 8.18+7 | 2.08+7 | 5.84+6 | 6.05+5 | 1.14+8 | 3.94+7 | 1.60+7 | 3.27+7 | 1.93+7 | 1.07+7 |
| A SURRY 1 | P | 159 | 4.55+7 | 1.11+7 | 2.87+6 | 7.03+5 | 6.14+7 | 2.01+7 | 6.96+6 | 1.66+7 | 9.68+6 | 4.79+6 |
| A SURRY 2 | P | (a) | | | | | | | | | | |
| B SUSQUEHANNA 1 | B | 696 | 1.49+8 | 5.18+7 | 2.06+7 | 1.31+6 | 1.88+8 | 7.89+7 | 3.86+7 | 4.07+7 | 2.84+7 | 1.93+7 |
| B SUSQUEHANNA 2 | B | (a) | | | | | | | | | | |
| THREE MILE ISL 1 | P | 148 | 5.60+7 | 1.62+7 | 5.53+6 | 6.54+5 | 7.04+7 | 3.25+7 | 1.59+7 | 2.10+7 | 1.70+7 | 1.10+7 |
| TROJAN | P | 96 | 6.14+7 | 2.10+7 | 7.64+6 | 4.37+5 | 7.50+7 | 3.21+7 | 1.48+7 | 1.40+7 | 1.15+7 | 7.55+6 |
| E TURKEY PT 3 | P | 144 | 5.68+7 | 2.19+7 | 8.85+6 | 6.39+5 | 7.27+7 | 3.66+7 | 1.94+7 | 1.65+7 | 1.54+7 | 1.12+7 |
| E TURKEY PT 4 | P | (a) | | | | | | | | | | |
| B VOGTLE 1 | P | 252 | 1.33+8 | 3.47+7 | 1.05+7 | 1.11+6 | 1.84+8 | 6.02+7 | 2.34+7 | 5.22+7 | 2.66+7 | 1.40+7 |
| B VOGTLE 2 | P | (a) | | | | | | | | | | |
| VT YANKEE 1 | B | 264 | 7.50+7 | 3.07+7 | 1.34+7 | 5.53+5 | 8.86+7 | 4.48+7 | 2.49+7 | 1.42+7 | 1.47+7 | 1.21+7 |
| WASH NUCLEAR 2 | B | 312 | 1.23+8 | 4.46+7 | 1.88+7 | 6.39+5 | 1.39+8 | 5.80+7 | 2.89+7 | 1.65+7 | 1.40+7 | 1.07+7 |
| WATERFORD 3 | P | 176 | 9.20+7 | 2.50+7 | 7.61+6 | 6.96+5 | 1.27+8 | 4.68+7 | 2.06+7 | 3.53+7 | 2.25+7 | 1.38+7 |
| A WATTS BAR 1 | P | 240 | 1.50+8 | 4.82+7 | 1.80+7 | 1.06+6 | 2.05+8 | 8.54+7 | 4.31+7 | 5.62+7 | 3.83+7 | 2.61+7 |
| A WATTS BAR 2 | P | (a) | | | | | | | | | | |
| WOLF CREEK 1 | P | 152 | 8.40+7 | 2.11+7 | 5.88+6 | 6.77+5 | 1.20+8 | 4.10+7 | 1.65+7 | 3.70+7 | 2.06+7 | 1.13+7 |
| YANKEE-ROWE 1 | P | 76 | 5.60+7 | 2.28+7 | 1.08+7 | 1.06+5 | 7.04+7 | 4.58+7 | 3.10+7 | 2.06+7 | 2.32+7 | 2.04+7 |
| A ZION 1 | P | 216 | 8.55+7 | 4.23+7 | 2.23+7 | 9.54+5 | 1.15+8 | 7.23+7 | 4.97+7 | 3.04+7 | 3.10+7 | 2.84+7 |
| A ZION 2 | P | (a) | | | | | | | | | | |
| TOTAL | | | 8.51+9 | 3.27+9 | 1.52+9 | 6.58+7 | 10.78+9 | 5.01+9 | 2.84+9 | 2.34+9 | 1.80+9 | 1.38+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A2a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - POOL OPTION
(1983 DOLLARS)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | 2008 | 377 | 1998 | 56 | 4.55+7 | 2.42+7 | 1.32+7 | 2.72+7 | 1.07+7 | 4.47+6 | 7.27+7 | 3.49+7 | 1.77+7 |
| | ARK NUCLEAR 2 | 2012 | 585 | 1999 | 56 | 4.55+7 | 2.09+7 | 9.91+6 | 2.95+7 | 9.75+6 | 3.50+6 | 7.50+7 | 3.07+7 | 1.34+7 |
| | BEAVER VALLEY 1 | 2016 | 853 | 1998 | 56 | 4.55+7 | 2.42+7 | 1.32+7 | 4.53+7 | 1.50+7 | 5.59+6 | 9.08+7 | 3.92+7 | 1.88+7 |
| | BEAVER VALLEY 2 | 2026 | 858 | 2009 | 56 | 4.55+7 | 1.28+7 | 3.82+6 | 3.85+7 | 7.19+6 | 1.53+6 | 8.40+7 | 2.00+7 | 5.35+6 |
| | BELLEFONTE 1 | 2028 | 1900 | 2009 | 63 | 5.60+7 | 1.57+7 | 4.70+6 | 5.47+7 | 9.79+6 | 2.02+6 | 1.11+8 | 2.55+7 | 6.72+6 |
| | BELLEFONTE 2 | 2030 | 1900 | 2011 | 63 | 5.60+7 | 1.43+7 | 3.89+6 | 5.47+7 | 8.88+6 | 1.67+6 | 1.11+8 | 2.32+7 | 5.55+6 |
| | BIG ROCK 1 | 2001 | 95 | 1995 | 56 | 4.55+7 | 2.54+7 | 1.45+7 | 1.36+7 | 6.41+6 | 3.15+6 | 5.91+7 | 3.18+7 | 1.77+7 |
| A | BRAIDWOOD 1 | 2026 | 3627 | 1996 | 72 | 8.56+7 | 4.54+7 | 2.48+7 | 1.13+8 | 3.07+7 | 1.03+7 | 1.99+8 | 7.61+7 | 3.51+7 |
| A | BRAIDWOOD 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| B | BROWNS FERRY 1 | 2014 | 3226 | 2002 | 59 | 5.11+7 | 2.02+7 | 8.36+6 | 3.16+7 | 9.24+6 | 2.93+6 | 8.27+7 | 2.94+7 | 1.13+7 |
| B | BROWNS FERRY 2 | 2014 | (a) | | | | | | | | | 0.00+0 | | |
| | BROWNS FERRY 3 | 2017 | 2441 | 2001 | 57 | 4.74+7 | 1.97+7 | 8.53+6 | 3.82+7 | 1.07+7 | 3.36+6 | 8.56+7 | 3.04+7 | 1.19+7 |
| | BRUNSWICK 1 | 2010 | 2401 | 1998 | 57 | 4.72+7 | 3.36+7 | 2.42+7 | 4.74+7 | 2.10+7 | 1.04+7 | 9.46+7 | 5.46+7 | 3.46+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| | BRUNSWICK 2 | 2010 | 2281 | 1991 | 56 | 4.62+7 | 3.13+7 | 2.16+7 | 4.38+7 | 1.89+7 | 9.00+6 | 9.00+7 | 5.02+7 | 3.06+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| A | BYRON 1 | 2024 | 3627 | 1994 | 72 | 8.56+7 | 5.00+7 | 3.00+7 | 1.13+8 | 3.38+7 | 1.24+7 | 1.99+8 | 8.38+7 | 4.24+7 |
| A | BYRON 2 | 2026 | (a) | | | | | | | | | 0.00+0 | | |
| | CALLAWAY 1 | 2024 | 1129 | 2005 | 57 | 4.90+7 | 1.68+7 | 6.02+6 | 4.73+7 | 1.03+7 | 2.56+6 | 9.63+7 | 2.71+7 | 8.58+6 |
| B | CALVERT CLF 1 | 2014 | 2213 | 1992 | 62 | 5.59+7 | 3.60+7 | 2.37+7 | 6.32+7 | 2.44+7 | 1.07+7 | 1.19+8 | 6.04+7 | 3.44+7 |
| B | CALVERT CLF 2 | 2016 | (a) | | | | | | | | | 0.00+0 | | |
| | CATAWBA 1 | 2025 | 0 | 2025 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CATAWBA 2 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CLINTON 1 | 2027 | 2672 | 2006 | 57 | 4.82+7 | 1.57+7 | 5.38+6 | 5.11+7 | 1.02+7 | 2.35+6 | 9.93+7 | 2.59+7 | 7.73+6 |
| B | COMANCHE PK 1 | 2030 | 2007 | 2015 | 64 | 5.84+7 | 1.23+7 | 2.77+6 | 4.43+7 | 6.44+6 | 1.06+6 | 1.03+8 | 1.87+7 | 3.83+6 |
| B | COMANCHE PK 2 | 2030 | (a) | | | | | | | | | 0.00+0 | | |
| A | COOK 1 | 2009 | 1241 | 1998 | 56 | 5.06+7 | 2.44+7 | 1.21+7 | 2.86+7 | 1.04+7 | 4.04+6 | 7.92+7 | 3.48+7 | 1.61+7 |
| A | COOK 2 | 2009 | (a) | | | | | | | | | 0.00+0 | | |
| | COOPER STN | 2008 | 1238 | 1997 | 56 | 4.55+7 | 2.30+7 | 1.20+7 | 2.49+7 | 9.51+6 | 3.88+6 | 7.04+7 | 3.25+7 | 1.59+7 |
| | CRYSTAL RVR 3 | 2016 | 432 | 2005 | 56 | 4.55+7 | 1.56+7 | 5.60+6 | 2.49+7 | 6.44+6 | 1.81+6 | 7.04+7 | 2.20+7 | 7.41+6 |
| | DAVIS-BESSE 1 | 2017 | 2490 | 1995 | 67 | 6.70+7 | 3.73+7 | 2.13+7 | 7.02+7 | 2.34+7 | 8.92+6 | 1.37+8 | 6.07+7 | 3.02+7 |
| | DIABLO CANYON 1 | 2025 | 517 | 2011 | 56 | 4.55+7 | 1.16+7 | 3.16+6 | 3.17+7 | 5.72+6 | 1.16+6 | 7.72+7 | 1.73+7 | 4.32+6 |
| | DIABLO CANYON 2 | 2025 | 517 | 2011 | 56 | 4.55+7 | 1.16+7 | 3.16+6 | 3.17+7 | 5.72+6 | 1.16+6 | 7.72+7 | 1.73+7 | 4.32+6 |
| | DRESDEN 1 | 1984 | 0 | | | | | | | | | 0.00+0 | | |
| | DRESDEN 2 | 2008 | 1015 | 1998 | 56 | 4.55+7 | 2.19+7 | 1.09+7 | 2.27+7 | 8.42+6 | 3.33+6 | 6.82+7 | 3.03+7 | 1.42+7 |
| | DRESDEN 3 | 2008 | 693 | 2000 | 56 | 4.55+7 | 1.99+7 | 9.01+6 | 1.81+7 | 6.39+6 | 2.39+6 | 6.36+7 | 2.63+7 | 1.14+7 |
| | DUANE ARNOLD | 2010 | 998 | 1999 | 56 | 4.55+7 | 2.09+7 | 9.91+6 | 2.49+7 | 8.62+6 | 3.20+6 | 7.04+7 | 2.95+7 | 1.31+7 |
| | ENRICO FERMI 2 | 2025 | 5355 | 1997 | 64 | 5.93+7 | 3.00+7 | 1.56+7 | 8.35+7 | 2.24+7 | 7.30+6 | 1.43+8 | 5.24+7 | 2.29+7 |
| | FARLEY 1 | 2012 | 298 | 2006 | 56 | 4.55+7 | 1.48+7 | 5.09+6 | 1.36+7 | 3.76+6 | 1.10+6 | 5.91+7 | 1.86+7 | 6.19+6 |
| | FARLEY 2 | 2012 | 140 | 2009 | 56 | 4.55+7 | 1.35+7 | 4.20+6 | 9.07+6 | 2.37+6 | 6.63+5 | 5.46+7 | 1.59+7 | 4.86+6 |
| | FITZPATRICK | 2015 | 2248 | 1997 | 56 | 4.61+7 | 2.33+7 | 1.21+7 | 4.14+7 | 1.36+7 | 4.97+6 | 8.75+7 | 3.69+7 | 1.71+7 |
| | FORT CALHOUN | 2008 | 413 | 1994 | 56 | 4.55+7 | 2.66+7 | 1.60+7 | 2.49+7 | 1.10+7 | 5.16+6 | 7.04+7 | 3.76+7 | 2.12+7 |
| | FT ST VRAIN | 2007 | | | | | | | | | | 0.00+0 | | |
| | GINNA | 2006 | 219 | 2000 | 56 | 4.55+7 | 1.99+7 | 9.01+6 | 1.36+7 | 5.02+6 | 1.95+6 | 5.91+7 | 2.49+7 | 1.10+7 |
| | GRAND GULF 1 | 2022 | 4392 | 1998 | 62 | 5.46+7 | 2.63+7 | 1.31+7 | 6.79+7 | 1.88+7 | 6.08+6 | 1.23+8 | 4.51+7 | 1.92+7 |
| | HADDAM NECK | 2007 | 319 | 1997 | 56 | 4.55+7 | 2.30+7 | 1.20+7 | 2.27+7 | 8.84+6 | 3.67+6 | 6.82+7 | 3.18+7 | 1.57+7 |
| | HARRIS 1 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | | |
| | | | - | - | | | | | | | | 0.00+0 | | |

TABLE A2a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - POOL OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| B | HATCH 1 | 2009 | 2874 | 2000 | 58 | 4.98+7 | 2.17+7 | 9.86+6 | 2.29+7 | 7.88+6 | 2.90+6 | 7.27+7 | 2.98+7 | 1.28+7 |
| B | HATCH 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| | HOPE CREEK | 2026 | 2820 | 2007 | 58 | 4.96+7 | 1.54+7 | 5.04+6 | 4.80+7 | 9.48+6 | 2.15+6 | 9.76+7 | 2.49+7 | 7.19+6 |
| | HUMBOLDT BAY | 1976 | 0 | - | | | | | | | | 0.00+0 | | |
| | INDIAN PT 1 | 1980 | 0 | - | | | | | | | | 0.00+0 | | |
| | INDIAN PT 2 | 2008 | 493 | 1994 | 56 | 4.55+7 | 2.66+7 | 1.60+7 | 2.72+7 | 1.17+7 | 5.41+6 | 7.27+7 | 3.83+7 | 2.14+7 |
| | INDIAN PT 3 | 2015 | 536 | 2004 | 56 | 4.55+7 | 1.63+7 | 6.15+6 | 2.49+7 | 6.76+6 | 1.99+6 | 7.04+7 | 2.31+7 | 8.14+6 |
| | KEWAUNEE | 2014 | 579 | 1999 | 56 | 4.55+7 | 2.09+7 | 9.91+6 | 3.40+7 | 1.08+7 | 3.75+6 | 7.95+7 | 3.17+7 | 1.37+7 |
| | LACROSSE | 2002 | 205 | 1992 | 56 | 4.55+7 | 2.94+7 | 1.93+7 | 2.27+7 | 1.13+7 | 5.91+6 | 6.82+7 | 4.07+7 | 2.52+7 |
| B | LASALLE CTY 1 | 2022 | 9824 | 1998 | 76 | 9.02+7 | 6.41+7 | 4.63+7 | 1.29+8 | 4.53+7 | 1.97+7 | 2.19+8 | 1.09+8 | 6.60+7 |
| B | LASALLE CTY 2 | 2023 | (a) | | | | | | | | | 0.00+0 | | |
| | LIMERICK 1 | 2024 | 4098 | 1995 | 61 | 5.89+7 | 3.00+7 | 1.72+7 | 8.11+7 | 2.36+7 | 8.35+6 | 1.35+8 | 5.36+7 | 2.56+7 |
| | LIMERICK 2 | 2029 | 4236 | 1998 | 61 | 5.42+7 | 2.61+7 | 1.30+7 | 8.72+7 | 2.11+7 | 6.38+6 | 1.41+8 | 4.72+7 | 1.94+7 |
| | MAINE YANKEE | 2008 | 632 | 1998 | 56 | 4.55+7 | 2.42+7 | 1.32+7 | 2.72+7 | 1.07+7 | 4.47+6 | 7.27+7 | 3.49+7 | 1.77+7 |
| | MCGUIRE 1 | 2021 | 985 | 2005 | 57 | 4.74+7 | 1.62+7 | 5.62+6 | 3.81+7 | 8.82+6 | 2.29+6 | 8.55+7 | 2.50+7 | 8.11+6 |
| | MCGUIRE 2 | 2023 | 989 | 2006 | 57 | 4.77+7 | 1.55+7 | 5.33+6 | 4.09+7 | 8.82+6 | 2.15+6 | 8.86+7 | 2.43+7 | 7.48+6 |
| | MILLSTONE 1 | 2010 | 2480 | 1987 | 57 | 4.72+7 | 3.74+7 | 3.00+7 | 5.45+7 | 2.63+7 | 1.44+7 | 1.02+8 | 6.37+7 | 4.44+7 |
| | MILLSTONE 2 | 2015 | 823 | 1997 | 56 | 4.55+7 | 2.30+7 | 1.20+7 | 4.08+7 | 1.34+7 | 4.89+6 | 8.63+7 | 3.64+7 | 1.69+7 |
| | MILLSTONE 3 | 2025 | 541 | 2016 | 56 | 4.55+7 | 9.16+6 | 1.96+6 | 2.04+7 | 3.22+6 | 5.62+5 | 6.59+7 | 1.23+7 | 2.52+6 |
| | MONTICELLO | 2007 | 365 | 2004 | 56 | 4.55+7 | 1.63+7 | 6.15+6 | 6.80+6 | 2.22+6 | 7.62+5 | 5.23+7 | 1.85+7 | 6.91+6 |
| | NINE MILE PT 1 | 2005 | 884 | 1998 | 56 | 4.55+7 | 2.42+7 | 1.32+7 | 2.04+7 | 8.54+6 | 3.78+6 | 6.59+7 | 3.27+7 | 1.70+7 |
| | NINE MILE PT 2 | 2026 | 1971 | 2011 | 56 | 4.55+7 | 1.16+7 | 3.16+6 | 3.40+7 | 6.00+6 | 1.20+6 | 7.95+7 | 1.76+7 | 4.36+6 |
| A | NORTH ANNA 1 | 2018 | 1868 | 1999 | 63 | 5.67+7 | 2.60+7 | 1.23+7 | 5.51+7 | 1.61+7 | 5.28+6 | 1.12+8 | 4.21+7 | 1.76+7 |
| A | NORTH ANNA 2 | 2020 | (a) | | | | | | | | | 0.00+0 | | |
| A | OCONEE 1 | 2013 | 2102 | 1989 | 64 | 5.91+7 | 4.41+7 | 3.33+7 | 7.14+7 | 3.06+7 | 1.51+7 | 1.31+8 | 7.47+7 | 4.84+7 |
| A | OCONEE 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| | OCONEE 3 | 2014 | 1021 | 1991 | 57 | 4.83+7 | 3.27+7 | 2.25+7 | 5.61+7 | 2.23+7 | 1.01+7 | 1.04+8 | 5.50+7 | 3.26+7 |
| | OYSTER CRK 1 | 2004 | 912 | 1994 | 56 | 4.55+7 | 2.66+7 | 1.60+7 | 2.27+7 | 1.02+7 | 4.88+6 | 6.82+7 | 3.68+7 | 2.09+7 |
| | PALISADES | 2011 | 835 | 1998 | 56 | 4.55+7 | 3.57+7 | 2.83+7 | 5.21+7 | 2.40+7 | 1.25+7 | 9.76+7 | 5.97+7 | 4.08+7 |
| | PALO VERDE 1 | 2024 | 1117 | 2005 | 57 | 4.78+7 | 1.64+7 | 5.88+6 | 4.58+7 | 9.96+6 | 2.48+6 | 9.36+7 | 2.64+7 | 8.36+6 |
| | PALO VERDE 2 | 2025 | 1121 | 2006 | 57 | 4.79+7 | 1.56+7 | 5.35+6 | 4.59+7 | 9.50+6 | 2.25+6 | 9.38+7 | 2.51+7 | 7.60+6 |
| | PALO VERDE 3 | 2026 | 1121 | 2007 | 57 | 4.79+7 | 1.48+7 | 4.86+6 | 4.59+7 | 9.05+6 | 2.05+6 | 9.38+7 | 2.39+7 | 6.91+6 |
| | PEACHBOTTOM 2 | 2008 | 1812 | 1997 | 56 | 4.55+7 | 2.30+7 | 1.20+7 | 2.49+7 | 9.51+6 | 3.88+6 | 7.04+7 | 3.25+7 | 1.59+7 |
| | PEACHBOTTOM 3 | 2008 | 1589 | 1997 | 56 | 4.55+7 | 2.30+7 | 1.20+7 | 2.49+7 | 9.51+6 | 3.88+6 | 7.04+7 | 3.25+7 | 1.59+7 |
| | PERRY 1 | 2026 | 2548 | 2009 | 57 | 4.82+7 | 1.36+7 | 4.04+6 | 4.14+7 | 7.72+6 | 1.64+6 | 8.96+7 | 2.13+7 | 5.68+6 |
| | PILGRIM 1 | 2008 | 1512 | 1993 | 56 | 4.55+7 | 2.80+7 | 1.76+7 | 3.40+7 | 1.44+7 | 6.65+6 | 7.95+7 | 4.24+7 | 2.43+7 |
| A | POINT BEACH 1 | 2007 | 849 | 1995 | 56 | 4.55+7 | 2.54+7 | 1.45+7 | 2.72+7 | 1.12+7 | 4.92+6 | 7.27+7 | 3.66+7 | 1.94+7 |
| A | POINT BEACH 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| A | PRAIRIE ISL 1 | 2008 | 1142 | 1993 | 56 | 4.62+7 | 2.84+7 | 1.78+7 | 3.46+7 | 1.47+7 | 6.77+6 | 8.08+7 | 4.31+7 | 2.46+7 |
| A | PRAIRIE ISL 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| B | QUAD CITIES 1 | 2007 | 503 | 2005 | 56 | 4.55+7 | 1.56+7 | 5.60+6 | 4.53+6 | 1.44+6 | 4.83+5 | 5.00+7 | 1.70+7 | 6.08+6 |
| B | QUAD CITIES 2 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| | RANCHO SECO 1 | 2008 | 226 | 2004 | 56 | 4.55+7 | 1.63+7 | 6.15+6 | 9.07+6 | 2.88+6 | 9.71+5 | 5.46+7 | 1.92+7 | 7.12+6 |
| | ROBINSON 2 | 2007 | 668 | 1998 | 56 | 4.55+7 | 3.24+7 | 2.34+7 | 3.85+7 | 1.82+7 | 9.33+6 | 8.40+7 | 5.06+7 | 3.27+7 |
| | RVR BEND 1 | 2025 | 2452 | 2007 | 57 | 4.77+7 | 1.48+7 | 4.85+6 | 4.33+7 | 8.71+6 | 2.00+6 | 9.10+7 | 2.35+7 | 6.85+6 |
| | SALEM 1 | 2016 | 1007 | 1997 | 57 | 4.80+7 | 2.43+7 | 1.26+7 | 4.60+7 | 1.48+7 | 5.34+6 | 9.40+7 | 3.91+7 | 1.79+7 |
| | SALEM 2 | 2020 | 1168 | 2001 | 58 | 5.00+7 | 2.68+7 | 8.99+6 | 4.85+7 | 1.28+7 | 3.84+6 | 9.85+7 | 3.36+7 | 1.28+7 |

TABLE A2a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - POOL OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 2362 | 1995 | 63 | 5.62+7 | 3.13+7 | 1.79+7 | 1.15+7 | 5.70+6 | 2.92+6 | 6.77+7 | 3.70+7 | 2.08+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| E | SAN ONOFRE 3 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| | SEABROOK 1 | 2031 | 1261 | 2008 | 59 | 5.09+7 | 1.50+7 | 4.70+6 | 6.03+7 | 1.04+7 | 2.15+6 | 1.11+8 | 2.54+7 | 6.85+6 |
| A | SEQUOYAH 1 | 2021 | 2680 | 1995 | 68 | 7.04+7 | 3.92+7 | 2.24+7 | 8.55+7 | 2.63+7 | 9.59+6 | 1.56+8 | 6.55+7 | 3.20+7 |
| A | SEQUOYAH 2 | 2022 | (a) | | | | | | | | | 0.00+0 | | |
| | SHOREHAM | 2027 | 2635 | 2008 | 57 | 4.85+7 | 1.58+7 | 5.42+6 | 5.15+7 | 1.02+7 | 2.37+6 | 1.00+8 | 2.60+7 | 7.79+6 |
| | SOUTH TEXAS 1 | 2027 | 258 | 2023 | 56 | 4.55+7 | 6.47+6 | 1.01+6 | 9.07+6 | 1.14+6 | 1.59+5 | 5.46+7 | 7.61+6 | 1.17+6 |
| | SOUTH TEXAS 2 | 2028 | 258 | 2024 | 56 | 4.55+7 | 6.16+6 | 9.15+5 | 9.07+6 | 1.09+6 | 1.44+5 | 5.46+7 | 7.25+6 | 1.06+6 |
| | ST LUCIE 1 | 2010 | 1182 | 1987 | 57 | 4.72+7 | 3.74+7 | 3.00+7 | 5.45+7 | 2.63+7 | 1.44+7 | 1.02+8 | 6.37+7 | 4.44+7 |
| | ST LUCIE 2 | 2023 | 1126 | 2001 | 56 | 4.64+7 | 1.93+7 | 8.35+6 | 5.10+7 | 1.27+7 | 3.66+6 | 9.74+7 | 3.20+7 | 1.20+7 |
| | SUMMER 1 | 2024 | 761 | 2008 | 56 | 4.55+7 | 1.35+7 | 4.20+6 | 3.63+7 | 7.25+6 | 1.64+6 | 8.18+7 | 2.08+7 | 5.84+6 |
| A | SURRY 1 | 2012 | 97 | 2012 | 56 | 4.55+7 | 1.11+7 | 2.87+6 | 0.00+0 | 0.00+0 | 0.00+0 | 4.55+7 | 1.11+7 | 2.87+6 |
| A | SURRY 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| B | SUSQUEHANNA 1 | 2022 | 7288 | 2000 | 69 | 7.41+7 | 3.23+7 | 1.47+7 | 7.47+7 | 1.95+7 | 5.89+6 | 1.49+8 | 5.18+7 | 2.06+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | | | | | | | | | 0.00+0 | | |
| | THREE MILE ISL 1 | 2008 | 75 | 2006 | 56 | 4.55+7 | 1.48+7 | 5.09+6 | 4.53+6 | 1.37+6 | 4.39+5 | 5.00+7 | 1.62+7 | 5.53+6 |
| | TROJAN | 2011 | 373 | 2004 | 56 | 4.55+7 | 1.63+7 | 6.15+6 | 1.59+7 | 4.71+6 | 1.49+6 | 6.14+7 | 2.10+7 | 7.64+6 |
| E | TURKEY PT 3 | 2007 | 384 | 2002 | 56 | 4.55+7 | 1.80+7 | 7.45+6 | 1.13+7 | 3.88+6 | 1.40+6 | 5.68+7 | 2.19+7 | 8.85+6 |
| E | TURKEY PT 4 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| B | VOGTLE 1 | 2027 | 2495 | 2006 | 67 | 6.61+7 | 2.15+7 | 7.39+6 | 6.65+7 | 1.32+7 | 3.06+6 | 1.33+8 | 3.47+7 | 1.05+7 |
| B | VOGTLE 2 | 2028 | (a) | | | | | | | | | 0.00+0 | | |
| | VT YANKEE 1 | 2012 | 1068 | 1999 | 56 | 4.55+7 | 2.09+7 | 9.91+6 | 2.95+7 | 9.75+6 | 3.50+6 | 7.50+7 | 3.07+7 | 1.34+7 |
| | WASH NUCLEAR 2 | 2023 | 4018 | 1998 | 61 | 5.35+7 | 2.58+7 | 1.28+7 | 6.95+7 | 1.88+7 | 6.04+6 | 1.23+8 | 4.46+7 | 1.88+7 |
| | WATERFORD 3 | 2024 | 1143 | 2006 | 57 | 4.82+7 | 1.67+7 | 5.38+6 | 4.38+7 | 9.25+6 | 2.23+6 | 9.20+7 | 2.50+7 | 7.61+6 |
| A | WATTS BAR 1 | 2025 | 2691 | 2001 | 68 | 7.06+7 | 2.93+7 | 1.27+7 | 7.91+7 | 1.89+7 | 5.32+6 | 1.50+8 | 4.82+7 | 1.80+7 |
| A | WATTS BAR 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| | WOLF CREEK 1 | 2025 | 857 | 2008 | 56 | 4.55+7 | 1.35+7 | 4.20+6 | 3.85+7 | 7.55+6 | 1.68+6 | 8.40+7 | 2.11+7 | 5.88+6 |
| | YANKEE-ROWE 1 | 2001 | 38 | 1999 | 56 | 4.55+7 | 2.09+7 | 9.91+6 | 4.53+6 | 1.93+6 | 8.56+5 | 5.00+7 | 2.28+7 | 1.08+7 |
| A | ZION 1 | 2008 | 1295 | 1995 | 59 | 5.12+7 | 2.85+7 | 1.63+7 | 3.43+7 | 1.38+7 | 5.98+6 | 8.55+7 | 4.23+7 | 2.23+7 |
| A | ZION 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| | TOTAL | | | | | 4.73+9 | 2.14+9 | 1.10+9 | 3.78+9 | 1.13+9 | 4.18+8 | 8.51+9 | 3.27+9 | 1.52+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A2b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION-POOL OPTION
(1983 DOLLARS)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O $ M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | 2008 | 737 | (b) | 56 | 4.55+7 | 3.57+7 | 2.83+7 | 4.53+7 | 2.21+7 | 1.20+7 | 9.08+7 | 5.78+7 | 4.03+7 |
| | ARK NUCLEAR 2 | 2012 | 973 | 1989 | 56 | 4.58+7 | 3.42+7 | 2.59+7 | 5.25+7 | 2.30+7 | 1.15+7 | 9.83+7 | 5.72+7 | 3.74+7 |
| | BEAVER VALLEY 1 | 2016 | 1267 | (b) | 59 | 5.11+7 | 4.00+7 | 3.17+7 | 7.37+7 | 3.07+7 | 1.52+7 | 1.25+8 | 7.07+7 | 4.69+7 |
| | BEAVER VALLEY 2 | 2026 | 1296 | 2000 | 59 | 5.12+7 | 2.23+7 | 1.01+7 | 6.86+7 | 1.65+7 | 4.78+6 | 1.20+8 | 3.88+7 | 1.49+7 |
| | BELLEFONTE 1 | 2028 | 2404 | 2000 | 66 | 6.35+7 | 2.77+7 | 1.26+7 | 8.67+7 | 2.01+7 | 5.70+6 | 1.50+8 | 4.78+7 | 1.83+7 |
| | BELLEFONTE 2 | 2030 | 2404 | 2002 | 66 | 6.35+7 | 2.51+7 | 1.04+7 | 8.67+7 | 1.82+7 | 4.71+6 | 1.50+8 | 4.33+7 | 1.51+7 |
| | BIG ROCK 1 | 2001 | 175 | 1992 | 56 | 4.55+7 | 2.94+7 | 1.93+7 | 2.04+7 | 1.04+7 | 5.54+6 | 6.59+7 | 3.98+7 | 2.48+7 |
| A | BRAIDWOOD 1 | 2026 | 4383 | 1990 | 77 | 8.90+7 | 6.33+7 | 4.57+7 | 1.46+8 | 4.76+7 | 2.01+7 | 2.35+8 | 1.11+8 | 6.58+7 |
| A | BRAIDWOOD 2 | 2027 | (a) | 1990 | | | | | | | | | | |
| B | BROWNS FERRY 1 | 2014 | 4594 | 1998 | 62 | 5.55+7 | 2.67+7 | 1.33+7 | 4.58+7 | 1.49+7 | 5.36+6 | 1.01+8 | 4.16+7 | 1.87+7 |
| B | BROWNS FERRY 2 | 2014 | (a) | 1998 | | | | | | | | | | |
| | BROWNS FERRY 3 | 2017 | 3353 | 1995 | 59 | 5.16+7 | 2.87+7 | 1.84+7 | 5.86+7 | 1.95+7 | 7.44+6 | 1.10+8 | 4.82+7 | 2.38+7 |
| | BRUNSWICK 1 | 2010 | 3153 | (b) | 59 | 5.09+7 | 3.99+7 | 3.16+7 | 5.76+7 | 2.70+7 | 1.43+7 | 1.09+8 | 6.69+7 | 4.59+7 |
| | BRUNSWICK 2 | 2010 | 3033 | (b) | 58 | 5.04+7 | 3.95+7 | 3.13+7 | 5.68+7 | 2.66+7 | 1.40+7 | 1.07+8 | 6.61+7 | 4.53+7 |
| A | BYRON 1 | 2024 | 4413 | (b) | 77 | 8.87+7 | 6.48+7 | 4.80+7 | 1.46+8 | 5.25+7 | 2.43+7 | 2.35+8 | 1.17+8 | 7.23+7 |
| A | BYRON 2 | 2026 | (a) | (b) | | | | | | | | | | |
| | CALLAWAY 1 | 2024 | 1633 | 1996 | 61 | 5.33+7 | 2.82+7 | 1.54+7 | 7.74+7 | 2.19+7 | 7.46+6 | 1.31+8 | 5.01+7 | 2.29+7 |
| B | CALVERT CLF 1 | 2014 | 2789 | (b) | 66 | 6.30+7 | 4.81+7 | 3.73+7 | 8.01+7 | 3.47+7 | 1.75+7 | 1.43+8 | 8.28+7 | 5.48+7 |
| B | CALVERT CLF 2 | 2016 | (a) | (b) | | | | | | | | | | |
| | CATAWBA 1 | 2025 | 226 | 2021 | 56 | 4.55+7 | 7.13+6 | 1.22+6 | 9.07+6 | 1.26+6 | 1.92+5 | 5.46+7 | 8.39+6 | 1.41+6 |
| | CATAWBA 2 | 2026 | 210 | 2023 | 56 | 4.55+7 | 6.47+6 | 1.01+6 | 6.80+6 | 8.77+5 | 1.25+5 | 5.23+7 | 7.35+6 | 1.14+6 |
| | CLINTON 1 | 2027 | 3260 | 2000 | 59 | 5.12+7 | 2.23+7 | 1.01+7 | 7.12+7 | 1.69+7 | 4.82+6 | 1.22+8 | 3.92+7 | 1.49+7 |
| B | COMANCHE PK 1 | 2030 | 2661 | 2010 | 68 | 6.99+7 | 1.87+7 | 5.33+6 | 6.55+7 | 1.09+7 | 2.13+6 | 1.35+8 | 2.96+7 | 7.46+6 |
| B | COMANCHE PK 2 | 2030 | (a) | 2010 | | | | | | | | | | |
| A | COOK 1 | 2009 | 2009 | 1991 | 63 | 5.73+7 | 3.88+7 | 2.68+7 | 5.26+7 | 2.31+7 | 1.12+7 | 1.10+8 | 6.19+7 | 3.80+7 |
| A | COOK 2 | 2009 | (a) | 1991 | | | | | | | | | | |
| | COOPER STN | 2008 | 1702 | 1993 | 56 | 4.55+7 | 2.80+7 | 1.76+7 | 3.40+7 | 1.44+7 | 6.65+6 | 7.95+7 | 4.24+7 | 2.43+7 |
| | CRYSTAL RVR 3 | 2016 | 648 | 1999 | 56 | 4.55+7 | 2.09+7 | 9.91+6 | 3.85+7 | 1.17+7 | 3.96+6 | 8.40+7 | 3.26+7 | 1.39+7 |
| | DAVIS-BESSE 1 | 2017 | 2850 | 1988 | 69 | 7.57+7 | 5.70+7 | 4.35+7 | 9.98+7 | 4.08+7 | 2.00+7 | 1.76+8 | 9.78+7 | 6.35+7 |
| | DIABLO CANYON 1 | 2025 | 772 | 2006 | 56 | 4.55+7 | 1.48+7 | 5.09+6 | 4.31+7 | 8.92+6 | 2.12+6 | 8.86+7 | 2.37+7 | 7.21+6 |
| | DIABLO CANYON 2 | 2025 | 772 | 2006 | 56 | 4.55+7 | 1.48+7 | 5.09+6 | 4.31+7 | 8.92+6 | 2.12+6 | 8.86+7 | 2.37+7 | 7.21+6 |
| | DRESDEN 1 | 1984 | | | | | | | | | | | | |
| | DRESDEN 2 | 2008 | 1647 | 1992 | 56 | 4.55+7 | 2.94+7 | 1.93+7 | 3.63+7 | 1.58+7 | 7.52+6 | 8.18+7 | 4.52+7 | 2.68+7 |
| | DRESDEN 3 | 2006 | 1325 | 1994 | 56 | 4.55+7 | 2.66+7 | 1.60+7 | 3.17+7 | 1.31+7 | 5.85+6 | 7.72+7 | 3.97+7 | 2.19+7 |
| | DUANE ARNOLD | 2010 | 1510 | 1991 | 56 | 4.55+7 | 3.08+7 | 2.12+7 | 4.31+7 | 1.85+7 | 8.84+6 | 8.86+7 | 4.93+7 | 3.00+7 |
| | ENRICO FERMI 2 | 2025 | 6459 | 1998 | 67 | 6.77+7 | 4.81+7 | 3.48+7 | 1.12+8 | 3.74+7 | 1.59+7 | 1.80+8 | 8.55+7 | 5.07+7 |
| | FARLEY 1 | 2012 | 706 | 1997 | 56 | 4.55+7 | 2.30+7 | 1.20+7 | 3.40+7 | 1.19+7 | 4.54+6 | 7.95+7 | 3.49+7 | 1.65+7 |
| | FARLEY 2 | 2012 | 548 | 1999 | 56 | 4.55+7 | 2.09+7 | 9.91+6 | 2.95+7 | 9.75+6 | 3.50+6 | 7.50+7 | 3.07+7 | 1.34+7 |
| | FITZPATRICK | 2015 | 2966 | 1991 | 58 | 5.02+7 | 3.40+7 | 2.34+7 | 6.17+7 | 2.40+7 | 1.08+7 | 1.12+8 | 5.80+7 | 3.42+7 |
| | FORT CALHOUN | 2008 | 683 | (b) | 56 | 4.55+7 | 3.57+7 | 2.83+7 | 3.85+7 | 2.00+7 | 1.13+7 | 8.40+7 | 5.57+7 | 3.96+7 |
| | FT ST VRAIN | 2007 | | | | | | | | | | | | |
| | GINNA | 2006 | 411 | 1994 | 56 | 4.55+7 | 2.66+7 | 1.60+7 | 2.72+7 | 1.17+7 | 5.41+6 | 7.27+7 | 3.83+7 | 2.14+7 |
| | GRAND GULF 1 | 2022 | 5464 | 1992 | 64 | 5.96+7 | 3.84+7 | 2.53+7 | 8.97+7 | 2.96+7 | 1.20+7 | 1.49+8 | 6.80+7 | 3.73+7 |
| | HADDAM NECK | 2007 | 631 | 1990 | 56 | 4.55+7 | 3.24+7 | 2.34+7 | 3.85+7 | 1.82+7 | 9.33+6 | 8.40+7 | 5.06+7 | 3.27+7 |
| | HARRIS 1 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | | | |

TABLE A2b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION-POOL OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| B | HATCH 1 | 2009 | 4050 | 1998 | 61 | 5.37+7 | 2.85+7 | 1.58+7 | 3.62+7 | 1.39+7 | 5.74+6 | 8.99+7 | 4.24+7 | 2.13+7 |
| B | HATCH 2 | 2012 | (a) | 1998 | | | | | | | | | | |
| | HOPE CREEK | 2026 | 3748 | 2001 | 60 | 5.28+7 | 2.19+7 | 9.50+6 | 6.85+7 | 1.61+7 | 4.48+6 | 1.21+8 | 3.80+7 | 1.40+7 |
| | HUMBOLDT BAY | 1976 | | | | | | | | | | | | |
| | INDIAN PT 1 | 1980 | | | | | | | | | | | | |
| | INDIAN PT 2 | 2008 | 901 | (b) | 58 | 4.60+7 | 3.61+7 | 2.88+7 | 4.13+7 | 2.10+7 | 1.17+7 | 8.73+7 | 5.71+7 | 4.03+7 |
| | INDIAN PT 3 | 2015 | 992 | 1994 | 57 | 4.78+7 | 2.79+7 | 1.68+7 | 5.66+7 | 1.80+7 | 7.30+6 | 9.84+7 | 4.59+7 | 2.41+7 |
| | KEWAUNEE | 2014 | 801 | 1993 | 58 | 4.55+7 | 2.80+7 | 1.76+7 | 4.76+7 | 1.78+7 | 7.56+6 | 9.31+7 | 4.58+7 | 2.52+7 |
| | LACROSSE | 2002 | 301 | 1987 | 56 | 4.55+7 | 3.62+7 | 2.91+7 | 3.40+7 | 1.94+7 | 1.18+7 | 7.95+7 | 5.56+7 | 4.09+7 |
| B | LASALLE CTY 1 | 2022 | 11144 | (b) | 79 | 8.02+7 | 5.81+7 | 4.26+7 | 1.35+8 | 5.03+7 | 2.36+7 | 2.15+8 | 1.08+8 | 6.62+7 |
| B | LASALLE CTY 2 | 2023 | (a) | (b) | | | | | | | | | | |
| | LIMERICK 1 | 2024 | 4992 | 1988 | 63 | 5.75+7 | 4.43+7 | 3.46+7 | 1.05+8 | 3.88+7 | 1.76+7 | 1.63+8 | 8.23+7 | 5.22+7 |
| | LIMERICK 2 | 2029 | 5116 | 1991 | 64 | 5.80+7 | 3.92+7 | 2.70+7 | 1.12+8 | 3.38+7 | 1.34+7 | 1.70+8 | 7.28+7 | 4.04+7 |
| | MAINE YANKEE | 2008 | 1070 | 1987 | 56 | 4.55+7 | 3.62+7 | 2.91+7 | 4.76+7 | 2.39+7 | 1.34+7 | 9.31+7 | 6.01+7 | 4.25+7 |
| | MCGUIRE 1 | 2021 | 1397 | 1997 | 60 | 5.21+7 | 2.63+7 | 1.37+7 | 6.47+7 | 1.88+7 | 6.38+6 | 1.17+8 | 4.51+7 | 2.01+7 |
| | MCGUIRE 2 | 2023 | 1421 | 1998 | 60 | 5.22+7 | 2.51+7 | 1.25+7 | 6.77+7 | 1.83+7 | 5.88+6 | 1.20+8 | 4.34+7 | 1.84+7 |
| | MILLSTONE 1 | 2010 | 2872 | (b) | 58 | 4.94+7 | 3.87+7 | 3.08+7 | 5.52+7 | 2.59+7 | 1.37+7 | 1.05+8 | 6.46+7 | 4.43+7 |
| | MILLSTONE 2 | 2015 | 1291 | (b) | 58 | 4.97+7 | 3.89+7 | 3.09+7 | 6.84+7 | 2.91+7 | 1.45+7 | 1.18+8 | 6.80+7 | 4.54+7 |
| | MILLSTONE 3 | 2025 | 1045 | 2007 | 57 | 4.86+7 | 1.51+7 | 4.93+6 | 4.42+7 | 8.91+6 | 2.05+6 | 9.28+7 | 2.40+7 | 6.98+6 |
| | MONTICELLO | 2007 | 835 | 1998 | 56 | 4.55+7 | 2.19+7 | 1.09+7 | 2.84+7 | 7.75+6 | 3.12+6 | 6.59+7 | 2.97+7 | 1.40+7 |
| | NINE MILE PT 1 | 2005 | 1252 | 1990 | 56 | 4.55+7 | 3.24+7 | 2.34+7 | 3.40+7 | 1.67+7 | 8.85+6 | 7.95+7 | 4.91+7 | 3.23+7 |
| | NINE MILE PT 2 | 2026 | 2533 | 2007 | 57 | 4.80+7 | 1.49+7 | 4.87+6 | 4.60+7 | 9.07+6 | 2.06+6 | 9.40+7 | 2.40+7 | 6.93+6 |
| A | NORTH ANNA 1 | 2018 | 2451 | 1992 | 67 | 6.70+7 | 4.32+7 | 2.84+7 | 8.30+7 | 2.98+7 | 1.24+7 | 1.50+8 | 7.28+7 | 4.08+7 |
| A | NORTH ANNA 2 | 2020 | (a) | 1992 | | | | | | | | | | |
| A | OCONEE 1 | 2013 | 2641 | (b) | 68 | 6.97+7 | 5.29+7 | 4.06+7 | 8.17+7 | 3.61+7 | 1.84+7 | 1.51+8 | 8.90+7 | 5.90+7 |
| A | OCONEE 2 | 2013 | (a) | (b) | | | | | | | | | | |
| | OCONEE 3 | 2014 | 1381 | (b) | 59 | 5.20+7 | 4.07+7 | 3.23+7 | 6.99+7 | 3.03+7 | 1.53+7 | 1.22+8 | 7.10+7 | 4.76+7 |
| | OYSTER CRK 1 | 2004 | 1424 | 1989 | 56 | 4.55+7 | 3.40+7 | 2.57+7 | 3.40+7 | 1.76+7 | 9.73+6 | 7.95+7 | 5.16+7 | 3.54+7 |
| | PALISADES | 2011 | 1039 | (b) | 58 | 4.59+7 | 3.59+7 | 2.85+7 | 5.26+7 | 2.42+7 | 1.26+7 | 9.85+7 | 6.01+7 | 4.11+7 |
| | PALO VERDE 1 | 2024 | 1627 | 1998 | 60 | 5.24+7 | 2.78+7 | 1.52+7 | 7.61+7 | 2.15+7 | 7.33+6 | 1.29+8 | 4.93+7 | 2.25+7 |
| | PALO VERDE 2 | 2025 | 1631 | 1997 | 60 | 5.25+7 | 2.65+7 | 1.38+7 | 7.62+7 | 2.05+7 | 6.87+6 | 1.29+8 | 4.70+7 | 2.05+7 |
| | PALO VERDE 3 | 2026 | 1631 | 1998 | 60 | 5.25+7 | 2.52+7 | 1.26+7 | 7.62+7 | 1.95+7 | 6.06+6 | 1.29+8 | 4.47+7 | 1.87+7 |
| | PEACHBOTTOM 2 | 2008 | 2724 | 1991 | 57 | 4.91+7 | 3.32+7 | 2.29+7 | 4.23+7 | 1.90+7 | 9.32+6 | 9.14+7 | 5.22+7 | 3.22+7 |
| | PEACHBOTTOM 3 | 2008 | 2469 | 1991 | 57 | 4.76+7 | 3.22+7 | 2.22+7 | 4.07+7 | 1.83+7 | 8.97+6 | 8.83+7 | 5.05+7 | 3.12+7 |
| | PERRY 1 | 2026 | 3444 | 2003 | 59 | 5.19+7 | 1.98+7 | 7.72+6 | 6.18+7 | 1.37+7 | 3.55+6 | 1.14+8 | 3.33+7 | 1.13+7 |
| | PILGRIM 1 | 2008 | 1898 | 1988 | 56 | 4.55+7 | 3.57+7 | 2.83+7 | 4.53+7 | 2.21+7 | 1.20+7 | 9.08+7 | 5.78+7 | 4.03+7 |
| A | POINT BEACH 1 | 2007 | 1137 | 1990 | 57 | 4.69+7 | 3.33+7 | 2.41+7 | 3.99+7 | 1.88+7 | 9.67+6 | 8.68+7 | 5.21+7 | 3.38+7 |
| A | POINT BEACH 2 | 2008 | (a) | 1990 | | | | | | | | | | |
| A | PRAIRIE ISL 1 | 2008 | 1502 | 1988 | 58 | 5.02+7 | 3.93+7 | 3.12+7 | 5.14+7 | 2.51+7 | 1.38+7 | 1.02+8 | 6.44+7 | 4.48+7 |
| A | PRAIRIE ISL 2 | 2008 | (a) | 1988 | | | | | | | | | | |
| B | QUAD CITIES 1 | 2007 | 1463 | 2002 | 58 | 4.55+7 | 1.80+7 | 7.45+6 | 1.13+7 | 3.88+6 | 1.40+6 | 5.68+7 | 2.19+7 | 8.85+6 |
| B | QUAD CITIES 2 | 2007 | (a) | 2002 | | | | | | | | | | |
| | RANCHO SECO 1 | 2008 | 640 | 1992 | 58 | 4.55+7 | 2.94+7 | 1.93+7 | 3.63+7 | 1.58+7 | 7.52+6 | 8.18+7 | 4.52+7 | 2.68+7 |
| | ROBINSON 2 | 2007 | 958 | (b) | 56 | 4.56+7 | 3.58+7 | 2.83+7 | 4.32+7 | 2.15+7 | 1.18+7 | 8.88+7 | 5.73+7 | 4.01+7 |
| | RVR BEND 1 | 2025 | 3220 | 2001 | 59 | 5.13+7 | 2.13+7 | 9.22+6 | 6.34+7 | 1.52+7 | 4.27+6 | 1.15+8 | 3.65+7 | 1.35+7 |
| | SALEM 1 | 2016 | 1487 | 1989 | 60 | 5.27+7 | 3.93+7 | 2.98+7 | 7.39+7 | 2.99+7 | 1.43+7 | 1.27+8 | 6.92+7 | 4.41+7 |
| | SALEM 2 | 2020 | 1667 | 1992 | 61 | 5.41+7 | 3.49+7 | 2.29+7 | 7.88+7 | 2.70+7 | 1.11+7 | 1.33+8 | 6.19+7 | 3.40+7 |

TABLE A2b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION-POOL OPTION
(1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 3172 | 1989 | 67 | 6.72+7 | 5.01+7 | 3.79+7 | 3.20+7 | 1.84+7 | 1.11+7 | 9.92+7 | 6.85+7 | 4.90+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | 1989 | | | | | | | | | | |
| E | SAN ONOFRE 3 | 2013 | (a) | 1989 | | | | | | | | | | |
| | SEABROOK 1 | 2031 | 1645 | 2000 | 61 | 5.39+7 | 2.35+7 | 1.07+7 | 8.67+7 | 1.00+7 | 5.25+6 | 1.41+8 | 4.25+7 | 1.60+7 |
| A | SEQUOYAH 1 | 2021 | 3400 | 1989 | 72 | 8.66+7 | 6.44+7 | 4.85+7 | 1.22+8 | 4.48+7 | 2.04+7 | 2.09+8 | 1.09+8 | 6.89+7 |
| A | SEQUOYAH 2 | 2022 | (a) | 1989 | | | | | | | | | | |
| | SHOREHAM | 2027 | 3371 | 2000 | 59 | 5.15+7 | 2.25+7 | 1.02+7 | 7.18+7 | 1.70+7 | 4.86+6 | 1.23+8 | 3.95+7 | 1.51+7 |
| | SOUTH TEXAS 1 | 2027 | 570 | 2017 | 56 | 4.55+7 | 8.67+6 | 1.78+6 | 2.27+7 | 3.33+6 | 5.45+5 | 6.82+7 | 1.20+7 | 2.33+6 |
| | SOUTH TEXAS 2 | 2028 | 570 | 2018 | 56 | 4.55+7 | 8.26+6 | 1.62+6 | 2.27+7 | 3.17+6 | 4.96+5 | 6.82+7 | 1.14+7 | 2.12+6 |
| | ST LUCIE 1 | 2016 | 1638 | (b) | 59 | 5.15+7 | 4.04+7 | 3.20+7 | 5.85+7 | 2.74+7 | 1.45+7 | 1.10+8 | 6.78+7 | 4.65+7 |
| | ST LUCIE 2 | 2023 | 1558 | 1992 | 59 | 5.10+7 | 3.28+7 | 2.16+7 | 8.12+7 | 2.63+7 | 1.05+7 | 1.32+8 | 5.91+7 | 3.21+7 |
| | SUMMER 1 | 2024 | 1189 | 1999 | 58 | 5.00+7 | 2.29+7 | 1.09+7 | 6.39+7 | 1.65+7 | 5.05+6 | 1.14+8 | 3.94+7 | 1.60+7 |
| A | SURRY 1 | 2012 | 574 | 2005 | 56 | 4.55+7 | 1.56+7 | 5.66+6 | 1.59+7 | 4.48+6 | 1.36+6 | 6.14+7 | 2.01+7 | 6.96+6 |
| A | SURRY 2 | 2013 | (a) | 2005 | | | | | | | | | | |
| B | SUSQUEHANNA 1 | 2022 | 6680 | 1995 | 72 | 8.62+7 | 4.80+7 | 2.75+7 | 1.02+8 | 3.09+7 | 1.11+7 | 1.88+8 | 7.89+7 | 3.86+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | 1995 | | | | | | | | | | |
| | THREE MILE ISL 1 | 2008 | 513 | 1997 | 56 | 4.55+7 | 2.30+7 | 1.20+7 | 2.49+7 | 9.51+6 | 3.88+6 | 7.04+7 | 3.25+7 | 1.59+7 |
| | TROJAN | 2011 | 661 | 1998 | 56 | 4.55+7 | 2.19+7 | 1.09+7 | 2.95+7 | 1.02+7 | 3.85+6 | 7.50+7 | 3.21+7 | 1.48+7 |
| E | TURKEY PT 3 | 2007 | 816 | 1995 | 56 | 4.55+7 | 2.54+7 | 1.45+7 | 2.72+7 | 1.12+7 | 4.92+6 | 7.27+7 | 3.66+7 | 1.94+7 |
| E | TURKEY PT 4 | 2007 | (a) | 1995 | | | | | | | | | | |
| B | VOGTLE 1 | 2027 | 3251 | 2000 | 71 | 8.38+7 | 3.66+7 | 1.66+7 | 9.99+7 | 2.36+7 | 6.76+6 | 1.84+8 | 6.02+7 | 2.34+7 |
| B | VOGTLE 2 | 2028 | (a) | 2000 | | | | | | | | | | |
| | VT YANKEE 1 | 2012 | 1596 | 1993 | 56 | 4.55+7 | 2.80+7 | 1.76+7 | 4.31+7 | 1.68+7 | 7.31+6 | 8.86+7 | 4.48+7 | 2.49+7 |
| | WASH NUCLEAR 2 | 2023 | 4642 | 1994 | 62 | 5.57+7 | 3.26+7 | 1.95+7 | 8.32+7 | 2.54+7 | 9.43+6 | 1.39+8 | 5.80+7 | 2.89+7 |
| | WATERFORD 3 | 2024 | 1671 | 1997 | 60 | 5.27+7 | 2.66+7 | 1.39+7 | 7.39+7 | 2.02+7 | 6.65+6 | 1.27+8 | 4.68+7 | 2.06+7 |
| A | WATTS BAR 1 | 2025 | 3411 | 1994 | 73 | 8.68+7 | 5.07+7 | 3.04+7 | 1.18+8 | 3.47+7 | 1.27+7 | 2.05+8 | 8.54+7 | 4.31+7 |
| A | WATTS BAR 2 | 2027 | (a) | 1994 | | | | | | | | | | |
| | WOLF CREEK 1 | 2025 | 1313 | 1999 | 59 | 5.14+7 | 2.35+7 | 1.12+7 | 6.89+7 | 1.75+7 | 5.29+6 | 1.20+8 | 4.10+7 | 1.65+7 |
| | YANKEE-ROWE 1 | 2001 | 264 | 1990 | 56 | 4.55+7 | 3.24+7 | 2.34+7 | 2.49+7 | 1.34+7 | 7.55+6 | 7.04+7 | 4.58+7 | 3.10+7 |
| A | ZION 1 | 2008 | 1943 | 1988 | 63 | 5.68+7 | 4.39+7 | 3.43+7 | 5.81+7 | 2.84+7 | 1.54+7 | 1.15+8 | 7.23+7 | 4.97+7 |
| A | ZION 2 | 2008 | (a) | 1988 | | | | | | | | | | |
| | TOTAL | | | | | 5.13+9 | 3.04+9 | 1.98+9 | 5.65+9 | 1.97+9 | 8.56+8 | 10.78+9 | 5.01+9 | 2.84+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS; CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL; CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER; CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1.
(b) NEED ADDITIONAL SPACE AS OF 1986.

TABLE A3. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - DRYWELL STORAGE OPTION(1983 DOLLARS).

| | PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | P | 120 | 2.04+7 | 1.04+7 | 5.51+6 | 5.42+5 | 2.89+7 | 2.06+7 | 1.55+7 | 9.05+6 | 1.08+7 | 1.05+7 |
| | ARK NUCLEAR 2 | P | 136 | 2.25+7 | 9.81+6 | 4.52+6 | 5.54+5 | 3.25+7 | 2.16+7 | 1.54+7 | 1.08+7 | 1.23+7 | 1.14+7 |
| | BEAVER VALLEY 1 | P | 138 | 3.10+7 | 1.49+7 | 7.74+6 | 6.21+5 | 4.22+7 | 2.82+7 | 2.07+7 | 1.19+7 | 1.39+7 | 1.36+7 |
| | BEAVER VALLEY 2 | P | 148 | 2.97+7 | 7.77+6 | 2.22+6 | 6.47+5 | 4.14+7 | 1.57+7 | 6.62+6 | 1.23+7 | 8.56+6 | 5.05+6 |
| | BELLEFONTE 1 | P | 168 | 4.94+7 | 1.27+7 | 3.58+6 | 7.34+5 | 6.41+7 | 2.37+7 | 9.94+6 | 1.54+7 | 1.18+7 | 7.09+6 |
| | BELLEFONTE 2 | P | 168 | 4.94+7 | 1.15+7 | 2.96+6 | 7.34+5 | 6.41+7 | 2.16+7 | 8.22+6 | 1.54+7 | 1.08+7 | 6.00+6 |
| | BIG ROCK 1 | B | 40 | 1.89+7 | 1.03+7 | 5.86+6 | 6.56+4 | 1.96+7 | 1.23+7 | 7.95+6 | 8.36+5 | 2.01+6 | 2.16+6 |
| A | BRAIDWOOD 1 | P | 252 | 9.64+7 | 3.82+7 | 1.92+7 | 1.03+6 | 1.17+8 | 6.56+7 | 4.30+7 | 3.11+7 | 2.84+7 | 2.48+7 |
| A | BRAIDWOOD 2 | P | (a) | | | | | | | | | | |
| B | BROWNS FERRY 1 | B | 684 | 3.47+7 | 1.32+7 | 5.27+6 | 1.32+6 | 4.67+7 | 2.09+7 | 9.96+6 | 1.34+7 | 9.09+6 | 6.01+6 |
| B | BROWNS FERRY 2 | B | (a) | | | | | | | | | | |
| | BROWNS FERRY 3 | B | 456 | 3.12+7 | 1.22+7 | 5.03+6 | 9.02+5 | 4.04+7 | 2.02+7 | 1.08+7 | 1.01+7 | 8.89+6 | 6.70+6 |
| | BRUNSWICK 1 | B | 376 | 3.26+7 | 2.11+7 | 1.44+7 | 7.59+5 | 3.90+7 | 2.73+7 | 2.03+7 | 7.14+6 | 7.01+6 | 6.69+6 |
| | | P | | 0.00+0 | | | | | | | | | |
| | BRUNSWICK 2 | B | 376 | 3.13+7 | 1.94+7 | 1.27+7 | 7.52+5 | 3.78+7 | 2.65+7 | 1.98+7 | 7.29+6 | 7.81+6 | 7.83+6 |
| | | P | | 0.00+0 | | | | | | | | | |
| A | BYRON 1 | P | 264 | 8.64+7 | 4.21+7 | 2.33+7 | 1.07+6 | 1.17+8 | 7.26+7 | 5.22+7 | 3.17+7 | 3.15+7 | 3.00+7 |
| A | BYRON 2 | P | (a) | | | | | | | | | | |
| | CALLAWAY 1 | P | 168 | 3.43+7 | 1.07+7 | 3.66+6 | 7.13+5 | 4.84+7 | 2.18+7 | 1.10+7 | 1.48+7 | 1.18+7 | 8.09+6 |
| B | CALVERT CLF 1 | P | 192 | 5.10+7 | 2.93+7 | 1.81+7 | 7.16+5 | 6.23+7 | 4.21+7 | 3.10+7 | 1.20+7 | 1.35+7 | 1.36+7 |
| B | CALVERT CLF 2 | P | (a) | | | | | | | | | | |
| | CATAWBA 1 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 6.42+5 | 1.83+7 | 2.84+6 | 4.83+5 | 1.90+7 | 3.48+6 | 1.13+6 |
| | CATAWBA 2 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 5.94+5 | 1.81+7 | 2.55+6 | 3.95+5 | 1.87+7 | 3.14+6 | 9.89+5 |
| | CLINTON 1 | B | 344 | 3.40+7 | 1.00+7 | 3.24+6 | 6.96+5 | 4.20+7 | 1.57+7 | 6.84+6 | 8.68+6 | 6.43+6 | 4.09+6 |
| B | COMANCHE PK 1 | P | 198 | 5.01+7 | 9.86+6 | 2.14+6 | 8.76+5 | 6.25+7 | 1.52+7 | 4.07+6 | 1.33+7 | 6.20+6 | 2.81+6 |
| B | COMANCHE PK 2 | P | (a) | | | | | | | | | | |
| A | COOK 1 | P | 268 | 3.33+7 | 1.54+7 | 7.48+6 | 1.12+6 | 5.08+7 | 3.15+7 | 2.07+7 | 1.86+7 | 1.72+7 | 1.44+7 |
| A | COOK 2 | P | (a) | | | | | | | | | | |
| | COOPER STN | B | 232 | 2.15+7 | 1.05+7 | 5.33+6 | 4.90+5 | 2.62+7 | 1.52+7 | 9.18+6 | 5.23+6 | 5.19+6 | 4.33+6 |
| | CRYSTAL RVR 3 | P | 72 | 2.01+7 | 6.63+6 | 2.33+6 | 3.34+5 | 2.68+7 | 1.12+7 | 5.11+6 | 6.51+6 | 4.93+6 | 3.12+6 |
| | DAVIS-BESSE 1 | P | 120 | 6.22+7 | 3.08+7 | 1.66+7 | 5.48+5 | 7.41+7 | 4.88+7 | 3.57+7 | 1.24+7 | 1.86+7 | 1.96+7 |
| | DIABLO CANYON 1 | P | 86 | 2.28+7 | 5.53+6 | 1.46+6 | 3.89+5 | 2.91+7 | 8.69+6 | 2.84+6 | 6.73+6 | 3.55+6 | 1.77+6 |
| | DIABLO CANYON 2 | P | 86 | 2.28+7 | 5.53+6 | 1.46+6 | 3.89+5 | 2.91+7 | 8.69+6 | 2.84+6 | 6.73+6 | 3.55+6 | 1.77+6 |
| | DRESDEN 1 | B | | 0.00+0 | | | | | | | | | |
| | DRESDEN 2 | B | 316 | 1.99+7 | 9.26+6 | 4.51+6 | 6.12+5 | 2.54+7 | 1.54+7 | 9.69+6 | 6.10+6 | 6.72+6 | 5.79+6 |
| | DRESDEN 3 | B | 316 | 1.94+7 | 8.26+6 | 3.68+6 | 6.12+5 | 2.24+7 | 1.24+7 | 7.19+6 | 3.63+6 | 4.76+6 | 4.12+6 |
| | DUANE ARNOLD | B | 268 | 2.01+7 | 8.88+6 | 4.13+6 | 5.30+5 | 2.59+7 | 1.61+7 | 1.06+7 | 6.29+6 | 7.75+6 | 6.98+6 |
| | ENRICO FERMI 2 | B | 552 | 6.01+7 | 2.57+7 | 1.24+7 | 1.08+6 | 7.29+7 | 4.14+7 | 2.72+7 | 1.39+7 | 1.68+7 | 1.59+7 |
| | FARLEY 1 | P | 136 | 1.89+7 | 6.05+6 | 2.06+6 | 6.13+5 | 2.67+7 | 1.28+7 | 6.39+6 | 8.47+6 | 7.32+6 | 4.95+6 |
| | FARLEY 2 | P | 136 | 1.83+7 | 5.37+6 | 1.67+6 | 6.13+5 | 2.32+7 | 1.02+7 | 4.68+6 | 5.50+6 | 5.40+6 | 3.63+6 |
| | FITZPATRICK | B | 360 | 3.08+7 | 1.43+7 | 7.14+6 | 7.30+5 | 3.84+7 | 2.29+7 | 1.48+7 | 8.36+6 | 9.28+6 | 8.36+6 |
| | FORT CALHOUN | P | 90 | 2.01+7 | 1.14+7 | 6.64+6 | 3.19+5 | 2.38+7 | 1.73+7 | 1.32+7 | 3.94+6 | 6.29+6 | 6.90+6 |
| | FT ST VRAIN | Q | 240 | 0.00+0 | | | | | | | | | |
| | GINNA | P | 64 | 1.89+7 | 8.10+6 | 3.63+6 | 2.32+5 | 2.04+7 | 1.14+7 | 6.67+6 | 1.78+6 | 3.57+6 | 3.27+6 |
| | GRAND GULF 1 | B | 536 | 4.97+7 | 2.09+7 | 9.75+6 | 1.04+6 | 6.18+7 | 3.33+7 | 2.01+7 | 1.31+7 | 1.34+7 | 1.14+7 |
| | HADDAM NECK | P | 104 | 1.99+7 | 9.72+6 | 4.96+6 | 4.19+5 | 2.45+7 | 1.63+7 | 1.12+7 | 5.06+6 | 6.97+6 | 6.68+6 |
| | HARRIS 1 | P | 104 | 0.00+0 | | | 4.76+5 | | | | | | |
| | | B | | 0.00+0 | | | | | | | | | |

TABLE A3. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - DRYWELL STORAGE OPTION(1983 DOLLARS) (cont'd)

| PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| B HATCH 1 | B | 588 | 3.11+7 | 1.33+7 | 5.88+6 | 1.14+6 | 4.11+7 | 2.07+7 | 1.10+7 | 1.11+7 | 8.59+6 | 6.21+6 |
| B HATCH 2 | B | (a) | | | | | | | | | | |
| HOPE CREEK | B | 464 | 3.51+7 | 9.98+6 | 3.11+6 | 9.22+5 | 4.54+7 | 1.64+7 | 6.65+6 | 1.12+7 | 7.36+6 | 4.46+6 |
| HUMBOLDT BAY | B | | 0.00+0 | | | | | | | | | |
| INDIAN PT 1 | P | | 0.00+0 | | | | | | | | | |
| INDIAN PT 2 | P | 136 | 2.16+7 | 1.21+7 | 7.08+6 | 6.01+5 | 3.08+7 | 2.22+7 | 1.68+7 | 9.75+6 | 1.07+7 | 1.03+7 |
| INDIAN PT 3 | P | 152 | 2.24+7 | 7.74+6 | 2.84+6 | 6.77+5 | 3.38+7 | 1.77+7 | 1.00+7 | 1.19+7 | 1.06+7 | 7.87+6 |
| KEWAUNEE | P | 74 | 2.22+7 | 9.59+6 | 4.39+6 | 2.84+5 | 2.78+7 | 1.54+7 | 9.18+6 | 5.85+6 | 6.12+6 | 5.07+6 |
| LACROSSE | B | 48 | 1.99+7 | 1.24+7 | 7.99+6 | 6.66+4 | 2.12+7 | 1.64+7 | 1.31+7 | 1.36+6 | 4.08+6 | 5.21+6 |
| B LASALLE CTY 1 | B | 660 | 1.08+8 | 6.30+7 | 4.17+7 | 1.27+6 | 1.15+8 | 7.21+7 | 5.20+7 | 7.67+6 | 1.04+7 | 1.15+7 |
| B LASALLE CTY 2 | B | (a) | | | | | | | | | | |
| LIMERICK 1 | B | 448 | 5.06+7 | 2.38+7 | 1.26+7 | 8.93+5 | 6.30+7 | 3.92+7 | 2.83+7 | 1.33+7 | 1.63+7 | 1.66+7 |
| LIMERICK 2 | B | 440 | 5.29+7 | 2.11+7 | 9.64+6 | 8.73+5 | 6.50+7 | 3.44+7 | 2.15+7 | 1.30+7 | 1.42+7 | 1.27+7 |
| MAINE YANKEE | P | 146 | 2.20+7 | 1.12+7 | 5.95+6 | 5.25+5 | 3.12+7 | 2.33+7 | 1.63+7 | 9.77+6 | 1.26+7 | 1.26+7 |
| MCGUIRE 1 | P | 144 | 3.12+7 | 9.95+6 | 3.44+6 | 8.42+5 | 4.27+7 | 1.90+7 | 9.26+6 | 1.22+7 | 9.70+6 | 6.47+6 |
| MCGUIRE 2 | P | 144 | 3.20+7 | 9.65+6 | 3.17+6 | 8.42+5 | 4.38+7 | 1.84+7 | 8.53+6 | 1.25+7 | 9.35+6 | 6.01+6 |
| MILLSTONE 1 | B | 196 | 3.37+7 | 2.47+7 | 1.93+7 | 4.05+5 | 3.61+7 | 2.53+7 | 1.88+7 | 2.82+6 | 9.75+5 | -3.56+ |
| MILLSTONE 2 | P | 156 | 2.80+7 | 1.31+7 | 6.49+6 | 6.13+5 | 3.87+7 | 2.62+7 | 1.93+7 | 1.14+7 | 1.37+7 | 1.34+7 |
| MILLSTONE 3 | P | 168 | 2.18+7 | 4.26+6 | 9.01+5 | 7.45+5 | 3.33+7 | 9.51+6 | 2.97+6 | 1.22+7 | 5.99+6 | 2.82+6 |
| MONTICELLO | B | 240 | 1.81+7 | 6.44+6 | 2.42+6 | 4.89+5 | 1.96+7 | 9.18+6 | 4.49+6 | 2.03+6 | 3.23+6 | 2.56+6 |
| NINE MILE PT 1 | B | 184 | 1.96+7 | 1.01+7 | 5.43+6 | 3.80+5 | 2.23+7 | 1.49+7 | 1.04+7 | 3.05+6 | 5.17+6 | 5.33+6 |
| NINE MILE PT 2 | B | 276 | 2.79+7 | 6.70+6 | 1.76+6 | 5.71+5 | 3.31+7 | 9.38+6 | 2.92+6 | 5.77+6 | 3.25+6 | 1.74+6 |
| A NORTH ANNA 1 | P | 195 | 5.05+7 | 2.11+7 | 9.49+6 | 8.91+5 | 6.54+7 | 3.63+7 | 2.21+7 | 1.58+7 | 1.61+7 | 1.35+7 |
| A NORTH ANNA 2 | P | (a) | | | | | | | | | | |
| A OCONEE 1 | P | 180 | 5.71+7 | 3.73+7 | 2.63+7 | 8.01+5 | 6.64+7 | 4.52+7 | 3.33+7 | 1.01+7 | 8.74+6 | 7.81+6 |
| A OCONEE 2 | P | (a) | | | | | | | | | | |
| OCONEE 3 | P | 120 | 3.50+7 | 2.10+7 | 1.37+7 | 5.42+5 | 4.35+7 | 2.95+7 | 2.18+7 | 9.08+6 | 9.06+6 | 8.60+6 |
| OYSTER CRK 1 | B | 256 | 1.99+7 | 1.13+7 | 6.61+6 | 5.11+5 | 2.36+7 | 1.67+7 | 1.22+7 | 4.19+6 | 5.89+6 | 6.06+6 |
| PALISADES | P | 68 | 2.94+7 | 2.05+7 | 1.53+7 | 2.70+5 | 3.25+7 | 2.27+7 | 1.69+7 | 3.39+6 | 2.40+6 | 1.79+6 |
| PALO VERDE 1 | P | 170 | 3.28+7 | 1.03+7 | 3.51+6 | 6.74+5 | 4.59+7 | 2.07+7 | 1.05+7 | 1.38+7 | 1.11+7 | 7.65+6 |
| PALO VERDE 2 | P | 170 | 3.29+7 | 9.81+6 | 3.19+6 | 6.74+5 | 4.59+7 | 1.98+7 | 9.55+6 | 1.37+7 | 1.07+7 | 7.03+6 |
| PALO VERDE 3 | P | 170 | 3.29+7 | 9.34+6 | 2.91+6 | 6.74+5 | 4.59+7 | 1.88+7 | 8.69+6 | 1.37+7 | 1.02+7 | 6.45+6 |
| PEACHBOTTOM 2 | B | 456 | 2.55+7 | 1.24+7 | 6.32+6 | 9.02+5 | 3.35+7 | 2.10+7 | 1.39+7 | 8.87+6 | 9.50+6 | 8.46+6 |
| PEACHBOTTOM 3 | B | 440 | 2.41+7 | 1.17+7 | 5.97+6 | 8.73+5 | 3.18+7 | 2.00+7 | 1.32+7 | 8.65+6 | 9.18+6 | 8.09+6 |
| PERRY 1 | B | 448 | 3.24+7 | 8.48+6 | 2.41+6 | 8.93+5 | 4.19+7 | 1.39+7 | 5.17+6 | 1.04+7 | 6.34+6 | 3.65+6 |
| PILGRIM 1 | B | 192 | 2.44+7 | 1.41+7 | 8.56+6 | 3.97+5 | 2.88+7 | 2.05+7 | 1.54+7 | 4.73+6 | 6.78+6 | 7.23+6 |
| A POINT BEACH 1 | P | 96 | 2.56+7 | 1.36+7 | 7.59+6 | 3.64+5 | 3.11+7 | 2.05+7 | 1.42+7 | 5.85+6 | 7.22+6 | 6.97+6 |
| A POINT BEACH 2 | P | (a) | | | | | | | | | | |
| A PRAIRIE ISL 1 | P | 120 | 2.98+7 | 1.72+7 | 1.04+7 | 4.31+5 | 3.66+7 | 2.61+7 | 1.96+7 | 7.31+6 | 9.28+6 | 9.60+6 |
| A PRAIRIE ISL 2 | P | (a) | | | | | | | | | | |
| B QUAD CITIES 1 | B | 480 | 1.78+7 | 6.66+6 | 2.18+6 | 9.21+5 | 2.11+7 | 8.28+6 | 3.39+6 | 4.20+6 | 3.14+6 | 2.14+6 |
| B QUAD CITIES 2 | B | (a) | | | | | | | | | | |
| RANCHO SECO 1 | P | 138 | 1.83+7 | 6.52+6 | 2.44+6 | 6.19+5 | 2.59+7 | 1.56+7 | 9.87+6 | 8.16+6 | 9.72+6 | 8.85+6 |
| ROBINSON 2 | P | 96 | 2.56+7 | 1.69+7 | 1.17+7 | 4.00+5 | 3.07+7 | 2.21+7 | 1.66+7 | 5.59+6 | 5.64+6 | 5.36+6 |
| RVR BEND 1 | B | 384 | 3.24+7 | 9.24+6 | 2.88+6 | 7.81+5 | 4.66+7 | 1.49+7 | 6.03+6 | 9.01+6 | 6.47+6 | 3.93+6 |
| SALEM 1 | P | 168 | 3.31+7 | 1.53+7 | 7.58+6 | 7.11+5 | 4.62+7 | 2.96+7 | 2.08+7 | 1.39+7 | 1.50+7 | 1.39+7 |
| SALEM 2 | P | 168 | 3.58+7 | 1.36+7 | 5.59+6 | 7.45+5 | 5.07+7 | 2.79+7 | 1.69+7 | 1.57+7 | 1.50+7 | 1.20+7 |

TABLE A3. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - DRYWELL STORAGE OPTION(1983 DOLLARS)(cont'd)

| | PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | P | 270 | 4.03+7 | 2.23+7 | 1.26+7 | 9.56+5 | 5.30+7 | 3.02+7 | 2.02+7 | 1.37+7 | 1.69+7 | 1.65+7 |
| E | SAN ONOFRE 2 | P | (a) | | | | | | | | | | |
| E | SAN ONOFRE 3 | P | (a) | | | | | | | | | | |
| | SEABROOK 1 | P | 128 | 3.94+7 | 1.03+7 | 3.03+6 | 5.74+5 | 5.19+7 | 1.88+7 | 7.84+6 | 1.31+7 | 9.02+6 | 5.38+6 |
| A | SEQUOYAH 1 | P | 240 | 6.77+7 | 3.25+7 | 1.73+7 | 1.06+6 | 9.03+7 | 5.52+7 | 3.83+7 | 2.37+7 | 2.38+7 | 2.21+7 |
| A | SEQUOYAH 2 | P | (a) | | | | | | | | | | |
| | SHOREHAM | B | 368 | 3.44+7 | 1.01+7 | 3.28+6 | 7.38+5 | 4.28+7 | 1.61+7 | 6.77+6 | 9.11+6 | 6.72+6 | 4.23+6 |
| | SOUTH TEXAS 1 | P | 104 | 1.83+7 | 2.58+6 | 3.99+5 | 5.51+5 | 2.44+7 | 4.52+6 | 9.08+5 | 6.66+6 | 2.49+6 | 1.08+6 |
| | SOUTH TEXAS 2 | P | 104 | 1.83+7 | 2.45+6 | 3.63+5 | 5.46+5 | 2.43+7 | 4.28+6 | 8.22+5 | 6.55+6 | 2.37+6 | 1.00+6 |
| | ST LUCIE 1 | P | 152 | 3.38+7 | 2.47+7 | 1.93+7 | 5.52+5 | 4.03+7 | 2.82+7 | 2.10+7 | 7.07+6 | 4.02+6 | 2.32+6 |
| | ST LUCIE 2 | P | 144 | 3.26+7 | 1.22+7 | 4.95+6 | 5.25+5 | 4.32+7 | 2.32+7 | 1.41+7 | 1.12+7 | 1.15+7 | 9.66+6 |
| | SUMMER 1 | P | 136 | 2.78+7 | 7.69+6 | 2.31+6 | 6.05+5 | 3.84+7 | 1.55+7 | 6.83+6 | 1.12+7 | 8.37+6 | 5.13+6 |
| A | SURRY 1 | P | 159 | 1.73+7 | 4.19+6 | 1.09+6 | 7.03+5 | 2.18+7 | 7.33+6 | 2.60+6 | 5.19+6 | 3.84+6 | 2.21+6 |
| A | SURRY 2 | P | (a) | | | | | | | | | | |
| B | SUSQUEHANNA 1 | B | 696 | 6.70+7 | 2.60+7 | 1.11+7 | 1.31+6 | 8.45+7 | 4.02+7 | 2.13+7 | 1.88+7 | 1.55+7 | 1.16+7 |
| B | SUSQUEHANNA 2 | B | (a) | | | | | | | | | | |
| | THREE MILE ISL 1 | P | 148 | 1.78+7 | 5.78+6 | 1.98+6 | 6.54+5 | 2.19+7 | 1.07+7 | 5.44+6 | 4.76+6 | 5.57+6 | 4.11+6 |
| | TROJAN | P | 96 | 1.91+7 | 6.73+6 | 2.50+6 | 4.37+5 | 2.52+7 | 1.16+7 | 5.59+6 | 6.51+6 | 5.26+6 | 3.52+6 |
| E | TURKEY PT 3 | P | 144 | 1.86+7 | 7.27+6 | 2.98+6 | 6.39+5 | 2.73+7 | 1.46+7 | 8.10+6 | 9.33+6 | 7.93+6 | 5.75+6 |
| E | TURKEY PT 4 | P | (a) | | | | | | | | | | |
| B | VOGTLE 1 | P | 252 | 6.09+7 | 1.78+7 | 5.74+6 | 1.11+6 | 8.08+7 | 3.01+7 | 1.26+7 | 2.10+7 | 1.34+7 | 8.01+6 |
| B | VOGTLE 2 | P | (a) | | | | | | | | | | |
| | VT YANKEE 1 | B | 264 | 2.07+7 | 9.01+6 | 4.16+6 | 5.53+5 | 2.67+7 | 1.51+7 | 9.02+6 | 6.60+6 | 6.59+6 | 5.41+6 |
| | WASH NUCLEAR 2 | B | 312 | 4.75+7 | 1.99+7 | 9.24+6 | 6.39+5 | 5.51+7 | 2.72+7 | 1.51+7 | 8.24+6 | 7.98+6 | 6.45+6 |
| | WATERFORD 3 | P | 176 | 3.28+7 | 9.85+6 | 3.22+6 | 6.96+5 | 4.62+7 | 2.00+7 | 9.70+6 | 1.41+7 | 1.09+7 | 7.18+6 |
| A | WATTS BAR 1 | P | 240 | 6.63+7 | 2.41+7 | 9.74+6 | 1.06+6 | 8.98+7 | 4.34+7 | 2.39+7 | 2.44+7 | 2.03+7 | 1.52+7 |
| A | WATTS BAR 2 | P | (a) | | | | | | | | | | |
| | WOLF CREEK 1 | P | 152 | 2.97+7 | 8.17+6 | 2.44+6 | 6.77+5 | 4.20+7 | 1.67+7 | 7.37+6 | 1.29+7 | 9.18+6 | 5.60+6 |
| | YANKEE-ROWE 1 | P | 76 | 1.78+7 | 8.12+6 | 3.86+6 | 1.86+5 | 2.01+7 | 1.38+7 | 9.71+6 | 2.51+6 | 5.89+6 | 6.04+6 |
| A | ZION 1 | P | 216 | 3.54+7 | 1.88+7 | 1.04+7 | 9.54+5 | 5.13+7 | 3.64+7 | 2.72+7 | 1.69+7 | 1.85+7 | 1.78+7 |
| A | ZION 2 | P | (a) | | | | | | | | | | |
| | TOTAL | | | 3.15+9 | 1.34+9 | 6.65+8 | 8.59+7 | 4.07+9 | 2.16+9 | 1.34+9 | 9.86+8 | 8.90+8 | 7.40+8 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A3a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - DRYWELL OPTION
(1983 DOLLARS)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | 2008 | 377 | 1996 | 47 | 1.73+7 | 9.15+6 | 5.00+6 | 3.10+6 | 1.21+6 | 5.10+5 | 2.04+7 | 1.04+7 | 5.51+6 |
| | ARK NUCLEAR 2 | 2012 | 565 | 1999 | 47 | 1.88+7 | 8.59+6 | 4.08+6 | 3.67+6 | 1.22+6 | 4.37+5 | 2.25+7 | 9.81+6 | 4.52+6 |
| | BEAVER VALLEY 1 | 2016 | 853 | 1996 | 47 | 2.36+7 | 1.25+7 | 6.83+6 | 7.36+6 | 2.43+6 | 9.08+5 | 3.10+7 | 1.49+7 | 7.74+6 |
| | BEAVER VALLEY 2 | 2026 | 858 | 2009 | 47 | 2.35+7 | 6.61+6 | 1.97+6 | 6.23+6 | 1.16+6 | 2.47+5 | 2.97+7 | 7.77+6 | 2.22+6 |
| | BELLEFONTE 1 | 2028 | 1900 | 2009 | 48 | 3.74+7 | 1.05+7 | 3.14+6 | 1.20+7 | 2.15+6 | 4.43+5 | 4.94+7 | 1.27+7 | 3.58+6 |
| | BELLEFONTE 2 | 2030 | 1900 | 2011 | 48 | 3.74+7 | 9.53+6 | 2.59+6 | 1.20+7 | 1.95+6 | 3.66+5 | 4.94+7 | 1.15+7 | 2.96+6 |
| | BIG ROCK 1 | 2001 | 95 | 1995 | 47 | 1.73+7 | 9.61+6 | 5.50+6 | 1.55+6 | 7.30+5 | 3.58+5 | 1.89+7 | 1.03+7 | 5.86+6 |
| A | BRAIDWOOD 1 | 2026 | 3627 | 1996 | 49 | 5.69+7 | 3.02+7 | 1.65+7 | 2.95+7 | 8.01+6 | 2.69+6 | 8.64+7 | 3.82+7 | 1.92+7 |
| A | BRAIDWOOD 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| B | BROWNS FERRY 1 | 2014 | 3228 | 2002 | 48 | 2.90+7 | 1.15+7 | 4.74+6 | 5.67+6 | 1.66+6 | 5.27+5 | 3.47+7 | 1.32+7 | 5.27+6 |
| B | BROWNS FERRY 2 | 2014 | (a) | | | | | | | | | 0.00+0 | | |
| | BROWNS FERRY 3 | 2017 | 2441 | 2001 | 47 | 2.49+7 | 1.04+7 | 4.48+6 | 6.30+6 | 1.77+6 | 5.54+5 | 3.12+7 | 1.22+7 | 5.03+6 |
| | BRUNSWICK 1 | 2010 | 2401 | 1998 | 47 | 2.48+7 | 1.76+7 | 1.27+7 | 7.82+6 | 3.46+6 | 1.71+6 | 3.26+7 | 2.11+7 | 1.44+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| | BRUNSWICK 2 | 2010 | 2281 | 1991 | 47 | 2.41+7 | 1.63+7 | 1.12+7 | 7.17+6 | 3.09+6 | 1.47+6 | 3.13+7 | 1.94+7 | 1.27+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| A | BYRON 1 | 2024 | 3627 | 1994 | 49 | 5.69+7 | 3.33+7 | 2.00+7 | 2.95+7 | 8.83+6 | 3.25+6 | 8.64+7 | 4.21+7 | 2.33+7 |
| A | BYRON 2 | 2026 | (a) | | | | | | | | | 0.00+0 | | |
| | CALLAWAY 1 | 2024 | 1129 | 2005 | 47 | 2.63+7 | 8.99+6 | 3.23+6 | 7.98+6 | 1.74+6 | 4.32+5 | 3.43+7 | 1.07+7 | 3.66+6 |
| B | CALVERT CLF 1 | 2014 | 2213 | 1992 | 48 | 3.72+7 | 2.40+7 | 1.58+7 | 1.38+7 | 5.33+6 | 2.34+6 | 5.10+7 | 2.93+7 | 1.81+7 |
| B | CALVERT CLF 2 | 2016 | (a) | | | | | | | | | 0.00+0 | | |
| | CATAWBA 1 | 2025 | 0 | 2025 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CATAWBA 2 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CLINTON 1 | 2027 | 2572 | 2006 | 47 | 2.55+7 | 8.32+6 | 2.85+6 | 8.52+6 | 1.69+6 | 3.92+5 | 3.40+7 | 1.00+7 | 3.24+6 |
| B | COMANCHE PK 1 | 2030 | 2067 | 2015 | 48 | 3.99+7 | 8.38+6 | 1.89+6 | 1.02+7 | 1.48+6 | 2.45+5 | 5.01+7 | 9.86+6 | 2.14+6 |
| B | COMANCHE PK 2 | 2030 | (a) | | | | | | | | | 0.00+0 | | |
| A | COOK 1 | 2009 | 1241 | 1998 | 48 | 2.83+7 | 1.36+7 | 6.77+6 | 5.04+6 | 1.83+6 | 7.12+5 | 3.33+7 | 1.54+7 | 7.48+6 |
| A | COOK 2 | 2009 | (a) | | | | | | | | | 0.00+0 | | |
| | COOPER STN | 2008 | 1238 | 1997 | 47 | 1.84+7 | 9.32+6 | 4.86+6 | 3.05+6 | 1.16+6 | 4.74+5 | 2.15+7 | 1.05+7 | 5.33+6 |
| | CRYSTAL RVR 3 | 2016 | 432 | 2005 | 47 | 1.73+7 | 5.90+6 | 2.12+6 | 2.84+6 | 7.33+5 | 2.06+5 | 2.01+7 | 6.63+6 | 2.33+6 |
| | DAVIS-BESSE 1 | 2017 | 2490 | 1995 | 48 | 4.51+7 | 2.51+7 | 1.44+7 | 1.71+7 | 5.69+6 | 2.17+6 | 6.22+7 | 3.08+7 | 1.66+7 |
| | DIABLO CANYON 1 | 2025 | 517 | 2011 | 47 | 1.88+7 | 4.81+6 | 1.31+6 | 3.97+6 | 7.17+5 | 1.45+5 | 2.28+7 | 5.53+6 | 1.46+6 |
| | DIABLO CANYON 2 | 2025 | 517 | 2011 | 47 | 1.88+7 | 4.81+6 | 1.31+6 | 3.97+6 | 7.17+5 | 1.45+5 | 2.28+7 | 5.53+6 | 1.46+6 |
| | DRESDEN 1 | 1984 | 0 | | | | | | | | | 0.00+0 | | |
| | DRESDEN 2 | 2008 | 1015 | 1998 | 47 | 1.73+7 | 8.30+6 | 4.13+6 | 2.58+6 | 9.59+5 | 3.80+5 | 1.99+7 | 9.26+6 | 4.51+6 |
| | DRESDEN 3 | 2006 | 693 | 2000 | 47 | 1.73+7 | 7.53+6 | 3.41+6 | 2.07+6 | 7.28+5 | 2.73+5 | 1.94+7 | 8.26+6 | 3.68+6 |
| | DUANE ARNOLD | 2010 | 998 | 1999 | 47 | 1.73+7 | 7.90+6 | 3.76+6 | 2.84+6 | 9.83+5 | 3.65+5 | 2.01+7 | 8.88+6 | 4.13+6 |
| | ENRICO FERMI 2 | 2025 | 5355 | 1997 | 48 | 4.87+7 | 2.05+7 | 1.07+7 | 1.94+7 | 5.22+6 | 1.70+6 | 6.81+7 | 2.57+7 | 1.24+7 |
| | FARLEY 1 | 2012 | 298 | 2006 | 47 | 1.73+7 | 5.62+6 | 1.93+6 | 1.55+6 | 4.27+5 | 1.26+5 | 1.89+7 | 6.05+6 | 2.06+6 |
| | FARLEY 2 | 2012 | 140 | 2008 | 47 | 1.73+7 | 5.10+6 | 1.59+6 | 1.03+6 | 2.70+5 | 7.55+4 | 1.83+7 | 5.37+6 | 1.67+6 |
| | FITZPATRICK | 2015 | 2246 | 1997 | 47 | 2.40+7 | 1.21+7 | 6.33+6 | 6.77+6 | 2.22+6 | 8.13+5 | 3.08+7 | 1.43+7 | 7.14+6 |
| | FORT CALHOUN | 2008 | 413 | 1994 | 47 | 1.73+7 | 1.01+7 | 6.05+6 | 2.84+6 | 1.25+6 | 5.88+5 | 2.01+7 | 1.14+7 | 6.64+6 |
| | FT ST VRAIN | 2007 | | | | | | | | | | 0.00+0 | | |
| | GINNA | 2006 | 219 | 2000 | 47 | 1.73+7 | 7.53+6 | 3.41+6 | 1.55+6 | 5.72+5 | 2.22+5 | 1.89+7 | 8.10+6 | 3.63+6 |
| | GRAND GULF 1 | 2022 | 4392 | 1998 | 48 | 3.54+7 | 1.70+7 | 8.47+6 | 1.43+7 | 3.94+6 | 1.28+6 | 4.97+7 | 2.09+7 | 9.75+6 |
| | HADDAM NECK | 2007 | 319 | 1997 | 47 | 1.73+7 | 8.71+6 | 4.54+6 | 2.58+6 | 1.01+6 | 4.18+5 | 1.99+7 | 9.72+6 | 4.96+6 |
| | HARRIS 1 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | | |
| | | | - | - | | | | | | | | 0.00+0 | | |

TABLE A3a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - DRYWELL OPTION (1983 DOLLARS) (cont'd)

| PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | CONSTRUCTION | | | O $ M | | | TOTAL | | |
| | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| B HATCH 1 | 2009 | 2874 | 2000 | 48 | 2.72+7 | 1.19+7 | 5.38+6 | 3.93+6 | 1.36+6 | 4.98+5 | 3.11+7 | 1.33+7 | 5.88+6 |
| B HATCH 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| HOPE CREEK | 2026 | 2020 | 2007 | 48 | 2.69+7 | 9.36+6 | 2.74+6 | 8.22+6 | 1.62+6 | 3.67+5 | 3.51+7 | 9.98+6 | 3.11+6 |
| HUMBOLDT BAY | 1976 | 0 | - | | | | | | | | 0.00+0 | | |
| INDIAN PT 1 | 1980 | 0 | - | | | | | | | | 0.00+0 | | |
| INDIAN PT 2 | 2006 | 493 | 1994 | 47 | 1.83+7 | 1.07+7 | 6.42+6 | 3.30+6 | 1.43+6 | 6.57+5 | 2.16+7 | 1.21+7 | 7.08+6 |
| INDIAN PT 3 | 2015 | 536 | 2004 | 47 | 1.92+7 | 6.68+6 | 2.59+6 | 3.18+6 | 8.62+5 | 2.54+5 | 2.24+7 | 7.74+6 | 2.84+6 |
| KEWAUNEE | 2014 | 579 | 1999 | 47 | 1.81+7 | 8.30+6 | 3.94+6 | 4.08+6 | 1.29+6 | 4.50+5 | 2.22+7 | 9.59+6 | 4.39+6 |
| LACROSSE | 2002 | 205 | 1992 | 47 | 1.73+7 | 1.11+7 | 7.32+6 | 2.58+6 | 1.29+6 | 6.73+5 | 1.99+7 | 1.24+7 | 7.99+6 |
| B LASALLE CTY 1 | 2022 | 9824 | 1990 | 49 | 6.97+7 | 4.95+7 | 3.58+7 | 3.85+7 | 1.35+7 | 5.88+6 | 1.08+8 | 6.30+7 | 4.17+7 |
| B LASALLE CTY 2 | 2023 | (a) | | | | | | | | | 0.00+0 | | |
| LIMERICK 1 | 2024 | 4098 | 1995 | 48 | 3.41+7 | 1.90+7 | 1.09+7 | 1.65+7 | 4.81+6 | 1.70+6 | 5.06+7 | 2.38+7 | 1.26+7 |
| LIMERICK 2 | 2029 | 4236 | 1998 | 48 | 3.48+7 | 1.67+7 | 8.32+6 | 1.91+7 | 4.37+6 | 1.32+6 | 5.29+7 | 2.11+7 | 9.64+6 |
| MAINE YANKEE | 2008 | 632 | 1996 | 47 | 1.86+7 | 9.88+6 | 5.40+6 | 3.37+6 | 1.32+6 | 5.54+5 | 2.20+7 | 1.12+7 | 5.95+6 |
| MCGUIRE 1 | 2021 | 965 | 2005 | 47 | 2.49+7 | 8.50+6 | 3.06+6 | 6.28+6 | 1.45+6 | 3.77+5 | 3.12+7 | 9.95+6 | 3.44+6 |
| MCGUIRE 2 | 2023 | 989 | 2006 | 47 | 2.52+7 | 8.19+6 | 2.81+6 | 6.77+6 | 1.46+6 | 3.57+5 | 3.20+7 | 9.65+6 | 3.17+6 |
| MILLSTONE 1 | 2010 | 2480 | 1987 | 47 | 2.47+7 | 2.04+7 | 1.69+7 | 8.98+6 | 4.33+6 | 2.37+6 | 3.37+7 | 2.47+7 | 1.93+7 |
| MILLSTONE 2 | 2015 | 823 | 1997 | 47 | 2.19+7 | 1.11+7 | 5.76+6 | 6.08+6 | 1.99+6 | 7.27+5 | 2.80+7 | 1.31+7 | 6.49+6 |
| MILLSTONE 3 | 2025 | 541 | 2016 | 47 | 1.92+7 | 3.86+6 | 8.29+5 | 2.62+6 | 4.13+5 | 7.21+4 | 2.18+7 | 4.26+6 | 9.01+5 |
| MONTICELLO | 2007 | 355 | 2004 | 47 | 1.73+7 | 6.19+6 | 2.33+6 | 7.75+5 | 2.52+5 | 8.68+4 | 1.81+7 | 6.44+6 | 2.42+6 |
| NINE MILE PT 1 | 2005 | 884 | 1996 | 47 | 1.73+7 | 9.15+6 | 5.00+6 | 2.32+6 | 9.73+5 | 4.31+5 | 1.96+7 | 1.01+7 | 5.43+6 |
| NINE MILE PT 2 | 2026 | 1971 | 2011 | 47 | 2.26+7 | 5.77+6 | 1.57+6 | 5.25+6 | 9.28+5 | 1.86+5 | 2.79+7 | 6.70+6 | 1.76+6 |
| A NORTH ANNA 1 | 2018 | 1866 | 1999 | 48 | 3.82+7 | 1.75+7 | 8.31+6 | 1.23+7 | 3.58+6 | 1.18+6 | 5.05+7 | 2.11+7 | 9.49+6 |
| A NORTH ANNA 2 | 2020 | (a) | | | | | | | | | 0.00+0 | | |
| A OCONEE 1 | 2013 | 2102 | 1989 | 48 | 4.05+7 | 3.02+7 | 2.28+7 | 1.66+7 | 7.10+6 | 3.50+6 | 5.71+7 | 3.73+7 | 2.63+7 |
| A OCONEE 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| OCONEE 3 | 2014 | 1021 | 1991 | 47 | 2.56+7 | 1.73+7 | 1.20+7 | 9.36+6 | 3.72+6 | 1.69+6 | 3.50+7 | 2.10+7 | 1.37+7 |
| OYSTER CRK 1 | 2004 | 912 | 1994 | 47 | 1.73+7 | 1.01+7 | 6.05+6 | 2.58+6 | 1.17+6 | 5.56+5 | 1.99+7 | 1.13+7 | 6.61+6 |
| PALISADES | 2011 | 835 | 1988 | 47 | 2.17+7 | 1.70+7 | 1.35+7 | 7.67+6 | 3.52+6 | 1.84+6 | 2.94+7 | 2.05+7 | 1.53+7 |
| PALO VERDE 1 | 2024 | 1117 | 2005 | 47 | 2.52+7 | 8.63+6 | 3.10+6 | 7.60+6 | 1.65+6 | 4.11+5 | 3.28+7 | 1.03+7 | 3.51+6 |
| PALO VERDE 2 | 2025 | 1121 | 2006 | 47 | 2.53+7 | 8.23+6 | 2.82+6 | 7.61+6 | 1.58+6 | 3.74+5 | 3.29+7 | 9.81+6 | 3.19+6 |
| PALO VERDE 3 | 2026 | 1121 | 2007 | 47 | 2.53+7 | 7.84+6 | 2.57+6 | 7.61+6 | 1.50+6 | 3.40+5 | 3.29+7 | 9.34+6 | 2.91+6 |
| PEACHBOTTOM 2 | 2008 | 1812 | 1997 | 47 | 2.18+7 | 1.10+7 | 5.75+6 | 3.69+6 | 1.41+6 | 5.74+5 | 2.55+7 | 1.24+7 | 6.32+6 |
| PEACHBOTTOM 3 | 2008 | 1589 | 1997 | 47 | 2.08+7 | 1.04+7 | 5.43+6 | 3.46+6 | 1.32+6 | 5.38+5 | 2.41+7 | 1.17+7 | 5.97+6 |
| PERRY 1 | 2026 | 2548 | 2009 | 47 | 2.55+7 | 7.19+6 | 2.14+6 | 6.90+6 | 1.29+6 | 2.73+5 | 3.24+7 | 8.48+6 | 2.41+6 |
| PILGRIM 1 | 2008 | 1512 | 1993 | 47 | 1.99+7 | 1.22+7 | 7.67+6 | 4.53+6 | 1.92+6 | 8.85+5 | 2.44+7 | 1.41+7 | 8.58+6 |
| A POINT BEACH 1 | 2007 | 849 | 1996 | 47 | 2.16+7 | 1.20+7 | 6.97+6 | 3.97+6 | 1.63+6 | 7.18+5 | 2.56+7 | 1.36+7 | 7.69+6 |
| A POINT BEACH 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| A PRAIRIE ISL 1 | 2008 | 1142 | 1993 | 47 | 2.41+7 | 1.48+7 | 9.28+6 | 5.66+6 | 2.41+6 | 1.11+6 | 2.98+7 | 1.72+7 | 1.04+7 |
| A PRAIRIE ISL 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| B QUAD CITIES 1 | 2007 | 503 | 2005 | 47 | 1.73+7 | 5.90+6 | 2.12+6 | 5.16+5 | 1.64+5 | 5.50+4 | 1.78+7 | 6.06+6 | 2.18+6 |
| B QUAD CITIES 2 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| RANCHO SECO 1 | 2008 | 228 | 2004 | 47 | 1.73+7 | 6.19+6 | 2.33+6 | 1.03+6 | 3.29+5 | 1.11+5 | 1.83+7 | 6.52+6 | 2.44+6 |
| ROBINSON 2 | 2007 | 668 | 1990 | 47 | 2.03+7 | 1.44+7 | 1.04+7 | 5.25+6 | 2.47+6 | 1.27+6 | 2.56+7 | 1.69+7 | 1.17+7 |
| RVR BEND 1 | 2025 | 2452 | 2007 | 47 | 2.52+7 | 7.80+6 | 2.55+6 | 7.17+6 | 1.44+6 | 3.32+5 | 3.24+7 | 9.24+6 | 2.88+6 |
| SALEM 1 | 2016 | 1007 | 1997 | 47 | 2.54+7 | 1.28+7 | 6.69+6 | 7.65+6 | 2.46+6 | 8.87+5 | 3.31+7 | 1.53+7 | 7.58+6 |
| SALEM 2 | 2020 | 1163 | 2001 | 48 | 2.74+7 | 1.14+7 | 4.93+6 | 8.39+6 | 2.22+6 | 6.64+5 | 3.58+7 | 1.36+7 | 5.59+6 |

TABLE A3a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - DRYWELL OPTION
(1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 2362 | 1995 | 48 | 3.77+7 | 2.16+7 | 1.20+7 | 2.55+6 | 1.26+6 | 6.44+5 | 4.03+7 | 2.23+7 | 1.26+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| E | SAN ONOFRE 3 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| | SEABROOK 1 | 2031 | 1261 | 2008 | 48 | 2.67+7 | 8.48+6 | 2.65+6 | 1.07+7 | 1.86+6 | 3.83+5 | 3.94+7 | 1.03+7 | 3.03+6 |
| A | SEQUOYAH 1 | 2021 | 2680 | 1995 | 48 | 4.67+7 | 2.60+7 | 1.49+7 | 2.16+7 | 6.45+6 | 2.35+6 | 6.77+7 | 3.25+7 | 1.73+7 |
| A | SEQUOYAH 2 | 2022 | (a) | | | | | | | | | 0.00+0 | | |
| | SHOREHAM | 2027 | 2635 | 2006 | 47 | 2.58+7 | 8.41+6 | 2.68+6 | 8.63+6 | 1.71+6 | 3.97+5 | 3.44+7 | 1.01+7 | 3.28+6 |
| | SOUTH TEXAS 1 | 2027 | 258 | 2023 | 47 | 1.78+7 | 2.45+6 | 3.61+5 | 1.03+6 | 1.30+5 | 1.81+4 | 1.83+7 | 2.58+6 | 3.99+5 |
| | SOUTH TEXAS 2 | 2028 | 258 | 2024 | 47 | 1.78+7 | 2.33+6 | 3.47+5 | 1.03+6 | 1.24+5 | 1.64+4 | 1.83+7 | 2.45+6 | 3.63+5 |
| | ST LUCIE 1 | 2010 | 1182 | 1987 | 47 | 2.48+7 | 2.04+7 | 1.69+7 | 8.98+6 | 4.33+6 | 2.37+6 | 3.38+7 | 2.47+7 | 1.93+7 |
| | ST LUCIE 2 | 2023 | 1126 | 2001 | 47 | 2.42+7 | 1.01+7 | 4.35+6 | 8.36+6 | 2.08+6 | 5.99+5 | 3.26+7 | 1.22+7 | 4.95+6 |
| | SUMMER 1 | 2024 | 761 | 2008 | 47 | 2.23+7 | 6.59+6 | 2.06+6 | 5.51+6 | 1.16+6 | 2.49+5 | 2.78+7 | 7.69+6 | 2.31+6 |
| A | SURRY 1 | 2012 | 97 | 2012 | 47 | 1.73+7 | 4.19+6 | 1.09+6 | 0.00+0 | 0.00+0 | 0.00+0 | 1.73+7 | 4.19+6 | 1.09+6 |
| A | SURRY 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| B | SUSQUEHANNA 1 | 2022 | 7288 | 2000 | 49 | 4.86+7 | 2.12+7 | 9.61+6 | 1.84+7 | 4.82+6 | 1.46+6 | 6.70+7 | 2.60+7 | 1.11+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | | | | | | | | | 0.00+0 | | |
| | THREE MILE ISL 1 | 2008 | 75 | 2006 | 47 | 1.73+7 | 5.62+6 | 1.93+6 | 5.16+5 | 1.56+5 | 5.00+4 | 1.78+7 | 5.78+6 | 1.98+6 |
| | TROJAN | 2011 | 373 | 2004 | 47 | 1.73+7 | 6.19+6 | 2.33+6 | 1.81+6 | 5.36+5 | 1.70+5 | 1.91+7 | 6.73+6 | 2.50+6 |
| E | TURKEY PT 3 | 2007 | 384 | 2002 | 47 | 1.73+7 | 6.83+6 | 2.82+6 | 1.29+6 | 4.42+5 | 1.60+5 | 1.86+7 | 7.27+6 | 2.98+6 |
| E | TURKEY PT 4 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| B | VOGTLE 1 | 2027 | 2495 | 2006 | 48 | 4.47+7 | 1.46+7 | 5.00+6 | 1.62+7 | 3.21+6 | 7.43+5 | 6.09+7 | 1.78+7 | 5.74+6 |
| B | VOGTLE 2 | 2028 | (a) | | | | | | | | | 0.00+0 | | |
| | VT YANKEE 1 | 2012 | 1068 | 1999 | 47 | 1.73+7 | 7.90+6 | 3.76+6 | 3.36+6 | 1.11+6 | 3.99+5 | 2.07+7 | 9.01+6 | 4.16+6 |
| | WASH NUCLEAR 2 | 2023 | 4018 | 1998 | 48 | 3.35+7 | 1.61+7 | 8.03+6 | 1.40+7 | 3.79+6 | 1.21+6 | 4.75+7 | 1.99+7 | 9.24+6 |
| | WATERFORD 3 | 2024 | 1143 | 2006 | 47 | 2.55+7 | 8.31+6 | 2.85+6 | 7.29+6 | 1.54+6 | 3.71+5 | 3.28+7 | 9.85+6 | 3.22+6 |
| A | WATTS BAR 1 | 2025 | 2691 | 2001 | 48 | 4.69+7 | 1.95+7 | 8.43+6 | 1.94+7 | 4.63+6 | 1.31+6 | 6.63+7 | 2.41+7 | 9.74+6 |
| A | WATTS BAR 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| | WOLF CREEK 1 | 2025 | 857 | 2008 | 47 | 2.35+7 | 6.95+6 | 2.17+6 | 6.24+6 | 1.22+6 | 2.72+5 | 2.97+7 | 8.17+6 | 2.44+6 |
| | YANKEE-ROWE 1 | 2001 | 36 | 1999 | 47 | 1.73+7 | 7.90+6 | 3.76+6 | 5.16+5 | 2.20+5 | 9.75+4 | 1.78+7 | 8.12+6 | 3.86+6 |
| A | ZION 1 | 2008 | 1295 | 1995 | 48 | 2.92+7 | 1.63+7 | 9.30+6 | 6.19+6 | 2.49+6 | 1.08+6 | 3.54+7 | 1.88+7 | 1.04+7 |
| A | ZION 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| | TOTAL | | | | | 2.45+9 | 1.13+9 | 5.09+8 | 6.99+8 | 2.06+8 | 7.55+7 | 3.15+9 | 1.34+9 | 6.65+8 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A3b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - DRYWELL OPTION
(1983 DOLLARS)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | 2008 | 737 | (b) | 47 | 2.21+7 | 1.73+7 | 1.37+7 | 6.81+6 | 3.32+6 | 1.80+6 | 2.89+7 | 2.06+7 | 1.55+7 |
| | ARK NUCLEAR 2 | 2012 | 973 | 1989 | 47 | 2.39+7 | 1.78+7 | 1.35+7 | 8.58+6 | 3.76+6 | 1.87+6 | 3.25+7 | 2.16+7 | 1.54+7 |
| | BEAVER VALLEY 1 | 2016 | 1267 | (b) | 48 | 2.98+7 | 2.27+7 | 1.80+7 | 1.32+7 | 5.50+6 | 2.72+6 | 4.22+7 | 2.82+7 | 2.07+7 |
| | BEAVER VALLEY 2 | 2026 | 1298 | 2000 | 48 | 2.91+7 | 1.27+7 | 5.76+6 | 1.23+7 | 2.98+6 | 8.60+5 | 4.14+7 | 1.57+7 | 6.62+6 |
| | BELLEFONTE 1 | 2028 | 2404 | 2000 | 48 | 4.33+7 | 1.89+7 | 8.57+6 | 2.08+7 | 4.83+6 | 1.37+6 | 6.41+7 | 2.37+7 | 9.94+6 |
| | BELLEFONTE 2 | 2030 | 2404 | 2002 | 48 | 4.33+7 | 1.72+7 | 7.09+6 | 2.08+7 | 4.38+6 | 1.13+6 | 6.41+7 | 2.16+7 | 8.22+6 |
| | BIG ROCK 1 | 2001 | 175 | 1992 | 47 | 1.73+7 | 1.11+7 | 7.32+6 | 2.32+6 | 1.18+6 | 6.31+5 | 1.98+7 | 1.23+7 | 7.95+6 |
| A | BRAIDWOOD 1 | 2026 | 4383 | 1990 | 49 | 7.18+7 | 5.18+7 | 3.68+7 | 4.47+7 | 1.46+7 | 6.17+6 | 1.17+8 | 6.58+7 | 4.30+7 |
| A | BRAIDWOOD 2 | 2027 | (a) | 1990 | | | | | | | | | | |
| B | BROWNS FERRY 1 | 2014 | 4594 | 1998 | 48 | 3.68+7 | 1.77+7 | 8.80+6 | 9.92+6 | 3.23+6 | 1.16+6 | 4.67+7 | 2.09+7 | 9.96+6 |
| B | BROWNS FERRY 2 | 2014 | (a) | 1998 | | | | | | | | | | |
| | BROWNS FERRY 3 | 2017 | 3353 | 1995 | 48 | 2.97+7 | 1.68+7 | 9.47+6 | 1.07+7 | 3.56+6 | 1.36+6 | 4.04+7 | 2.02+7 | 1.08+7 |
| | BRUNSWICK 1 | 2010 | 3153 | (b) | 48 | 2.87+7 | 2.25+7 | 1.78+7 | 1.03+7 | 4.81+6 | 2.54+6 | 3.90+7 | 2.73+7 | 2.03+7 |
| | BRUNSWICK 2 | 2010 | 3033 | (b) | 48 | 2.79+7 | 2.18+7 | 1.73+7 | 9.91+6 | 4.65+6 | 2.45+6 | 3.78+7 | 2.65+7 | 1.98+7 |
| A | BYRON 1 | 2024 | 4413 | (b) | 49 | 7.20+7 | 5.64+7 | 4.47+7 | 4.50+7 | 1.62+7 | 7.50+6 | 1.17+8 | 7.26+7 | 5.22+7 |
| A | BYRON 2 | 2026 | (a) | (b) | | | | | | | | | | |
| | CALLAWAY 1 | 2024 | 1633 | 1998 | 48 | 3.30+7 | 1.75+7 | 9.56+6 | 1.54+7 | 4.33+6 | 1.48+6 | 4.84+7 | 2.18+7 | 1.10+7 |
| B | CALVERT CLF 1 | 2014 | 2789 | (b) | 48 | 4.31+7 | 3.38+7 | 2.68+7 | 1.92+7 | 8.32+6 | 4.20+6 | 6.23+7 | 4.21+7 | 3.10+7 |
| B | CALVERT CLF 2 | 2016 | (a) | (b) | | | | | | | | | | |
| | CATAWBA 1 | 2025 | 228 | 2021 | 47 | 1.73+7 | 2.70+6 | 4.61+5 | 1.03+6 | 1.43+5 | 2.19+4 | 1.83+7 | 2.84+6 | 4.83+5 |
| | CATAWBA 2 | 2026 | 210 | 2023 | 47 | 1.73+7 | 2.45+6 | 3.81+5 | 7.75+5 | 9.99+4 | 1.42+4 | 1.81+7 | 2.55+6 | 3.95+5 |
| | CLINTON 1 | 2027 | 3260 | 2000 | 48 | 2.92+7 | 1.27+7 | 5.77+6 | 1.28+7 | 3.04+6 | 8.68+5 | 4.20+7 | 1.57+7 | 6.64+6 |
| B | COMANCHE PK 1 | 2030 | 2661 | 2010 | 48 | 4.65+7 | 1.25+7 | 3.55+6 | 1.60+7 | 2.68+6 | 5.21+5 | 6.25+7 | 1.52+7 | 4.07+6 |
| B | COMANCHE PK 2 | 2030 | (a) | 2010 | | | | | | | | | | |
| A | COOK 1 | 2009 | 2009 | 1991 | 48 | 3.89+7 | 2.63+7 | 1.82+7 | 1.19+7 | 5.23+6 | 2.53+6 | 5.08+7 | 3.15+7 | 2.07+7 |
| A | COOK 2 | 2009 | (a) | 1991 | | | | | | | | | | |
| | COOPER STN | 2008 | 1702 | 1993 | 47 | 2.13+7 | 1.31+7 | 8.22+6 | 4.89+6 | 2.08+6 | 9.57+5 | 2.62+7 | 1.52+7 | 9.18+6 |
| | CRYSTAL RVR 3 | 2016 | 648 | 1999 | 47 | 2.09+7 | 9.58+6 | 4.55+6 | 5.42+6 | 1.65+6 | 5.57+5 | 2.63+7 | 1.12+7 | 5.11+6 |
| | DAVIS-BESSE 1 | 2017 | 2850 | 1988 | 49 | 4.94+7 | 3.87+7 | 3.07+7 | 2.47+7 | 1.01+7 | 4.98+6 | 7.41+7 | 4.88+7 | 3.57+7 |
| | DIABLO CANYON 1 | 2025 | 772 | 2006 | 47 | 2.25+7 | 7.32+6 | 2.51+6 | 6.61+6 | 1.37+6 | 3.25+5 | 2.91+7 | 8.69+6 | 2.84+6 |
| | DIABLO CANYON 2 | 2025 | 772 | 2006 | 47 | 2.25+7 | 7.32+6 | 2.51+6 | 6.61+6 | 1.37+6 | 3.25+5 | 2.91+7 | 8.69+6 | 2.84+6 |
| | DRESDEN 1 | 1984 | | | | | | | | | | | | |
| | DRESDEN 2 | 2008 | 1647 | 1992 | 47 | 2.04+7 | 1.32+7 | 8.66+6 | 4.97+6 | 2.17+6 | 1.03+6 | 2.54+7 | 1.54+7 | 9.69+6 |
| | DRESDEN 3 | 2008 | 1325 | 1994 | 47 | 1.85+7 | 1.08+7 | 6.47+6 | 3.89+6 | 1.61+6 | 7.17+5 | 2.24+7 | 1.24+7 | 7.19+6 |
| | DUANE ARNOLD | 2010 | 1510 | 1991 | 47 | 2.01+7 | 1.36+7 | 9.38+6 | 5.80+6 | 2.50+6 | 1.19+6 | 2.59+7 | 1.61+7 | 1.06+7 |
| | ENRICO FERMI 2 | 2025 | 6459 | 1990 | 48 | 4.55+7 | 3.23+7 | 2.33+7 | 2.74+7 | 9.12+6 | 3.88+6 | 7.29+7 | 4.14+7 | 2.72+7 |
| | FARLEY 1 | 2012 | 708 | 1997 | 47 | 2.17+7 | 1.10+7 | 5.72+6 | 5.01+6 | 1.75+6 | 6.68+5 | 2.67+7 | 1.28+7 | 6.39+6 |
| | FARLEY 2 | 2012 | 548 | 1999 | 47 | 1.94+7 | 8.90+6 | 4.23+6 | 3.82+6 | 1.26+6 | 4.54+5 | 2.32+7 | 1.02+7 | 4.68+6 |
| | FITZPATRICK | 2015 | 2968 | 1991 | 48 | 2.77+7 | 1.97+7 | 1.29+7 | 1.07+7 | 4.17+6 | 1.87+6 | 3.84+7 | 2.29+7 | 1.48+7 |
| | FORT CALHOUN | 2008 | 683 | (b) | 47 | 1.89+7 | 1.48+7 | 1.18+7 | 4.86+6 | 2.52+6 | 1.42+6 | 2.38+7 | 1.73+7 | 1.32+7 |
| | FT ST VRAIN | 2007 | | | | | | | | | | | | |
| | GINNA | 2006 | 411 | 1994 | 47 | 1.73+7 | 1.01+7 | 6.05+6 | 3.10+6 | 1.34+6 | 6.17+5 | 2.04+7 | 1.14+7 | 6.67+6 |
| | GRAND GULF 1 | 2022 | 5464 | 1992 | 48 | 4.09+7 | 2.64+7 | 1.73+7 | 2.09+7 | 6.91+6 | 2.79+6 | 6.18+7 | 3.33+7 | 2.01+7 |
| | HADDAM NECK | 2007 | 631 | 1990 | 47 | 1.95+7 | 1.39+7 | 1.00+7 | 5.02+6 | 2.37+6 | 1.22+6 | 2.45+7 | 1.63+7 | 1.12+7 |
| | HARRIS 1 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | | | |

TABLE A3b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - DRYWELL OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| B | HATCH 1 | 2009 | 4050 | 1998 | 48 | 3.38+7 | 1.79+7 | 9.79+6 | 7.33+6 | 2.81+6 | 1.16+6 | 4.11+7 | 2.07+7 | 1.10+7 |
| B | HATCH 2 | 2012 | (a) | 1998 | | | | | | | | | | |
| | HOPE CREEK | 2026 | 3748 | 2001 | 48 | 3.21+7 | 1.33+7 | 5.78+6 | 1.33+7 | 3.12+6 | 8.69+5 | 4.54+7 | 1.64+7 | 6.65+6 |
| | HUMBOLDT BAY | 1976 | | | | | | | | | | | | |
| | INDIAN PT 1 | 1980 | | | | | | | | | | | | |
| | INDIAN PT 2 | 2008 | 901 | (b) | 47 | 2.40+7 | 1.68+7 | 1.49+7 | 6.75+6 | 3.44+6 | 1.91+6 | 3.08+7 | 2.22+7 | 1.68+7 |
| | INDIAN PT 3 | 2015 | 992 | 1994 | 47 | 2.52+7 | 1.47+7 | 8.83+6 | 8.38+6 | 2.99+6 | 1.21+6 | 3.36+7 | 1.77+7 | 1.00+7 |
| | KEWAUNEE | 2014 | 801 | 1993 | 47 | 2.16+7 | 1.29+7 | 8.11+6 | 6.75+6 | 2.53+6 | 1.07+6 | 2.78+7 | 1.54+7 | 9.18+6 |
| | LACROSSE | 2002 | 301 | 1987 | 47 | 1.73+7 | 1.42+7 | 1.18+7 | 3.87+6 | 2.20+6 | 1.34+6 | 2.12+7 | 1.64+7 | 1.31+7 |
| B | LASALLE CTY 1 | 2022 | 11144 | (b) | 50 | 7.15+7 | 5.66+7 | 4.44+7 | 4.31+7 | 1.61+7 | 7.55+6 | 1.15+8 | 7.21+7 | 5.20+7 |
| B | LASALLE CTY 2 | 2023 | (a) | (b) | | | | | | | | | | |
| | LIMERICK 1 | 2024 | 4992 | 1988 | 48 | 3.91+7 | 3.06+7 | 2.43+7 | 2.39+7 | 8.60+6 | 3.98+6 | 6.30+7 | 3.92+7 | 2.83+7 |
| | LIMERICK 2 | 2029 | 5116 | 1991 | 48 | 3.95+7 | 2.67+7 | 1.84+7 | 2.55+7 | 7.67+6 | 3.05+6 | 6.50+7 | 3.44+7 | 2.15+7 |
| | MAINE YANKEE | 2008 | 1070 | 1987 | 47 | 2.35+7 | 1.94+7 | 1.61+7 | 7.71+6 | 3.87+6 | 2.17+6 | 3.12+7 | 2.33+7 | 1.83+7 |
| | MCGUIRE 1 | 2021 | 1397 | 1997 | 48 | 3.06+7 | 1.55+7 | 8.07+6 | 1.21+7 | 3.51+6 | 1.19+6 | 4.27+7 | 1.90+7 | 9.26+6 |
| | MCGUIRE 2 | 2023 | 1421 | 1998 | 48 | 3.10+7 | 1.49+7 | 7.42+6 | 1.26+7 | 3.46+6 | 1.11+6 | 4.36+7 | 1.84+7 | 8.53+6 |
| | MILLSTONE 1 | 2010 | 2872 | (b) | 48 | 2.67+7 | 2.09+7 | 1.65+7 | 9.39+6 | 4.40+6 | 2.33+6 | 3.61+7 | 2.53+7 | 1.88+7 |
| | MILLSTONE 2 | 2015 | 1291 | (b) | 48 | 2.70+7 | 2.12+7 | 1.68+7 | 1.17+7 | 4.98+6 | 2.49+6 | 3.87+7 | 2.62+7 | 1.93+7 |
| | MILLSTONE 3 | 2025 | 1045 | 2007 | 47 | 2.59+7 | 8.82+6 | 2.63+6 | 7.41+6 | 1.49+6 | 3.43+5 | 3.33+7 | 9.51+6 | 2.97+6 |
| | MONTICELLO | 2007 | 835 | 1998 | 47 | 1.73+7 | 8.30+6 | 4.13+6 | 2.32+6 | 8.83+5 | 3.56+5 | 1.96+7 | 9.18+6 | 4.49+6 |
| | NINE MILE PT 1 | 2005 | 1252 | 1990 | 47 | 1.82+7 | 1.29+7 | 9.32+6 | 4.09+6 | 2.01+6 | 1.06+6 | 2.23+7 | 1.49+7 | 1.04+7 |
| | NINE MILE PT 2 | 2026 | 2533 | 2007 | 47 | 2.54+7 | 7.87+6 | 2.58+6 | 7.65+6 | 1.51+6 | 3.42+5 | 3.31+7 | 9.38+6 | 2.92+6 |
| A | NORTH ANNA 1 | 2018 | 2451 | 1992 | 48 | 4.52+7 | 2.91+7 | 1.91+7 | 2.02+7 | 7.20+6 | 3.02+6 | 6.54+7 | 3.63+7 | 2.21+7 |
| A | NORTH ANNA 2 | 2020 | (a) | 1992 | | | | | | | | | | |
| A | OCONEE 1 | 2013 | 2641 | (b) | 48 | 4.64+7 | 3.64+7 | 2.88+7 | 2.00+7 | 8.84+6 | 4.51+6 | 6.64+7 | 4.52+7 | 3.33+7 |
| A | OCONEE 2 | 2013 | (a) | (b) | | | | | | | | | | |
| | OCONEE 3 | 2014 | 1381 | (b) | 48 | 3.05+7 | 2.39+7 | 1.89+7 | 1.30+7 | 5.64+6 | 2.85+6 | 4.35+7 | 2.95+7 | 2.18+7 |
| | OYSTER CRK 1 | 2004 | 1424 | 1989 | 47 | 1.92+7 | 1.44+7 | 1.09+7 | 4.36+6 | 2.25+6 | 1.25+6 | 2.36+7 | 1.67+7 | 1.22+7 |
| | PALISADES | 2011 | 1039 | (b) | 47 | 2.39+7 | 1.87+7 | 1.48+7 | 8.59+6 | 3.95+6 | 2.06+6 | 3.25+7 | 2.27+7 | 1.69+7 |
| | PALO VERDE 1 | 2024 | 1627 | 1998 | 48 | 3.14+7 | 1.66+7 | 9.09+6 | 1.45+7 | 4.09+6 | 1.40+6 | 4.59+7 | 2.07+7 | 1.05+7 |
| | PALO VERDE 2 | 2025 | 1631 | 1997 | 48 | 3.14+7 | 1.59+7 | 8.28+6 | 1.45+7 | 3.91+6 | 1.27+6 | 4.59+7 | 1.98+7 | 9.55+6 |
| | PALO VERDE 3 | 2026 | 1631 | 1998 | 48 | 3.14+7 | 1.51+7 | 7.53+6 | 1.45+7 | 3.72+6 | 1.16+6 | 4.59+7 | 1.88+7 | 8.69+6 |
| | PEACHBOTTOM 2 | 2008 | 2724 | 1991 | 47 | 2.63+7 | 1.78+7 | 1.23+7 | 7.16+6 | 3.21+6 | 1.58+6 | 3.35+7 | 2.10+7 | 1.39+7 |
| | PEACHBOTTOM 3 | 2008 | 2469 | 1991 | 47 | 2.51+7 | 1.70+7 | 1.17+7 | 6.74+6 | 3.03+6 | 1.48+6 | 3.18+7 | 2.00+7 | 1.32+7 |
| | PERRY 1 | 2026 | 3444 | 2003 | 48 | 3.04+7 | 1.14+7 | 4.51+6 | 1.15+7 | 2.53+6 | 6.59+5 | 4.19+7 | 1.39+7 | 5.17+6 |
| | PILGRIM 1 | 2008 | 1896 | 1988 | 47 | 2.20+7 | 1.72+7 | 1.36+7 | 6.76+6 | 3.30+6 | 1.79+6 | 2.88+7 | 2.05+7 | 1.54+7 |
| A | POINT BEACH 1 | 2007 | 1137 | 1990 | 47 | 2.45+7 | 1.74+7 | 1.26+7 | 6.56+6 | 3.09+6 | 1.59+6 | 3.11+7 | 2.05+7 | 1.42+7 |
| A | POINT BEACH 2 | 2008 | (a) | 1990 | | | | | | | | | | |
| A | PRAIRIE ISL 1 | 2008 | 1502 | 1988 | 48 | 2.77+7 | 2.17+7 | 1.72+7 | 8.94+6 | 4.36+6 | 2.36+6 | 3.66+7 | 2.61+7 | 1.96+7 |
| A | PRAIRIE ISL 2 | 2008 | (a) | 1988 | | | | | | | | | | |
| B | QUAD CITIES 1 | 2007 | 1463 | 2002 | 47 | 1.96+7 | 7.77+6 | 3.21+6 | 1.49+6 | 5.09+5 | 1.84+5 | 2.11+7 | 8.28+6 | 3.39+6 |
| B | QUAD CITIES 2 | 2007 | (a) | 2002 | | | | | | | | | | |
| | RANCHO SECO 1 | 2008 | 648 | 1992 | 47 | 2.08+7 | 1.34+7 | 8.82+6 | 5.07+6 | 2.22+6 | 1.05+6 | 2.59+7 | 1.56+7 | 9.87+6 |
| | ROBINSON 2 | 2007 | 958 | (b) | 47 | 2.37+7 | 1.66+7 | 1.47+7 | 7.04+6 | 3.51+6 | 1.93+6 | 3.07+7 | 2.21+7 | 1.66+7 |
| | RVR BEND 1 | 2025 | 3220 | 2001 | 48 | 2.92+7 | 1.22+7 | 5.26+6 | 1.14+7 | 2.73+6 | 7.71+5 | 4.06+7 | 1.49+7 | 6.03+6 |
| | SALEM 1 | 2016 | 1487 | 1989 | 48 | 3.19+7 | 2.38+7 | 1.80+7 | 1.43+7 | 5.78+6 | 2.76+6 | 4.62+7 | 2.96+7 | 2.08+7 |
| | SALEM 2 | 2020 | 1667 | 1992 | 48 | 3.45+7 | 2.28+7 | 1.46+7 | 1.62+7 | 5.55+6 | 2.28+6 | 5.07+7 | 2.79+7 | 1.69+7 |

TABLE A3b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - DRYWELL OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 3172 | 1989 | 48 | 4.52+7 | 3.37+7 | 2.55+7 | 7.78+6 | 4.49+6 | 2.70+6 | 5.30+7 | 3.82+7 | 2.82+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | 1989 | | | | | | | | | | |
| E | SAN ONOFRE 3 | 2013 | (a) | 1989 | | | | | | | | | | |
| | SEABROOK 1 | 2031 | 1645 | 2000 | 48 | 3.42+7 | 1.49+7 | 6.77+6 | 1.77+7 | 3.89+6 | 1.07+6 | 5.19+7 | 1.88+7 | 7.84+6 |
| A | SEQUOYAH 1 | 2021 | 3400 | 1989 | 49 | 5.82+7 | 4.34+7 | 3.29+7 | 3.21+7 | 1.18+7 | 5.40+6 | 9.03+7 | 5.52+7 | 3.83+7 |
| A | SEQUOYAH 2 | 2022 | (a) | 1989 | | | | | | | | | | |
| | SHOREHAM | 2027 | 3371 | 2000 | 48 | 2.97+7 | 1.30+7 | 5.88+6 | 1.31+7 | 3.10+6 | 8.88+5 | 4.28+7 | 1.61+7 | 6.77+6 |
| | SOUTH TEXAS 1 | 2027 | 570 | 2017 | 47 | 2.12+7 | 4.04+6 | 8.30+5 | 3.24+6 | 4.77+5 | 7.80+4 | 2.44+7 | 4.52+6 | 9.08+5 |
| | SOUTH TEXAS 2 | 2028 | 570 | 2018 | 47 | 2.11+7 | 3.83+6 | 7.51+5 | 3.23+6 | 4.52+5 | 7.08+4 | 2.43+7 | 4.28+6 | 8.22+5 |
| | ST LUCIE 1 | 2010 | 1638 | (b) | 48 | 2.98+7 | 2.32+7 | 1.84+7 | 1.07+7 | 5.00+6 | 2.64+6 | 4.03+7 | 2.82+7 | 2.10+7 |
| | ST LUCIE 2 | 2023 | 1558 | 1992 | 48 | 2.87+7 | 1.85+7 | 1.22+7 | 1.45+7 | 4.69+6 | 1.88+6 | 4.32+7 | 2.32+7 | 1.41+7 |
| | SUMMER 1 | 2024 | 1169 | 1999 | 48 | 2.74+7 | 1.26+7 | 5.98+6 | 1.10+7 | 2.85+6 | 8.72+5 | 3.84+7 | 1.55+7 | 6.83+6 |
| A | SURRY 1 | 2012 | 574 | 2005 | 47 | 1.97+7 | 6.74+6 | 2.42+6 | 2.09+6 | 5.91+5 | 1.79+5 | 2.18+7 | 7.33+6 | 2.60+6 |
| A | SURRY 2 | 2013 | (a) | 2005 | | | | | | | | | | |
| B | SUSQUEHANNA 1 | 2022 | 8680 | 1995 | 49 | 5.77+7 | 3.21+7 | 1.84+7 | 2.68+7 | 8.11+6 | 2.93+6 | 8.45+7 | 4.02+7 | 2.13+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | 1995 | | | | | | | | | | |
| | THREE MILE ISL 1 | 2008 | 513 | 1997 | 47 | 1.88+7 | 9.50+6 | 4.95+6 | 3.12+6 | 1.19+6 | 4.85+5 | 2.19+7 | 1.07+7 | 5.44+6 |
| | TROJAN | 2011 | 661 | 1998 | 47 | 2.10+7 | 1.01+7 | 5.04+6 | 4.18+6 | 1.45+6 | 5.47+5 | 2.52+7 | 1.16+7 | 5.59+6 |
| E | TURKEY PT 3 | 2007 | 918 | 1995 | 47 | 2.30+7 | 1.28+7 | 7.32+6 | 4.28+6 | 1.76+6 | 7.75+5 | 2.73+7 | 1.46+7 | 8.10+6 |
| E | TURKEY PT 4 | 2007 | (a) | 1995 | | | | | | | | | | |
| B | VOGTLE 1 | 2027 | 3261 | 2000 | 49 | 5.51+7 | 2.40+7 | 1.09+7 | 2.57+7 | 6.08+6 | 1.74+6 | 8.08+7 | 3.01+7 | 1.26+7 |
| B | VOGTLE 2 | 2028 | (a) | 2000 | | | | | | | | | | |
| | VT YANKEE 1 | 2012 | 1596 | 1993 | 47 | 2.07+7 | 1.27+7 | 8.00+6 | 6.01+6 | 2.35+6 | 1.02+6 | 2.67+7 | 1.51+7 | 9.02+6 |
| | WASH NUCLEAR 2 | 2023 | 4642 | 1994 | 48 | 3.70+7 | 2.17+7 | 1.30+7 | 1.81+7 | 5.53+6 | 2.05+6 | 5.51+7 | 2.72+7 | 1.51+7 |
| | WATERFORD 3 | 2024 | 1671 | 1997 | 48 | 3.19+7 | 1.61+7 | 8.41+6 | 1.43+7 | 3.91+6 | 1.29+6 | 4.62+7 | 2.00+7 | 9.70+6 |
| A | WATTS BAR 1 | 2026 | 3411 | 1994 | 49 | 5.84+7 | 9.42+7 | 2.05+7 | 3.12+7 | 9.18+6 | 3.35+6 | 8.96+7 | 4.34+7 | 2.39+7 |
| A | WATTS BAR 2 | 2027 | (a) | 1994 | | | | | | | | | | |
| | WOLF CREEK 1 | 2025 | 1313 | 1999 | 48 | 2.95+7 | 1.35+7 | 6.41+6 | 1.25+7 | 3.17+6 | 9.59+5 | 4.20+7 | 1.67+7 | 7.37+6 |
| | YANKEE-ROWE 1 | 2001 | 264 | 1990 | 47 | 1.73+7 | 1.23+7 | 8.85+6 | 2.84+6 | 1.52+6 | 8.61+5 | 2.01+7 | 1.38+7 | 9.71+6 |
| A | ZION 1 | 2008 | 1943 | 1988 | 48 | 3.83+7 | 3.00+7 | 2.38+7 | 1.30+7 | 6.35+6 | 3.44+6 | 5.13+7 | 3.64+7 | 2.72+7 |
| A | ZION 2 | 2008 | (a) | 1988 | | | | | | | | | | |
| | TOTAL | | | | | 2.93+9 | 1.77+9 | 1.17+9 | 1.14+9 | 3.92+8 | 1.69+8 | 4.07+9 | 2.16+9 | 1.34+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1.
(b) NEED ADDITIONAL SPACE AS OF 1988.

TABLE A4. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - VAULT STORAGE OPTION(1983 DOLLARS).

| | PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | P | 120 | 3.50+7 | 1.77+7 | 9.36+6 | 5.42+5 | 5.39+7 | 3.79+7 | 2.83+7 | 1.94+7 | 2.07+7 | 1.94+7 |
| | ARK NUCLEAR 2 | P | 136 | 3.94+7 | 1.71+7 | 7.82+6 | 5.54+5 | 6.23+7 | 4.06+7 | 2.86+7 | 2.35+7 | 2.41+7 | 2.13+7 |
| | BEAVER VALLEY 1 | P | 138 | 5.89+7 | 2.80+7 | 1.44+7 | 6.21+5 | 8.52+7 | 5.59+7 | 4.06+7 | 2.69+7 | 2.85+7 | 2.69+7 |
| | BEAVER VALLEY 2 | P | 146 | 5.62+7 | 1.45+7 | 4.12+6 | 6.47+5 | 8.36+7 | 3.11+7 | 1.30+7 | 2.80+7 | 1.72+7 | 9.56+6 |
| | BELLEFONTE 1 | P | 168 | 1.04+8 | 2.65+7 | 7.44+6 | 7.34+5 | 1.44+8 | 5.28+7 | 2.20+7 | 4.08+7 | 2.70+7 | 1.53+7 |
| | BELLEFONTE 2 | P | 168 | 1.04+8 | 2.41+7 | 6.16+6 | 7.34+5 | 1.44+8 | 4.79+7 | 1.82+7 | 4.08+7 | 2.46+7 | 1.28+7 |
| | BIG ROCK 1 | B | 40 | 3.19+7 | 1.75+7 | 9.90+6 | 6.56+4 | 3.35+7 | 2.10+7 | 1.35+7 | 1.62+6 | 3.58+6 | 3.63+6 |
| A | BRAIDWOOD 1 | P | 252 | 2.01+8 | 8.79+7 | 4.39+7 | 1.03+6 | 2.61+8 | 1.39+8 | 8.59+7 | 6.08+7 | 5.20+7 | 4.31+7 |
| A | BRAIDWOOD 2 | P | (a) | | | | | | | | | | |
| B | BROWNS FERRY 1 | B | 684 | 6.85+7 | 2.57+7 | 1.03+7 | 1.32+6 | 9.76+7 | 4.35+7 | 2.07+7 | 3.04+7 | 1.91+7 | 1.17+7 |
| B | BROWNS FERRY 2 | B | (a) | | | | | | | | | | |
| | BROWNS FERRY 3 | B | 456 | 5.99+7 | 2.30+7 | 9.51+6 | 9.02+5 | 8.14+7 | 3.99+7 | 2.14+7 | 2.24+7 | 1.78+7 | 1.28+7 |
| | BRUNSWICK 1 | B | 376 | 6.30+7 | 4.02+7 | 2.72+7 | 7.59+5 | 7.79+7 | 5.38+7 | 3.98+7 | 1.57+7 | 1.44+7 | 1.34+7 |
| | | P | | 0.00+0 | | | | | | | | | |
| | BRUNSWICK 2 | B | 376 | 5.97+7 | 3.66+7 | 2.37+7 | 7.52+5 | 7.52+7 | 5.19+7 | 3.84+7 | 1.63+7 | 1.61+7 | 1.54+7 |
| | | P | | 0.00+0 | | | | | | | | | |
| A | BYRON 1 | P | 264 | 2.01+8 | 9.69+7 | 5.31+7 | 1.07+6 | 2.62+8 | 1.43+8 | 8.93+7 | 6.19+7 | 4.69+7 | 3.73+7 |
| A | BYRON 2 | P | (a) | | | | | | | | | | |
| | CALLAWAY 1 | P | 168 | 6.71+7 | 2.07+7 | 7.01+6 | 7.13+5 | 9.99+7 | 4.44+7 | 2.22+7 | 3.35+7 | 2.44+7 | 1.59+7 |
| B | CALVERT CLF 1 | P | 192 | 1.08+8 | 6.13+7 | 3.76+7 | 7.16+5 | 1.39+8 | 8.94+7 | 6.24+7 | 3.22+7 | 2.88+7 | 2.55+7 |
| B | CALVERT CLF 2 | P | (a) | | | | | | | | | | |
| | CATAWBA 1 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 6.42+5 | 3.09+7 | 4.80+6 | 8.14+5 | 3.15+7 | 5.44+6 | 1.46+6 |
| | CATAWBA 2 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 5.94+5 | 3.04+7 | 4.20+6 | 6.64+5 | 3.09+7 | 4.88+6 | 1.26+6 |
| | CLINTON 1 | B | 344 | 6.64+7 | 1.93+7 | 6.17+6 | 6.96+5 | 8.49+7 | 3.12+7 | 1.31+7 | 1.92+7 | 1.27+7 | 7.58+6 |
| B | COMANCHE PK 1 | P | 198 | 1.08+8 | 2.10+7 | 4.55+6 | 8.76+5 | 1.44+8 | 3.47+7 | 9.29+6 | 3.74+7 | 1.46+7 | 5.62+6 |
| B | COMANCHE PK 2 | P | (a) | | | | | | | | | | |
| A | COOK 1 | P | 256 | 6.52+7 | 3.00+7 | 1.45+7 | 1.12+6 | 1.08+8 | 6.68+7 | 4.36+7 | 4.42+7 | 3.79+7 | 3.02+7 |
| A | COOK 2 | P | (a) | | | | | | | | | | |
| | COOPER STN | B | 232 | 3.74+7 | 1.82+7 | 9.19+6 | 4.90+5 | 4.79+7 | 2.74+7 | 1.65+7 | 1.10+7 | 9.73+6 | 7.84+6 |
| | CRYSTAL RVR 3 | P | 72 | 3.45+7 | 1.13+7 | 3.95+6 | 3.34+5 | 4.80+7 | 2.03+7 | 9.14+6 | 1.39+7 | 9.29+6 | 5.52+6 |
| | DAVIS-BESSE 1 | P | 120 | 1.42+8 | 6.98+7 | 3.73+7 | 5.48+5 | 1.74+8 | 1.06+8 | 7.17+7 | 3.26+7 | 3.70+7 | 3.49+7 |
| | DIABLO CANYON 1 | P | 85 | 4.01+7 | 9.64+6 | 2.52+6 | 3.89+5 | 5.45+7 | 1.60+7 | 5.19+6 | 1.48+7 | 6.80+6 | 3.06+6 |
| | DIABLO CANYON 2 | P | 85 | 4.01+7 | 9.64+6 | 2.52+6 | 3.89+5 | 5.45+7 | 1.60+7 | 5.19+6 | 1.48+7 | 6.80+6 | 3.06+6 |
| | DRESDEN 1 | B | | 0.00+0 | | | | | | | | | |
| | DRESDEN 2 | B | 316 | 3.40+7 | 1.58+7 | 7.65+6 | 6.12+5 | 4.59+7 | 2.74+7 | 1.72+7 | 1.26+7 | 1.22+7 | 1.01+7 |
| | DRESDEN 3 | B | 316 | 3.29+7 | 1.41+7 | 6.25+6 | 6.12+5 | 3.92+7 | 2.16+7 | 1.25+7 | 6.89+6 | 8.12+6 | 6.83+6 |
| | DUANE ARNOLD | B | 256 | 3.45+7 | 1.52+7 | 7.00+6 | 5.30+5 | 4.69+7 | 2.87+7 | 1.87+7 | 1.29+7 | 1.41+7 | 1.22+7 |
| | ENRICO FERMI 2 | B | 552 | 1.31+8 | 5.57+7 | 2.66+7 | 1.08+6 | 1.68+8 | 9.44+7 | 6.16+7 | 3.79+7 | 3.98+7 | 3.61+7 |
| | FARLEY 1 | P | 136 | 3.19+7 | 1.02+7 | 3.47+6 | 6.13+5 | 4.91+7 | 2.31+7 | 1.15+7 | 1.78+7 | 1.35+7 | 8.67+6 |
| | FARLEY 2 | P | 136 | 3.09+7 | 9.04+6 | 2.81+6 | 6.13+5 | 4.12+7 | 1.79+7 | 8.19+6 | 1.09+7 | 9.48+6 | 5.99+6 |
| | FITZPATRICK | B | 360 | 5.68+7 | 2.71+7 | 1.34+7 | 7.30+5 | 7.65+7 | 4.49+7 | 2.87+7 | 1.84+7 | 1.85+7 | 1.61+7 |
| | FORT CALHOUN | P | 90 | 3.45+7 | 1.93+7 | 1.13+7 | 3.19+5 | 4.23+7 | 3.05+7 | 2.29+7 | 8.09+6 | 1.15+7 | 1.19+7 |
| | FT ST VRAIN | G | 240 | 0.00+0 | | | | | | | | | |
| | GINNA | P | 64 | 3.19+7 | 1.37+7 | 6.15+6 | 2.32+5 | 3.50+7 | 1.95+7 | 1.13+7 | 3.33+6 | 5.97+6 | 5.42+6 |
| | GRAND GULF 1 | B | 536 | 1.04+8 | 4.33+7 | 2.00+7 | 1.04+6 | 1.36+8 | 7.22+7 | 4.34+7 | 3.29+7 | 3.00+7 | 2.44+7 |
| | HADDAM NECK | P | 104 | 3.40+7 | 1.65+7 | 8.42+6 | 4.19+5 | 4.39+7 | 2.87+7 | 1.97+7 | 1.04+7 | 1.26+7 | 1.17+7 |
| | HARRIS 1 | P | 104 | 0.00+0 | | | 4.75+5 | | | | | | |
| | | B | | 0.00+0 | | | | | | | | | |

TABLE A4. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - VAULT STORAGE OPTION(1983 DOLLARS) (cont'd)

| PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| B HATCH 1 | B | 588 | 6.01+7 | 2.54+7 | 1.13+7 | 1.14+6 | 8.39+7 | 4.21+7 | 2.21+7 | 2.49+7 | 1.78+7 | 1.20+7 |
| B HATCH 2 | B | (a) | | | | | | | | | | |
| HOPE CREEK | B | 464 | 6.92+7 | 1.94+7 | 5.98+6 | 9.22+5 | 9.32+7 | 3.32+7 | 1.34+7 | 2.49+7 | 1.47+7 | 8.30+6 |
| HUMBOLDT BAY | B | | 0.00+0 | | | | | | | | | |
| INDIAN PT 1 | P | | 0.00+0 | | | | | | | | | |
| INDIAN PT 2 | P | 136 | 3.76+7 | 2.10+7 | 1.21+7 | 6.01+5 | 5.85+7 | 4.18+7 | 3.13+7 | 2.15+7 | 2.15+7 | 1.98+7 |
| INDIAN PT 3 | P | 152 | 3.92+7 | 1.35+7 | 4.94+6 | 6.77+5 | 6.53+7 | 3.39+7 | 1.91+7 | 2.67+7 | 2.11+7 | 1.48+7 |
| KEWAUNEE | P | 74 | 3.68+7 | 1.66+7 | 7.56+6 | 2.84+5 | 5.12+7 | 2.80+7 | 1.65+7 | 1.27+7 | 1.16+7 | 9.18+6 |
| LACROSSE | B | 48 | 3.40+7 | 2.12+7 | 1.36+7 | 6.68+4 | 3.66+7 | 2.81+7 | 2.24+7 | 2.66+6 | 7.01+6 | 8.90+6 |
| B LASALLE CTY 1 | B | 660 | 2.41+8 | 1.33+8 | 8.42+7 | 1.27+6 | 2.69+8 | 1.47+8 | 9.12+7 | 2.89+7 | 1.50+7 | 8.27+6 |
| B LASALLE CTY 2 | B | (a) | | | | | | | | | | |
| LIMERICK 1 | B | 448 | 1.06+8 | 4.68+7 | 2.56+7 | 8.93+5 | 1.36+8 | 8.14+7 | 5.64+7 | 3.17+7 | 3.35+7 | 3.17+7 |
| LIMERICK 2 | B | 440 | 1.11+8 | 4.34+7 | 1.97+7 | 8.73+5 | 1.42+8 | 7.37+7 | 4.56+7 | 3.18+7 | 3.12+7 | 2.68+7 |
| MAINE YANKEE | P | 146 | 3.85+7 | 1.95+7 | 1.03+7 | 5.25+5 | 5.95+7 | 4.29+7 | 3.28+7 | 2.16+7 | 2.39+7 | 2.31+7 |
| MCGUIRE 1 | P | 144 | 5.98+7 | 1.89+7 | 6.47+6 | 6.42+5 | 8.68+7 | 3.80+7 | 1.84+7 | 2.76+7 | 1.98+7 | 1.26+7 |
| MCGUIRE 2 | P | 144 | 6.16+7 | 1.84+7 | 5.99+6 | 6.42+5 | 8.92+7 | 3.68+7 | 1.69+7 | 2.82+7 | 1.90+7 | 1.16+7 |
| MILLSTONE 1 | B | 196 | 6.54+7 | 4.62+7 | 3.48+7 | 4.05+5 | 7.11+7 | 4.91+7 | 3.63+7 | 6.11+6 | 3.38+6 | 1.87+6 |
| MILLSTONE 2 | P | 156 | 5.18+7 | 2.39+7 | 1.18+7 | 6.13+5 | 7.72+7 | 5.11+7 | 3.73+7 | 2.60+7 | 2.79+7 | 2.61+7 |
| MILLSTONE 3 | P | 168 | 3.83+7 | 7.43+6 | 1.57+6 | 7.45+5 | 6.48+7 | 1.83+7 | 5.66+6 | 2.73+7 | 1.16+7 | 4.84+6 |
| MONTICELLO | B | 240 | 3.04+7 | 1.08+7 | 4.06+6 | 4.89+5 | 3.35+7 | 1.57+7 | 7.60+6 | 3.59+6 | 5.35+6 | 4.03+6 |
| NINE MILE PT 1 | B | 184 | 3.35+7 | 1.73+7 | 9.20+6 | 3.80+5 | 3.89+7 | 2.59+7 | 1.79+7 | 5.82+6 | 9.01+6 | 9.04+6 |
| NINE MILE PT 2 | B | 276 | 5.20+7 | 1.24+7 | 3.21+6 | 5.71+5 | 6.41+7 | 1.80+7 | 5.54+6 | 1.27+7 | 6.12+6 | 2.90+6 |
| A NORTH ANNA 1 | P | 195 | 1.07+8 | 4.43+7 | 1.99+7 | 8.91+5 | 1.50+8 | 8.23+7 | 5.00+7 | 4.34+7 | 3.89+7 | 3.09+7 |
| A NORTH ANNA 2 | P | (a) | | | | | | | | | | |
| A OCONEE 1 | P | 180 | 1.24+8 | 8.04+7 | 5.65+7 | 8.01+5 | 1.54+8 | 9.79+7 | 6.76+7 | 3.03+7 | 1.83+7 | 1.19+7 |
| A OCONEE 2 | P | (a) | | | | | | | | | | |
| OCONEE 3 | P | 120 | 6.85+7 | 4.06+7 | 2.60+7 | 5.42+5 | 8.86+7 | 5.91+7 | 4.31+7 | 2.06+7 | 1.91+7 | 1.77+7 |
| OYSTER CRK 1 | B | 256 | 3.40+7 | 1.91+7 | 1.12+7 | 5.11+5 | 4.19+7 | 2.91+7 | 2.12+7 | 8.41+6 | 1.05+7 | 1.05+7 |
| PALISADES | P | 68 | 5.48+7 | 3.76+7 | 2.77+7 | 2.70+5 | 6.23+7 | 4.28+7 | 3.15+7 | 7.77+6 | 5.40+6 | 4.06+6 |
| PALO VERDE 1 | P | 170 | 6.36+7 | 1.97+7 | 6.66+6 | 6.74+5 | 9.40+7 | 4.17+7 | 2.10+7 | 3.11+7 | 2.28+7 | 1.50+7 |
| PALO VERDE 2 | P | 170 | 6.38+7 | 1.88+7 | 6.06+6 | 6.74+5 | 9.43+7 | 3.98+7 | 1.91+7 | 3.12+7 | 2.17+7 | 1.37+7 |
| PALO VERDE 3 | P | 170 | 6.38+7 | 1.78+7 | 5.51+6 | 6.74+5 | 9.43+7 | 3.80+7 | 1.73+7 | 3.12+7 | 2.08+7 | 1.25+7 |
| PEACHBOTTOM 2 | B | 456 | 4.66+7 | 2.25+7 | 1.14+7 | 9.02+5 | 6.54+7 | 4.06+7 | 2.65+7 | 1.97+7 | 1.90+7 | 1.60+7 |
| PEACHBOTTOM 3 | B | 440 | 4.32+7 | 2.10+7 | 1.06+7 | 8.73+5 | 6.13+7 | 3.81+7 | 2.49+7 | 1.90+7 | 1.80+7 | 1.52+7 |
| PERRY 1 | B | 448 | 6.28+7 | 1.63+7 | 4.59+6 | 8.93+5 | 8.47+7 | 2.79+7 | 1.02+7 | 2.28+7 | 1.25+7 | 6.54+6 |
| PILGRIM 1 | B | 192 | 4.37+7 | 2.51+7 | 1.50+7 | 3.97+5 | 5.36+7 | 3.77+7 | 2.80+7 | 1.02+7 | 1.30+7 | 1.34+7 |
| A POINT BEACH 1 | P | 96 | 4.66+7 | 2.47+7 | 1.36+7 | 3.64+5 | 5.96+7 | 3.88+7 | 2.66+7 | 1.34+7 | 1.45+7 | 1.33+7 |
| A POINT BEACH 2 | P | (a) | | | | | | | | | | |
| A PRAIRIE ISL 1 | P | 120 | 5.64+7 | 3.23+7 | 1.94+7 | 4.31+5 | 7.25+7 | 5.10+7 | 3.79+7 | 1.65+7 | 1.91+7 | 1.89+7 |
| A PRAIRIE ISL 2 | P | (a) | | | | | | | | | | |
| B QUAD CITIES 1 | B | 480 | 2.98+7 | 1.02+7 | 3.65+6 | 9.21+5 | 3.68+7 | 1.45+7 | 5.90+6 | 7.87+6 | 5.20+6 | 3.17+6 |
| B QUAD CITIES 2 | B | (a) | | | | | | | | | | |
| RANCHO SECO 1 | P | 138 | 3.09+7 | 1.10+7 | 4.11+6 | 6.19+5 | 4.70+7 | 2.81+7 | 1.76+7 | 1.67+7 | 1.77+7 | 1.41+7 |
| ROBINSON 2 | P | 96 | 4.62+7 | 3.02+7 | 2.08+7 | 4.00+5 | 5.86+7 | 4.15+7 | 3.10+7 | 1.28+7 | 1.17+7 | 1.07+7 |
| RVR BEND 1 | B | 384 | 6.25+7 | 1.76+7 | 5.46+6 | 7.81+5 | 8.19+7 | 2.98+7 | 1.18+7 | 2.02+7 | 1.27+7 | 7.15+6 |
| SALEM 1 | P | 160 | 6.41+7 | 2.93+7 | 1.44+7 | 7.11+5 | 9.49+7 | 5.98+7 | 4.16+7 | 3.15+7 | 3.13+7 | 2.80+7 |
| SALEM 2 | P | 168 | 7.07+7 | 2.66+7 | 1.08+7 | 7.45+5 | 1.06+8 | 5.72+7 | 3.45+7 | 3.58+7 | 3.14+7 | 2.44+7 |

TABLE A4. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - VAULT STORAGE OPTION(1983 DOLLARS) (cont'd)

| PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| E SAN ONOFRE 1 | P | 270 | 8.33+7 | 4.61+7 | 2.62+7 | 9.58+5 | 1.20+8 | 8.49+7 | 6.17+7 | 3.73+7 | 3.98+7 | 3.65+7 |
| E SAN ONOFRE 2 | P | (a) | | | | | | | | | | |
| E SAN ONOFRE 3 | P | (a) | | | | | | | | | | |
| SEABROOK 1 | P | 128 | 7.81+7 | 2.04+7 | 5.94+6 | 5.74+5 | 1.09+8 | 3.86+7 | 1.59+7 | 3.00+7 | 1.86+7 | 1.06+7 |
| A SEQUOYAH 1 | P | 240 | 1.57+8 | 7.46+7 | 3.94+7 | 1.06+6 | 2.10+8 | 1.20+8 | 7.82+7 | 5.36+7 | 4.69+7 | 3.98+7 |
| A SEQUOYAH 2 | P | (a) | | | | | | | | | | |
| SHOREHAM | B | 368 | 6.73+7 | 1.95+7 | 6.25+6 | 7.36+5 | 8.66+7 | 3.20+7 | 1.33+7 | 2.02+7 | 1.32+7 | 7.79+6 |
| SOUTH TEXAS 1 | P | 104 | 3.09+7 | 4.35+6 | 6.72+5 | 5.51+5 | 4.41+7 | 8.10+6 | 1.63+6 | 1.38+7 | 4.30+6 | 1.50+6 |
| SOUTH TEXAS 2 | P | 104 | 3.09+7 | 4.15+6 | 6.11+5 | 5.46+5 | 4.38+7 | 7.67+6 | 1.47+6 | 1.35+7 | 4.06+6 | 1.40+6 |
| ST LUCIE 1 | P | 152 | 6.54+7 | 4.62+7 | 3.49+7 | 5.52+5 | 8.11+7 | 5.60+7 | 4.14+7 | 1.63+7 | 1.04+7 | 7.06+6 |
| ST LUCIE 2 | P | 144 | 6.27+7 | 2.30+7 | 9.29+6 | 5.25+5 | 8.75+7 | 4.61+7 | 2.75+7 | 2.53+7 | 2.37+7 | 1.88+7 |
| SUMMER 1 | P | 136 | 5.16+7 | 1.42+7 | 4.21+6 | 6.05+5 | 7.66+7 | 3.02+7 | 1.33+7 | 2.56+7 | 1.66+7 | 9.65+6 |
| A SURRY 1 | P | 159 | 2.88+7 | 7.00+6 | 1.82+6 | 7.03+5 | 3.82+7 | 1.28+7 | 4.54+6 | 1.01+7 | 6.52+6 | 3.42+6 |
| A SURRY 2 | P | (a) | | | | | | | | | | |
| B SUSQUEHANNA 1 | B | 696 | 1.56+8 | 6.02+7 | 2.55+7 | 1.31+6 | 1.96+8 | 9.22+7 | 4.86+7 | 4.05+7 | 3.33+7 | 2.44+7 |
| B SUSQUEHANNA 2 | B | (a) | | | | | | | | | | |
| THREE MILE ISL 1 | P | 148 | 2.98+7 | 9.69+6 | 3.32+6 | 6.54+5 | 3.84+7 | 1.86+7 | 9.41+6 | 9.19+6 | 9.59+6 | 6.75+6 |
| TROJAN | P | 96 | 3.24+7 | 1.14+7 | 4.23+6 | 4.37+5 | 4.57+7 | 2.08+7 | 9.99+6 | 1.38+7 | 9.84+6 | 6.26+6 |
| E TURKEY PT 3 | P | 144 | 3.14+7 | 1.23+7 | 5.03+6 | 6.39+5 | 5.07+7 | 2.69+7 | 1.49+7 | 1.99+7 | 1.53+7 | 1.05+7 |
| E TURKEY PT 4 | P | (a) | | | | | | | | | | |
| B VOGTLE 1 | P | 252 | 1.38+8 | 4.01+7 | 1.29+7 | 1.11+6 | 1.89+8 | 6.97+7 | 2.90+7 | 5.19+7 | 3.07+7 | 1.73+7 |
| B VOGTLE 2 | P | (a) | | | | | | | | | | |
| VT YANKEE 1 | B | 264 | 3.55+7 | 1.54+7 | 7.07+6 | 5.53+5 | 4.68+7 | 2.71+7 | 1.62+7 | 1.38+7 | 1.23+7 | 9.64+6 |
| WASH NUCLEAR 2 | B | 312 | 9.82+7 | 4.08+7 | 1.87+7 | 6.39+5 | 1.17+8 | 5.69+7 | 3.12+7 | 1.95+7 | 1.70+7 | 1.32+7 |
| WATERFORD 3 | P | 176 | 6.36+7 | 1.88+7 | 6.11+6 | 6.96+5 | 9.48+7 | 4.04+7 | 1.94+7 | 3.19+7 | 2.23+7 | 1.40+7 |
| A WATTS BAR 1 | P | 240 | 1.53+8 | 5.54+7 | 2.23+7 | 1.06+6 | 2.08+8 | 9.92+7 | 5.41+7 | 5.62+7 | 4.49+7 | 3.29+7 |
| A WATTS BAR 2 | P | (a) | | | | | | | | | | |
| WOLF CREEK 1 | P | 152 | 5.63+7 | 1.53+7 | 4.53+6 | 6.77+5 | 8.48+7 | 3.31+7 | 1.45+7 | 2.92+7 | 1.85+7 | 1.06+7 |
| YANKEE-ROWE 1 | P | 76 | 2.98+7 | 1.36+7 | 6.47+6 | 1.86+5 | 3.45+7 | 2.36+7 | 1.65+7 | 4.84+6 | 1.01+7 | 1.02+7 |
| A ZION 1 | P | 216 | 7.66+7 | 3.68+7 | 2.03+7 | 9.54+5 | 1.09+8 | 7.49+7 | 5.42+7 | 4.62+7 | 3.91+7 | 3.46+7 |
| A ZION 2 | P | (a) | | | | | | | | | | |
| TOTAL | | | 6.25+9 | 2.62+9 | 1.36+9 | 6.50+7 | 8.43+9 | 4.35+9 | 2.62+9 | 2.24+9 | 1.80+9 | 1.36+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A4a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - VAULT OPTION
(1983 DOLLARS)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | 2008 | 377 | 1998 | 48 | 2.88+7 | 1.53+7 | 8.34+6 | 6.20+6 | 2.43+6 | 1.02+6 | 3.50+7 | 1.77+7 | 9.36+6 |
| | ARK NUCLEAR 2 | 2012 | 585 | 1999 | 48 | 3.19+7 | 1.46+7 | 6.93+6 | 7.50+6 | 2.48+6 | 8.92+5 | 3.94+7 | 1.71+7 | 7.82+6 |
| | BEAVER VALLEY 1 | 2016 | 853 | 1998 | 52 | 4.28+7 | 2.27+7 | 1.24+7 | 1.61+7 | 5.31+6 | 1.98+6 | 5.89+7 | 2.80+7 | 1.44+7 |
| | BEAVER VALLEY 2 | 2026 | 858 | 2009 | 52 | 4.26+7 | 1.20+7 | 3.58+6 | 1.36+7 | 2.54+6 | 5.38+5 | 5.62+7 | 1.45+7 | 4.12+6 |
| | BELLEFONTE 1 | 2028 | 1900 | 2009 | 66 | 7.67+7 | 2.16+7 | 6.43+6 | 2.74+7 | 4.90+6 | 1.01+6 | 1.04+8 | 2.65+7 | 7.44+6 |
| | BELLEFONTE 2 | 2030 | 1900 | 2011 | 66 | 7.67+7 | 1.96+7 | 5.32+6 | 2.74+7 | 4.45+6 | 8.87+5 | 1.04+8 | 2.41+7 | 6.16+6 |
| | BIG ROCK 1 | 2001 | 95 | 1995 | 46 | 2.88+7 | 1.60+7 | 9.18+6 | 3.10+6 | 1.46+6 | 7.17+5 | 3.19+7 | 1.75+7 | 9.90+6 |
| A | BRAIDWOOD 1 | 2026 | 3627 | 1998 | 87 | 1.28+8 | 6.80+7 | 3.72+7 | 7.32+7 | 1.99+7 | 6.66+6 | 2.01+8 | 8.79+7 | 4.39+7 |
| A | BRAIDWOOD 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| B | BROWNS FERRY 1 | 2014 | 3228 | 2002 | 58 | 5.57+7 | 2.20+7 | 9.10+6 | 1.28+7 | 3.73+6 | 1.18+6 | 6.85+7 | 2.57+7 | 1.03+7 |
| B | BROWNS FERRY 2 | 2014 | (a) | | | | | | | | | 0.00+0 | | |
| | BROWNS FERRY 3 | 2017 | 2441 | 2001 | 54 | 4.60+7 | 1.91+7 | 8.28+6 | 1.39+7 | 3.92+6 | 1.23+6 | 5.99+7 | 2.30+7 | 9.51+6 |
| | BRUNSWICK 1 | 2010 | 2401 | 1990 | 54 | 4.57+7 | 3.25+7 | 2.34+7 | 1.73+7 | 7.65+6 | 3.77+6 | 6.30+7 | 4.02+7 | 2.72+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| | BRUNSWICK 2 | 2010 | 2281 | 1991 | 53 | 4.40+7 | 2.98+7 | 2.05+7 | 1.57+7 | 6.78+6 | 3.23+6 | 5.97+7 | 3.66+7 | 2.37+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| A | BYRON 1 | 2024 | 3627 | 1994 | 87 | 1.28+8 | 7.50+7 | 4.50+7 | 7.32+7 | 2.19+7 | 8.06+6 | 2.01+8 | 9.69+7 | 5.31+7 |
| A | BYRON 2 | 2026 | (a) | | | | | | | | | 0.00+0 | | |
| | CALLAWAY 1 | 2024 | 1129 | 2005 | 55 | 4.93+7 | 1.68+7 | 6.05+6 | 1.78+7 | 3.87+6 | 9.62+5 | 6.71+7 | 2.07+7 | 7.01+6 |
| B | CALVERT CLF 1 | 2014 | 2213 | 1992 | 66 | 7.62+7 | 4.91+7 | 3.23+7 | 3.16+7 | 1.22+7 | 5.34+6 | 1.08+8 | 6.13+7 | 3.76+7 |
| B | CALVERT CLF 2 | 2016 | (a) | | | | | | | | | 0.00+0 | | |
| | CATAWBA 1 | 2025 | 0 | 2025 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CATAWBA 2 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CLINTON 1 | 2027 | 2672 | 2006 | 56 | 4.75+7 | 1.55+7 | 5.30+6 | 1.89+7 | 3.76+6 | 8.70+5 | 6.64+7 | 1.93+7 | 6.17+6 |
| B | COMANCHE PK 1 | 2030 | 2087 | 2015 | 69 | 8.40+7 | 1.76+7 | 3.98+6 | 2.35+7 | 3.42+6 | 5.66+5 | 1.08+8 | 2.10+7 | 4.55+6 |
| B | COMANCHE PK 2 | 2030 | (a) | | | | | | | | | 0.00+0 | | |
| A | COOK 1 | 2009 | 1241 | 1998 | 57 | 5.39+7 | 2.59+7 | 1.29+7 | 1.13+7 | 4.11+6 | 1.60+6 | 6.52+7 | 3.00+7 | 1.45+7 |
| A | COOK 2 | 2009 | (a) | | | | | | | | | 0.00+0 | | |
| | COOPER STN | 2008 | 1238 | 1997 | 47 | 3.12+7 | 1.58+7 | 8.22+6 | 6.20+6 | 2.37+6 | 9.65+5 | 3.74+7 | 1.82+7 | 9.19+6 |
| | CRYSTAL RVR 3 | 2016 | 432 | 2005 | 47 | 2.88+7 | 9.85+6 | 3.54+6 | 5.68+6 | 1.47+6 | 4.12+5 | 3.45+7 | 1.13+7 | 3.95+6 |
| | DAVIS-BESSE 1 | 2017 | 2490 | 1995 | 76 | 1.01+8 | 5.61+7 | 3.21+7 | 4.10+7 | 1.37+7 | 5.21+6 | 1.42+8 | 6.98+7 | 3.73+7 |
| | DIABLO CANYON 1 | 2025 | 517 | 2011 | 48 | 3.20+7 | 8.17+6 | 2.22+6 | 8.13+6 | 1.47+6 | 2.97+5 | 4.01+7 | 9.64+6 | 2.52+6 |
| | DIABLO CANYON 2 | 2025 | 517 | 2011 | 48 | 3.20+7 | 8.17+6 | 2.22+6 | 8.13+6 | 1.47+6 | 2.97+5 | 4.01+7 | 9.64+6 | 2.52+6 |
| | DRESDEN 1 | 1984 | 0 | | | | | | | | | 0.00+0 | | |
| | DRESDEN 2 | 2008 | 1015 | 1998 | 46 | 2.88+7 | 1.39+7 | 6.89+6 | 5.16+6 | 1.92+6 | 7.60+5 | 3.40+7 | 1.58+7 | 7.65+6 |
| | DRESDEN 3 | 2006 | 693 | 2000 | 46 | 2.88+7 | 1.26+7 | 5.70+6 | 4.13+6 | 1.46+6 | 5.45+5 | 3.29+7 | 1.41+7 | 6.25+6 |
| | DUANE ARNOLD | 2010 | 998 | 1999 | 46 | 2.88+7 | 1.32+7 | 6.27+6 | 5.68+6 | 1.97+6 | 7.30+5 | 3.45+7 | 1.52+7 | 7.00+6 |
| | ENRICO FERMI 2 | 2025 | 5355 | 1997 | 70 | 8.63+7 | 4.36+7 | 2.27+7 | 4.50+7 | 1.21+7 | 3.94+6 | 1.31+8 | 5.57+7 | 2.66+7 |
| | FARLEY 1 | 2012 | 298 | 2006 | 46 | 2.88+7 | 9.38+6 | 3.22+6 | 3.10+6 | 8.53+5 | 2.51+5 | 3.19+7 | 1.02+7 | 3.47+6 |
| | FARLEY 2 | 2012 | 140 | 2008 | 46 | 2.88+7 | 8.50+6 | 2.66+6 | 2.07+6 | 5.41+5 | 1.51+5 | 3.09+7 | 9.04+6 | 2.81+6 |
| | FITZPATRICK | 2015 | 2246 | 1997 | 53 | 4.39+7 | 2.22+7 | 1.16+7 | 1.49+7 | 4.88+6 | 1.78+6 | 5.88+7 | 2.71+7 | 1.34+7 |
| | FORT CALHOUN | 2008 | 413 | 1994 | 46 | 2.88+7 | 1.68+7 | 1.01+7 | 5.68+6 | 2.51+6 | 1.18+6 | 3.45+7 | 1.93+7 | 1.13+7 |
| | FT ST VRAIN | 2007 | | | | | | | | | | 0.00+0 | | |
| | GINNA | 2006 | 219 | 2000 | 46 | 2.88+7 | 1.26+7 | 5.70+6 | 3.10+6 | 1.14+6 | 4.45+5 | 3.19+7 | 1.37+7 | 6.15+6 |
| | GRAND GULF 1 | 2022 | 4392 | 1998 | 64 | 7.13+7 | 3.43+7 | 1.71+7 | 3.24+7 | 8.98+6 | 2.90+6 | 1.04+8 | 4.33+7 | 2.00+7 |
| | HADDAM NECK | 2007 | 319 | 1997 | 46 | 2.88+7 | 1.45+7 | 7.58+6 | 5.16+6 | 2.01+6 | 8.36+5 | 3.40+7 | 1.65+7 | 8.42+6 |
| | HARRIS 1 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | | |
| | | | - | - | | | | | | | | 0.00+0 | | |

TABLE A4a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - VAULT OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| B | HATCH 1 | 2009 | 2874 | 2000 | 56 | 5.13+7 | 2.24+7 | 1.02+7 | 8.80+6 | 3.03+6 | 1.11+6 | 6.01+7 | 2.54+7 | 1.13+7 |
| B | HATCH 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| | HOPE CREEK | 2026 | 2820 | 2007 | 56 | 5.08+7 | 1.58+7 | 5.16+6 | 1.84+7 | 3.62+6 | 8.22+5 | 6.92+7 | 1.94+7 | 5.98+6 |
| | HUMBOLDT BAY | 1976 | 0 | - | | | | | | | | 0.00+0 | | |
| | INDIAN PT 1 | 1980 | 0 | - | | | | | | | | 0.00+0 | | |
| | INDIAN PT 2 | 2008 | 493 | 1994 | 47 | 3.09+7 | 1.81+7 | 1.08+7 | 6.70+6 | 2.89+6 | 1.33+6 | 3.76+7 | 2.10+7 | 1.21+7 |
| | INDIAN PT 3 | 2015 | 536 | 2004 | 48 | 3.27+7 | 1.17+7 | 4.42+6 | 6.54+6 | 1.77+6 | 5.22+5 | 3.92+7 | 1.35+7 | 4.94+6 |
| | KEWAUNEE | 2014 | 579 | 1999 | 47 | 3.05+7 | 1.40+7 | 6.65+6 | 8.26+6 | 2.62+6 | 9.12+5 | 3.88+7 | 1.66+7 | 7.56+6 |
| | LACROSSE | 2002 | 205 | 1992 | 47 | 2.88+7 | 1.86+7 | 1.22+7 | 5.16+6 | 2.57+6 | 1.35+6 | 3.40+7 | 2.12+7 | 1.36+7 |
| B | LASALLE CTY 1 | 2022 | 9824 | 1998 | 95 | 1.49+8 | 1.01+8 | 7.01+7 | 9.24+7 | 3.24+7 | 1.41+7 | 2.41+8 | 1.33+8 | 8.42+7 |
| B | LASALLE CTY 2 | 2023 | (a) | | | | | | | | | 0.00+0 | | |
| | LIMERICK 1 | 2024 | 4098 | 1995 | 63 | 6.81+7 | 3.79+7 | 2.17+7 | 3.75+7 | 1.09+7 | 3.86+6 | 1.06+8 | 4.88+7 | 2.56+7 |
| | LIMERICK 2 | 2029 | 4236 | 1998 | 64 | 6.97+7 | 3.35+7 | 1.67+7 | 4.10+7 | 9.91+6 | 3.00+6 | 1.11+8 | 4.34+7 | 1.97+7 |
| | MAINE YANKEE | 2008 | 632 | 1998 | 47 | 3.16+7 | 1.68+7 | 9.15+6 | 6.86+6 | 2.69+6 | 1.13+6 | 3.85+7 | 1.95+7 | 1.03+7 |
| | MCGUIRE 1 | 2021 | 965 | 2005 | 54 | 4.59+7 | 1.57+7 | 5.64+6 | 1.39+7 | 3.21+6 | 8.34+5 | 5.98+7 | 1.89+7 | 6.47+6 |
| | MCGUIRE 2 | 2023 | 989 | 2006 | 54 | 4.66+7 | 1.52+7 | 5.20+6 | 1.50+7 | 3.24+6 | 7.90+5 | 6.16+7 | 1.84+7 | 5.99+6 |
| | MILLSTONE 1 | 2010 | 2480 | 1987 | 54 | 4.56+7 | 3.66+7 | 2.96+7 | 1.98+7 | 9.56+6 | 5.23+6 | 6.54+7 | 4.62+7 | 3.48+7 |
| | MILLSTONE 2 | 2015 | 823 | 1997 | 51 | 3.88+7 | 1.96+7 | 1.02+7 | 1.30+7 | 4.25+6 | 1.55+6 | 5.18+7 | 2.39+7 | 1.18+7 |
| | MILLSTONE 3 | 2025 | 541 | 2010 | 48 | 3.29+7 | 6.58+6 | 1.42+6 | 5.38+6 | 8.49+5 | 1.48+5 | 3.83+7 | 7.43+6 | 1.57+6 |
| | MONTICELLO | 2007 | 355 | 2004 | 46 | 2.88+7 | 1.03+7 | 3.89+6 | 1.55+6 | 5.05+5 | 1.74+5 | 3.04+7 | 1.08+7 | 4.06+6 |
| | NINE MILE PT 1 | 2005 | 884 | 1998 | 46 | 2.88+7 | 1.53+7 | 8.34+6 | 4.65+6 | 1.95+6 | 8.61+5 | 3.35+7 | 1.73+7 | 9.20+6 |
| | NINE MILE PT 2 | 2026 | 1971 | 2011 | 51 | 4.06+7 | 1.04+7 | 2.81+6 | 1.14+7 | 2.60+6 | 3.99+5 | 5.20+7 | 1.24+7 | 3.21+6 |
| A | NORTH ANNA 1 | 2018 | 1866 | 1999 | 67 | 7.89+7 | 3.61+7 | 1.72+7 | 2.81+7 | 8.20+6 | 2.70+6 | 1.07+8 | 4.43+7 | 1.99+7 |
| A | NORTH ANNA 2 | 2020 | (a) | | | | | | | | | 0.00+0 | | |
| A | OCONEE 1 | 2013 | 2102 | 1989 | 70 | 8.57+7 | 6.39+7 | 4.84+7 | 3.84+7 | 1.65+7 | 8.11+6 | 1.24+8 | 8.04+7 | 5.65+7 |
| A | OCONEE 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| | OCONEE 3 | 2014 | 1021 | 1991 | 55 | 4.77+7 | 3.23+7 | 2.22+7 | 2.08+7 | 8.26+6 | 3.75+6 | 6.85+7 | 4.06+7 | 2.60+7 |
| | OYSTER CRK 1 | 2004 | 912 | 1994 | 46 | 2.88+7 | 1.68+7 | 1.01+7 | 5.16+6 | 2.33+6 | 1.11+6 | 3.40+7 | 1.91+7 | 1.12+7 |
| | PALISADES | 2011 | 835 | 1988 | 50 | 3.84+7 | 3.01+7 | 2.38+7 | 1.64+7 | 7.52+6 | 3.92+6 | 5.48+7 | 3.76+7 | 2.77+7 |
| | PALO VERDE 1 | 2024 | 1117 | 2005 | 54 | 4.68+7 | 1.60+7 | 5.75+6 | 1.68+7 | 3.66+6 | 9.10+5 | 6.36+7 | 1.97+7 | 6.66+6 |
| | PALO VERDE 2 | 2025 | 1121 | 2006 | 54 | 4.69+7 | 1.53+7 | 5.23+6 | 1.69+7 | 3.49+6 | 8.30+5 | 6.38+7 | 1.88+7 | 6.06+6 |
| | PALO VERDE 3 | 2026 | 1121 | 2007 | 54 | 4.69+7 | 1.45+7 | 4.76+6 | 1.69+7 | 3.33+6 | 7.54+5 | 6.38+7 | 1.78+7 | 5.51+6 |
| | PEACHBOTTOM 2 | 2008 | 1812 | 1997 | 50 | 3.87+7 | 1.95+7 | 1.02+7 | 7.89+6 | 3.01+6 | 1.23+6 | 4.66+7 | 2.25+7 | 1.14+7 |
| | PEACHBOTTOM 3 | 2008 | 1589 | 1997 | 49 | 3.59+7 | 1.82+7 | 9.46+6 | 7.26+6 | 2.77+6 | 1.13+6 | 4.32+7 | 2.10+7 | 1.06+7 |
| | PERRY 1 | 2026 | 2548 | 2009 | 56 | 4.75+7 | 1.34+7 | 3.98+6 | 1.53+7 | 2.86+6 | 6.06+5 | 6.28+7 | 1.63+7 | 4.59+6 |
| | PILGRIM 1 | 2008 | 1512 | 1993 | 49 | 3.43+7 | 2.11+7 | 1.32+7 | 9.40+6 | 3.99+6 | 1.84+6 | 4.37+7 | 2.51+7 | 1.50+7 |
| A | POINT BEACH 1 | 2007 | 849 | 1995 | 50 | 3.81+7 | 2.12+7 | 1.21+7 | 8.46+6 | 3.48+6 | 1.53+6 | 4.66+7 | 2.47+7 | 1.36+7 |
| A | POINT BEACH 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| A | PRAIRIE ISL 1 | 2008 | 1142 | 1993 | 53 | 4.40+7 | 2.70+7 | 1.70+7 | 1.24+7 | 5.28+6 | 2.43+6 | 5.64+7 | 3.23+7 | 1.94+7 |
| A | PRAIRIE ISL 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| B | QUAD CITIES 1 | 2007 | 503 | 2005 | 46 | 2.88+7 | 9.84+6 | 3.54+6 | 1.03+6 | 3.28+5 | 1.10+5 | 2.98+7 | 1.02+7 | 3.65+6 |
| B | QUAD CITIES 2 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| | RANCHO SECO 1 | 2008 | 226 | 2004 | 46 | 2.88+7 | 1.03+7 | 3.89+6 | 2.07+6 | 6.57+5 | 2.21+5 | 3.09+7 | 1.10+7 | 4.11+6 |
| | ROBINSON 2 | 2007 | 668 | 1990 | 49 | 3.52+7 | 2.50+7 | 1.81+7 | 1.10+7 | 5.17+6 | 2.66+6 | 4.62+7 | 3.02+7 | 2.08+7 |
| | RVR BEND 1 | 2025 | 2452 | 2007 | 54 | 4.66+7 | 1.44+7 | 4.73+6 | 1.59+7 | 3.20+6 | 7.34+5 | 6.25+7 | 1.76+7 | 5.46+6 |
| | SALEM 1 | 2016 | 1007 | 1997 | 54 | 4.71+7 | 2.36+7 | 1.24+7 | 1.70+7 | 5.45+6 | 1.97+6 | 6.41+7 | 2.93+7 | 1.44+7 |
| | SALEM 2 | 2020 | 1163 | 2001 | 57 | 5.19+7 | 2.16+7 | 9.33+6 | 1.88+7 | 4.96+6 | 1.49+6 | 7.07+7 | 2.66+7 | 1.08+7 |

TABLE A4a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - VAULT OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 2382 | 1995 | 67 | 7.75+7 | 4.32+7 | 2.47+7 | 5.83+6 | 2.88+6 | 1.47+6 | 8.33+7 | 4.61+7 | 2.62+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| E | SAN ONOFRE 3 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| | SEABROOK 1 | 2031 | 1261 | 2008 | 58 | 5.50+7 | 1.62+7 | 5.08+6 | 2.41+7 | 4.18+6 | 8.61+5 | 7.91+7 | 2.04+7 | 5.94+6 |
| A | SEQUOYAH 1 | 2021 | 2680 | 1995 | 78 | 1.06+8 | 5.89+7 | 3.37+7 | 5.10+7 | 1.57+7 | 5.72+6 | 1.57+8 | 7.46+7 | 3.94+7 |
| A | SEQUOYAH 2 | 2022 | (a) | | | | | | | | | 0.00+0 | | |
| | SHOREHAM | 2027 | 2635 | 2006 | 55 | 4.81+7 | 1.57+7 | 5.37+6 | 1.92+7 | 3.81+6 | 8.82+5 | 6.73+7 | 1.95+7 | 6.25+6 |
| | SOUTH TEXAS 1 | 2027 | 258 | 2023 | 46 | 2.88+7 | 4.09+6 | 6.36+5 | 2.07+6 | 2.60+5 | 3.62+4 | 3.09+7 | 4.35+6 | 6.72+5 |
| | SOUTH TEXAS 2 | 2028 | 258 | 2024 | 46 | 2.88+7 | 3.90+6 | 5.78+5 | 2.07+6 | 2.48+5 | 3.29+4 | 3.09+7 | 4.15+6 | 6.11+5 |
| | ST LUCIE 1 | 2010 | 1182 | 1987 | 54 | 4.56+7 | 3.66+7 | 2.97+7 | 1.98+7 | 9.57+6 | 5.23+6 | 6.54+7 | 4.62+7 | 3.49+7 |
| | ST LUCIE 2 | 2023 | 1126 | 2001 | 53 | 4.43+7 | 1.84+7 | 7.97+6 | 1.84+7 | 4.57+6 | 1.32+6 | 6.27+7 | 2.30+7 | 9.29+6 |
| | SUMMER 1 | 2024 | 761 | 2008 | 51 | 3.98+7 | 1.18+7 | 3.67+6 | 1.18+7 | 2.37+6 | 5.35+5 | 5.16+7 | 1.42+7 | 4.21+6 |
| A | SURRY 1 | 2012 | 97 | 2012 | 46 | 2.88+7 | 7.00+6 | 1.82+6 | 0.00+0 | 0.00+0 | 0.00+0 | 2.88+7 | 7.00+6 | 1.82+6 |
| A | SURRY 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| B | SUSQUEHANNA 1 | 2022 | 7288 | 2000 | 80 | 1.11+8 | 4.84+7 | 2.19+7 | 4.54+7 | 1.18+7 | 3.58+6 | 1.56+8 | 6.02+7 | 2.55+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | | | | | | | | | 0.00+0 | | |
| | THREE MILE ISL 1 | 2008 | 75 | 2006 | 46 | 2.88+7 | 9.38+6 | 3.22+6 | 1.03+6 | 3.13+5 | 1.00+5 | 2.98+7 | 9.69+6 | 3.32+6 |
| | TROJAN | 2011 | 373 | 2004 | 46 | 2.88+7 | 1.03+7 | 3.89+6 | 3.61+6 | 1.07+6 | 3.40+5 | 3.24+7 | 1.14+7 | 4.23+6 |
| E | TURKEY PT 3 | 2007 | 384 | 2002 | 46 | 2.88+7 | 1.14+7 | 4.71+6 | 2.58+6 | 8.85+5 | 3.20+5 | 3.14+7 | 1.23+7 | 5.03+6 |
| E | TURKEY PT 4 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| B | VOGTLE 1 | 2027 | 2495 | 2006 | 75 | 9.94+7 | 3.24+7 | 1.11+7 | 3.87+7 | 7.69+6 | 1.78+6 | 1.38+8 | 4.01+7 | 1.29+7 |
| B | VOGTLE 2 | 2028 | (a) | | | | | | | | | 0.00+0 | | |
| | VT YANKEE 1 | 2012 | 1068 | 1999 | 46 | 2.88+7 | 1.32+7 | 6.27+6 | 6.71+6 | 2.22+6 | 7.98+5 | 3.55+7 | 1.54+7 | 7.07+6 |
| | WASH NUCLEAR 2 | 2023 | 4018 | 1998 | 63 | 6.66+7 | 3.20+7 | 1.59+7 | 3.16+7 | 8.57+6 | 2.75+6 | 9.82+7 | 4.06+7 | 1.87+7 |
| | WATERFORD 3 | 2024 | 1143 | 2006 | 55 | 4.74+7 | 1.54+7 | 5.29+6 | 1.62+7 | 3.42+6 | 8.23+5 | 6.36+7 | 1.88+7 | 6.11+6 |
| A | WATTS BAR 1 | 2025 | 2691 | 2001 | 78 | 1.06+8 | 4.41+7 | 1.91+7 | 4.72+7 | 1.13+7 | 3.18+6 | 1.53+8 | 5.54+7 | 2.23+7 |
| A | WATTS BAR 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| | WOLF CREEK 1 | 2025 | 857 | 2008 | 52 | 4.27+7 | 1.26+7 | 3.94+6 | 1.36+7 | 2.67+6 | 5.94+5 | 5.63+7 | 1.53+7 | 4.53+6 |
| | YANKEE-ROWE 1 | 2001 | 36 | 1999 | 46 | 2.88+7 | 1.32+7 | 6.27+6 | 1.03+6 | 4.40+5 | 1.95+5 | 2.98+7 | 1.36+7 | 6.47+6 |
| A | ZION 1 | 2008 | 1295 | 1995 | 58 | 5.61+7 | 3.12+7 | 1.79+7 | 1.39+7 | 5.60+6 | 2.42+6 | 7.00+7 | 3.68+7 | 2.03+7 |
| A | ZION 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| | TOTAL | | | | | 4.67+9 | 2.15+9 | 1.13+9 | 1.58+9 | 4.66+8 | 1.70+8 | 6.25+9 | 2.62+9 | 1.30+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A4b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - VAULT OPTION
(1983 DOLLARS)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | 2008 | 737 | (b) | 51 | 3.93+7 | 3.08+7 | 2.44+7 | 1.46+7 | 7.13+6 | 3.86+6 | 5.39+7 | 3.79+7 | 2.83+7 |
| | ARK NUCLEAR 2 | 2012 | 973 | 1989 | 53 | 4.35+7 | 3.24+7 | 2.45+7 | 1.88+7 | 8.23+6 | 4.10+6 | 6.23+7 | 4.06+7 | 2.86+7 |
| | BEAVER VALLEY 1 | 2016 | 1267 | (b) | 58 | 5.55+7 | 4.35+7 | 3.45+7 | 2.97+7 | 1.24+7 | 6.13+6 | 8.52+7 | 5.59+7 | 4.06+7 |
| | BEAVER VALLEY 2 | 2026 | 1296 | 2000 | 58 | 5.59+7 | 2.44+7 | 1.11+7 | 2.77+7 | 6.69+6 | 1.93+6 | 8.36+7 | 3.11+7 | 1.30+7 |
| | BELLEFONTE 1 | 2028 | 2404 | 2000 | 73 | 9.49+7 | 4.14+7 | 1.88+7 | 4.93+7 | 1.14+7 | 3.24+6 | 1.44+8 | 5.28+7 | 2.20+7 |
| | BELLEFONTE 2 | 2030 | 2404 | 2002 | 73 | 9.49+7 | 3.75+7 | 1.55+7 | 4.93+7 | 1.04+7 | 2.68+6 | 1.44+8 | 4.79+7 | 1.82+7 |
| | BIG ROCK 1 | 2001 | 175 | 1992 | 46 | 2.88+7 | 1.88+7 | 1.22+7 | 4.65+6 | 2.37+6 | 1.26+6 | 3.35+7 | 2.10+7 | 1.35+7 |
| A | BRAIDWOOD 1 | 2026 | 4383 | 1996 | 98 | 1.54+8 | 1.04+8 | 7.12+7 | 1.07+8 | 3.49+7 | 1.47+7 | 2.61+8 | 1.39+8 | 8.59+7 |
| A | BRAIDWOOD 2 | 2027 | (a) | 1998 | | | | | | | | | | |
| B | BROWNS FERRY 1 | 2014 | 4594 | 1998 | 66 | 7.50+7 | 3.61+7 | 1.80+7 | 2.26+7 | 7.37+6 | 2.65+6 | 9.76+7 | 4.35+7 | 2.07+7 |
| B | BROWNS FERRY 2 | 2014 | (a) | 1998 | | | | | | | | | | |
| | BROWNS FERRY 3 | 2017 | 3353 | 1995 | 59 | 5.73+7 | 3.19+7 | 1.83+7 | 2.41+7 | 8.02+6 | 3.06+6 | 8.14+7 | 3.99+7 | 2.14+7 |
| | BRUNSWICK 1 | 2010 | 3153 | (b) | 58 | 5.49+7 | 4.30+7 | 3.41+7 | 2.30+7 | 1.08+7 | 5.70+6 | 7.79+7 | 5.38+7 | 3.98+7 |
| | BRUNSWICK 2 | 2010 | 3033 | (b) | 57 | 5.30+7 | 4.15+7 | 3.29+7 | 2.22+7 | 1.04+7 | 5.50+6 | 7.52+7 | 5.19+7 | 3.84+7 |
| A | BYRON 1 | 2024 | 4413 | (b) | 97 | 1.55+8 | 1.04+8 | 7.14+7 | 1.07+8 | 3.87+7 | 1.79+7 | 2.62+8 | 1.43+8 | 8.93+7 |
| A | BYRON 2 | 2026 | (a) | (b) | | | | | | | | | | |
| | CALLAWAY 1 | 2024 | 1633 | 1996 | 62 | 8.52+7 | 3.46+7 | 1.89+7 | 3.47+7 | 9.80+6 | 3.34+6 | 9.99+7 | 4.44+7 | 2.22+7 |
| B | CALVERT CLF 1 | 2014 | 2789 | (b) | 73 | 9.40+7 | 6.98+7 | 5.25+7 | 4.53+7 | 1.96+7 | 9.92+6 | 1.39+8 | 8.94+7 | 6.24+7 |
| B | CALVERT CLF 2 | 2016 | (a) | (b) | | | | | | | | | | |
| | CATAWBA 1 | 2025 | 226 | 2021 | 46 | 2.88+7 | 4.51+6 | 7.70+5 | 2.07+6 | 2.87+5 | 4.38+4 | 3.09+7 | 4.80+6 | 8.14+5 |
| | CATAWBA 2 | 2026 | 210 | 2023 | 46 | 2.88+7 | 4.09+6 | 6.38+5 | 1.55+6 | 2.00+5 | 2.84+4 | 3.04+7 | 4.20+6 | 6.64+5 |
| | CLINTON 1 | 2027 | 3260 | 2000 | 58 | 5.60+7 | 2.44+7 | 1.11+7 | 2.89+7 | 6.83+6 | 1.95+6 | 8.49+7 | 3.12+7 | 1.31+7 |
| B | COMANCHE PK 1 | 2030 | 2661 | 2010 | 77 | 1.05+8 | 2.82+7 | 8.02+6 | 3.90+7 | 6.50+6 | 1.27+6 | 1.44+8 | 3.47+7 | 9.29+6 |
| B | COMANCHE PK 2 | 2030 | (a) | 2010 | | | | | | | | | | |
| A | COOK 1 | 2009 | 2009 | 1991 | 68 | 8.10+7 | 2.48+7 | 3.78+7 | 2.73+7 | 1.20+7 | 5.81+6 | 1.08+8 | 6.68+7 | 4.36+7 |
| A | COOK 2 | 2009 | (a) | 1991 | | | | | | | | | | |
| | COOPER STN | 2008 | 1702 | 1993 | 50 | 3.75+7 | 2.30+7 | 1.45+7 | 1.04+7 | 4.41+6 | 2.03+6 | 4.79+7 | 2.74+7 | 1.65+7 |
| | CRYSTAL RVR 3 | 2016 | 648 | 1999 | 50 | 3.66+7 | 1.68+7 | 7.96+6 | 1.14+7 | 3.48+6 | 1.18+6 | 4.80+7 | 2.03+7 | 9.14+6 |
| | DAVIS-BESSE 1 | 2017 | 2850 | 1988 | 81 | 1.13+8 | 8.13+7 | 5.94+7 | 6.11+7 | 2.58+7 | 1.23+7 | 1.74+8 | 1.06+8 | 7.17+7 |
| | DIABLO CANYON 1 | 2025 | 772 | 2006 | 51 | 4.02+7 | 1.31+7 | 4.49+6 | 1.43+7 | 2.95+6 | 7.01+5 | 5.45+7 | 1.60+7 | 5.19+6 |
| | DIABLO CANYON 2 | 2025 | 772 | 2006 | 51 | 4.02+7 | 1.31+7 | 4.49+6 | 1.43+7 | 2.95+6 | 7.01+5 | 5.45+7 | 1.60+7 | 5.19+6 |
| | DRESDEN 1 | 1984 | | | | | | | | | | | | |
| | DRESDEN 2 | 2008 | 1647 | 1992 | 49 | 3.55+7 | 2.29+7 | 1.58+7 | 1.04+7 | 4.54+6 | 2.16+6 | 4.59+7 | 2.74+7 | 1.72+7 |
| | DRESDEN 3 | 2006 | 1325 | 1994 | 47 | 3.13+7 | 1.83+7 | 1.16+7 | 7.91+6 | 3.27+6 | 1.46+6 | 3.92+7 | 2.16+7 | 1.25+7 |
| | DUANE ARNOLD | 2010 | 1516 | 1991 | 49 | 3.48+7 | 2.35+7 | 1.62+7 | 1.21+7 | 5.21+6 | 2.48+6 | 4.69+7 | 2.87+7 | 1.87+7 |
| | ENRICO FERMI 2 | 2025 | 6459 | 1998 | 76 | 1.02+8 | 7.24+7 | 5.23+7 | 6.61+7 | 2.20+7 | 9.34+6 | 1.68+8 | 9.44+7 | 6.16+7 |
| | FARLEY 1 | 2012 | 706 | 1997 | 50 | 3.84+7 | 1.94+7 | 1.01+7 | 1.07+7 | 3.73+6 | 1.43+6 | 4.91+7 | 2.31+7 | 1.15+7 |
| | FARLEY 2 | 2012 | 548 | 1999 | 48 | 3.38+7 | 1.53+7 | 7.25+6 | 7.88+6 | 2.61+6 | 9.37+5 | 4.12+7 | 1.79+7 | 8.19+6 |
| | FITZPATRICK | 2015 | 2966 | 1991 | 57 | 5.25+7 | 3.55+7 | 2.45+7 | 2.40+7 | 9.35+6 | 4.20+6 | 7.65+7 | 4.49+7 | 2.87+7 |
| | FORT CALHOUN | 2008 | 683 | (b) | 48 | 3.23+7 | 2.53+7 | 2.00+7 | 9.95+6 | 5.17+6 | 2.91+6 | 4.23+7 | 3.05+7 | 2.29+7 |
| | FT ST VRAIN | 2007 | | | | | | | | | | | | |
| | GINNA | 2006 | 411 | 1994 | 46 | 2.88+7 | 1.68+7 | 1.01+7 | 6.20+6 | 2.68+6 | 1.23+6 | 3.50+7 | 1.95+7 | 1.13+7 |
| | GRAND GULF 1 | 2022 | 5464 | 1992 | 76 | 8.70+7 | 5.61+7 | 3.69+7 | 4.86+7 | 1.61+7 | 6.48+6 | 1.36+8 | 7.22+7 | 4.34+7 |
| | HADDAM NECK | 2007 | 631 | 1996 | 48 | 3.35+7 | 2.38+7 | 1.72+7 | 1.04+7 | 4.89+6 | 2.51+6 | 4.39+7 | 2.87+7 | 1.97+7 |
| | HARRIS 1 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | | | |

TABLE A4b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - VAULT OPTION (1983 DOLLARS) (cont'd)

| PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| B HATCH 1 | 2009 | 4060 | 1996 | 63 | 8.73+7 | 3.57+7 | 1.95+7 | 1.68+7 | 6.38+6 | 2.63+6 | 8.39+7 | 4.21+7 | 2.21+7 |
| B HATCH 2 | 2012 | (a) | 1996 | | | | | | | | | | |
| HOPE CREEK | 2026 | 3748 | 2001 | 61 | 6.31+7 | 2.62+7 | 1.14+7 | 3.01+7 | 7.84+6 | 1.98+6 | 9.32+7 | 3.32+7 | 1.34+7 |
| HUMBOLDT BAY | 1976 | | | | | | | | | | | | |
| INDIAN PT 1 | 1980 | | | | | | | | | | | | |
| INDIAN PT 2 | 2008 | 901 | (b) | 53 | 4.37+7 | 3.43+7 | 2.71+7 | 1.48+7 | 7.54+6 | 4.19+6 | 5.85+7 | 4.18+7 | 3.13+7 |
| INDIAN PT 3 | 2015 | 992 | 1994 | 54 | 4.67+7 | 2.73+7 | 1.64+7 | 1.86+7 | 6.63+6 | 2.68+6 | 6.53+7 | 3.39+7 | 1.91+7 |
| KEWAUNEE | 2014 | 801 | 1993 | 50 | 3.69+7 | 2.26+7 | 1.42+7 | 1.43+7 | 5.35+6 | 2.26+6 | 5.12+7 | 2.80+7 | 1.65+7 |
| LACROSSE | 2002 | 301 | 1987 | 47 | 2.88+7 | 2.37+7 | 1.97+7 | 7.75+6 | 4.41+6 | 2.68+6 | 3.66+7 | 2.81+7 | 2.24+7 |
| B LASALLE CTY 1 | 2022 | 11144 | (b) | 102 | 1.64+8 | 1.08+8 | 7.28+7 | 1.05+8 | 3.91+7 | 1.84+7 | 2.69+8 | 1.47+8 | 9.12+7 |
| B LASALLE CTY 2 | 2023 | (a) | (b) | | | | | | | | | | |
| LIMERICK 1 | 2024 | 4992 | 1988 | 68 | 8.15+7 | 6.18+7 | 4.72+7 | 5.49+7 | 1.98+7 | 9.17+6 | 1.36+8 | 8.14+7 | 5.64+7 |
| LIMERICK 2 | 2029 | 5116 | 1991 | 69 | 8.28+7 | 5.60+7 | 3.88+7 | 5.88+7 | 1.77+7 | 7.03+6 | 1.42+8 | 7.37+7 | 4.58+7 |
| MAINE YANKEE | 2008 | 1070 | 1987 | 52 | 4.27+7 | 3.44+7 | 2.81+7 | 1.68+7 | 8.45+6 | 4.73+6 | 5.95+7 | 4.29+7 | 3.28+7 |
| MCGUIRE 1 | 2021 | 1397 | 1997 | 60 | 5.95+7 | 3.81+7 | 1.57+7 | 2.73+7 | 7.92+6 | 2.69+6 | 8.68+7 | 3.80+7 | 1.84+7 |
| MCGUIRE 2 | 2023 | 1421 | 1998 | 60 | 6.04+7 | 2.90+7 | 1.44+7 | 2.88+7 | 7.80+6 | 2.50+6 | 8.92+7 | 3.68+7 | 1.69+7 |
| MILLSTONE 1 | 2010 | 2872 | (b) | 58 | 5.01+7 | 3.93+7 | 3.11+7 | 2.10+7 | 9.83+6 | 5.19+6 | 7.11+7 | 4.91+7 | 3.63+7 |
| MILLSTONE 2 | 2015 | 1291 | (b) | 56 | 5.10+7 | 4.00+7 | 3.17+7 | 2.62+7 | 1.11+7 | 5.57+6 | 7.72+7 | 5.11+7 | 3.73+7 |
| MILLSTONE 3 | 2025 | 1045 | 2007 | 55 | 4.83+7 | 1.50+7 | 4.90+6 | 1.65+7 | 3.32+6 | 7.63+5 | 6.48+7 | 1.83+7 | 5.66+6 |
| MONTICELLO | 2007 | 835 | 1998 | 46 | 2.88+7 | 1.39+7 | 6.89+6 | 4.65+6 | 1.77+6 | 7.12+5 | 3.35+7 | 1.57+7 | 7.60+6 |
| NINE MILE PT 1 | 2006 | 1252 | 1990 | 47 | 3.08+7 | 2.18+7 | 1.57+7 | 8.29+6 | 4.08+6 | 2.16+6 | 3.89+7 | 2.59+7 | 1.79+7 |
| NINE MILE PT 2 | 2026 | 2533 | 2007 | 54 | 4.71+7 | 1.46+7 | 4.78+6 | 1.70+7 | 3.35+6 | 7.58+5 | 6.41+7 | 1.80+7 | 5.54+6 |
| A NORTH ANNA 1 | 2018 | 2451 | 1992 | 76 | 1.01+8 | 6.50+7 | 4.27+7 | 4.85+7 | 1.73+7 | 7.25+6 | 1.50+8 | 8.23+7 | 5.00+7 |
| A NORTH ANNA 2 | 2020 | (a) | 1992 | | | | | | | | | | |
| A OCONEE 1 | 2013 | 2641 | (b) | 77 | 1.05+8 | 7.64+7 | 5.68+7 | 4.88+7 | 2.15+7 | 1.10+7 | 1.54+8 | 9.79+7 | 6.78+7 |
| A OCONEE 2 | 2013 | (a) | (b) | | | | | | | | | | |
| OCONEE 3 | 2014 | 1381 | (b) | 60 | 5.92+7 | 4.64+7 | 3.67+7 | 2.94+7 | 1.27+7 | 6.43+6 | 8.86+7 | 5.91+7 | 4.31+7 |
| OYSTER CRK 1 | 2004 | 1424 | 1989 | 48 | 3.29+7 | 2.45+7 | 1.88+7 | 8.98+6 | 4.63+6 | 2.57+6 | 4.19+7 | 2.91+7 | 2.12+7 |
| PALISADES | 2011 | 1039 | (b) | 53 | 4.35+7 | 3.41+7 | 2.70+7 | 1.88+7 | 8.65+6 | 4.51+6 | 6.23+7 | 4.28+7 | 3.15+7 |
| PALO VERDE 1 | 2024 | 1627 | 1996 | 61 | 6.13+7 | 3.25+7 | 1.78+7 | 3.27+7 | 9.24+6 | 3.15+6 | 9.40+7 | 4.17+7 | 2.10+7 |
| PALO VERDE 2 | 2025 | 1631 | 1997 | 61 | 6.15+7 | 3.10+7 | 1.62+7 | 3.28+7 | 8.82+6 | 2.87+6 | 9.43+7 | 3.98+7 | 1.91+7 |
| PALO VERDE 3 | 2026 | 1631 | 1998 | 61 | 6.15+7 | 2.96+7 | 1.47+7 | 3.28+7 | 8.40+6 | 2.61+6 | 9.43+7 | 3.80+7 | 1.73+7 |
| PEACHBOTTOM 2 | 2008 | 2724 | 1991 | 55 | 4.94+7 | 3.34+7 | 2.30+7 | 1.60+7 | 7.17+6 | 3.51+6 | 6.54+7 | 4.06+7 | 2.65+7 |
| PEACHBOTTOM 3 | 2008 | 2469 | 1991 | 54 | 4.64+7 | 3.14+7 | 2.16+7 | 1.49+7 | 6.70+6 | 3.28+6 | 6.13+7 | 3.81+7 | 2.49+7 |
| PERRY 1 | 2026 | 3444 | 2003 | 60 | 5.89+7 | 2.22+7 | 8.75+6 | 2.58+7 | 5.71+6 | 1.48+6 | 8.47+7 | 2.79+7 | 1.02+7 |
| PILGRIM 1 | 2008 | 1898 | 1988 | 51 | 3.90+7 | 3.06+7 | 2.42+7 | 1.45+7 | 7.07+6 | 3.83+6 | 5.35+7 | 3.77+7 | 2.80+7 |
| A POINT BEACH 1 | 2007 | 1137 | 1990 | 53 | 4.51+7 | 3.20+7 | 2.31+7 | 1.45+7 | 6.82+6 | 3.50+6 | 5.96+7 | 3.88+7 | 2.66+7 |
| A POINT BEACH 2 | 2008 | (a) | 1990 | | | | | | | | | | |
| A PRAIRIE ISL 1 | 2008 | 1502 | 1988 | 57 | 5.25+7 | 4.12+7 | 3.26+7 | 2.00+7 | 9.78+6 | 5.30+6 | 7.25+7 | 5.10+7 | 3.79+7 |
| A PRAIRIE ISL 2 | 2008 | (a) | 1988 | | | | | | | | | | |
| B QUAD CITIES 1 | 2007 | 1463 | 2002 | 48 | 3.37+7 | 1.34+7 | 5.52+6 | 3.08+6 | 1.05+6 | 3.81+5 | 3.68+7 | 1.45+7 | 5.90+6 |
| B QUAD CITIES 2 | 2007 | (a) | 2002 | | | | | | | | | | |
| RANCHO SECO 1 | 2008 | 640 | 1992 | 49 | 3.63+7 | 2.34+7 | 1.64+7 | 1.07+7 | 4.67+6 | 2.22+6 | 4.70+7 | 2.81+7 | 1.76+7 |
| ROBINSON 2 | 2007 | 966 | (b) | 53 | 4.32+7 | 3.38+7 | 2.68+7 | 1.54+7 | 7.68+6 | 4.21+6 | 5.86+7 | 4.15+7 | 3.10+7 |
| RVR BEND 1 | 2025 | 3220 | 2001 | 58 | 5.62+7 | 2.34+7 | 1.01+7 | 2.57+7 | 6.15+6 | 1.73+6 | 8.19+7 | 2.98+7 | 1.18+7 |
| SALEM 1 | 2016 | 1487 | 1989 | 61 | 6.27+7 | 4.68+7 | 3.54+7 | 3.22+7 | 1.30+7 | 6.22+6 | 9.49+7 | 5.98+7 | 4.16+7 |
| SALEM 2 | 2020 | 1667 | 1992 | 64 | 6.91+7 | 4.48+7 | 2.93+7 | 3.67+7 | 1.26+7 | 5.17+6 | 1.06+8 | 5.72+7 | 3.45+7 |

TABLE A4b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - VAULT OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 3172 | 1989 | 76 | 1.01+8 | 7.41+7 | 5.52+7 | 1.87+7 | 1.08+7 | 6.49+6 | 1.20+8 | 8.49+7 | 6.17+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | 1989 | | | | | | | | | | |
| E | SAN ONOFRE 3 | 2013 | (a) | 1989 | | | | | | | | | | |
| | SEABROOK 1 | 2031 | 1645 | 2000 | 63 | 6.83+7 | 2.98+7 | 1.35+7 | 4.02+7 | 8.82+6 | 2.43+6 | 1.09+8 | 3.86+7 | 1.59+7 |
| A | SEQUOYAH 1 | 2021 | 3400 | 1989 | 68 | 1.30+8 | 9.11+7 | 6.48+7 | 7.95+7 | 2.93+7 | 1.34+7 | 2.10+8 | 1.20+8 | 7.82+7 |
| A | SEQUOYAH 2 | 2022 | (a) | 1989 | | | | | | | | | | |
| | SHOREHAM | 2027 | 3371 | 2000 | 59 | 5.73+7 | 2.50+7 | 1.13+7 | 2.95+7 | 6.99+6 | 2.00+6 | 8.68+7 | 3.20+7 | 1.33+7 |
| | SOUTH TEXAS 1 | 2027 | 570 | 2017 | 50 | 3.72+7 | 7.09+6 | 1.46+6 | 6.87+6 | 1.01+6 | 1.65+5 | 4.41+7 | 8.10+6 | 1.63+6 |
| | SOUTH TEXAS 2 | 2028 | 570 | 2018 | 50 | 3.70+7 | 6.71+6 | 1.32+6 | 6.83+6 | 9.56+5 | 1.49+5 | 4.38+7 | 7.67+6 | 1.47+6 |
| | ST LUCIE 1 | 2016 | 1638 | (b) | 59 | 5.71+7 | 4.48+7 | 3.55+7 | 2.40+7 | 1.12+7 | 5.94+6 | 8.11+7 | 5.60+7 | 4.14+7 |
| | ST LUCIE 2 | 2023 | 1558 | 1992 | 58 | 5.50+7 | 3.55+7 | 2.33+7 | 3.25+7 | 1.06+7 | 4.22+6 | 8.75+7 | 4.61+7 | 2.75+7 |
| | SUMMER 1 | 2024 | 1169 | 1999 | 57 | 5.19+7 | 2.38+7 | 1.13+7 | 2.47+7 | 6.38+6 | 1.95+6 | 7.66+7 | 3.02+7 | 1.33+7 |
| A | SURRY 1 | 2012 | 574 | 2005 | 48 | 3.39+7 | 1.16+7 | 4.17+6 | 4.33+6 | 1.22+6 | 3.70+5 | 3.82+7 | 1.28+7 | 4.54+6 |
| A | SURRY 2 | 2013 | (a) | 2005 | | | | | | | | | | |
| B | SUSQUEHANNA 1 | 2022 | 8680 | 1995 | 67 | 1.29+8 | 7.21+7 | 4.13+7 | 6.66+7 | 2.01+7 | 7.26+6 | 1.96+8 | 9.22+7 | 4.86+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | 1995 | | | | | | | | | | |
| | THREE MILE ISL 1 | 2008 | 513 | 1997 | 48 | 3.20+7 | 1.62+7 | 8.42+6 | 6.37+6 | 2.43+6 | 9.91+5 | 3.84+7 | 1.86+7 | 9.41+6 |
| | TROJAN | 2011 | 661 | 1998 | 50 | 3.69+7 | 1.77+7 | 8.83+6 | 8.84+6 | 3.07+6 | 1.16+6 | 4.57+7 | 2.08+7 | 9.99+6 |
| E | TURKEY PT 3 | 2007 | 816 | 1995 | 52 | 4.14+7 | 2.31+7 | 1.32+7 | 9.29+6 | 3.82+6 | 1.68+6 | 5.07+7 | 2.69+7 | 1.49+7 |
| E | TURKEY PT 4 | 2007 | (a) | 1995 | | | | | | | | | | |
| B | VOGTLE 1 | 2027 | 3251 | 2000 | 65 | 1.25+8 | 5.46+7 | 2.47+7 | 6.39+7 | 1.51+7 | 4.32+6 | 1.89+8 | 6.97+7 | 2.90+7 |
| B | VOGTLE 2 | 2028 | (a) | 2000 | | | | | | | | | | |
| | VT YANKEE 1 | 2012 | 1598 | 1993 | 49 | 3.62+7 | 2.22+7 | 1.40+7 | 1.26+7 | 4.94+6 | 2.15+6 | 4.88+7 | 2.71+7 | 1.62+7 |
| | WASH NUCLEAR 2 | 2023 | 4642 | 1994 | 66 | 7.57+7 | 4.43+7 | 2.65+7 | 4.14+7 | 1.26+7 | 4.68+6 | 1.17+8 | 5.69+7 | 3.12+7 |
| | WATERFORD 3 | 2024 | 1671 | 1997 | 61 | 6.26+7 | 3.16+7 | 1.65+7 | 3.22+7 | 8.82+6 | 2.90+6 | 9.48+7 | 4.04+7 | 1.94+7 |
| A | WATTS BAR 1 | 2025 | 3411 | 1994 | 68 | 1.31+8 | 7.65+7 | 4.58+7 | 7.73+7 | 2.27+7 | 8.29+6 | 2.08+8 | 9.92+7 | 5.41+7 |
| A | WATTS BAR 2 | 2027 | (a) | 1994 | | | | | | | | | | |
| | WOLF CREEK 1 | 2025 | 1313 | 1999 | 59 | 5.67+7 | 2.60+7 | 1.23+7 | 2.81+7 | 7.13+6 | 2.16+6 | 8.48+7 | 3.31+7 | 1.45+7 |
| | YANKEE-ROWE 1 | 2001 | 264 | 1990 | 46 | 2.88+7 | 2.05+7 | 1.48+7 | 5.68+6 | 3.05+6 | 1.72+6 | 3.45+7 | 2.36+7 | 1.65+7 |
| A | ZION 1 | 2008 | 1943 | 1988 | 67 | 7.94+7 | 6.03+7 | 4.63+7 | 2.98+7 | 1.46+7 | 7.88+6 | 1.09+8 | 7.49+7 | 5.42+7 |
| A | ZION 2 | 2008 | (a) | 1988 | | | | | | | | | | |
| | TOTAL | | | | | 5.81+9 | 3.45+9 | 2.23+9 | 2.62+9 | 8.99+8 | 3.87+8 | 8.43+9 | 4.35+9 | 2.62+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1.
(b) NEED ADDITIONAL SPACE AS OF 1986.

TABLE A6. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - CASK STORAGE OPTION(1983 DOLLARS).

| | PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | P | 120 | 1.99+7 | 1.04+7 | 5.58+6 | 5.42+5 | 3.18+7 | 2.40+7 | 1.87+7 | 1.25+7 | 1.42+7 | 1.36+7 |
| | ARK NUCLEAR 2 | P | 136 | 2.30+7 | 1.03+7 | 4.83+6 | 5.54+5 | 3.67+7 | 2.64+7 | 1.96+7 | 1.43+7 | 1.66+7 | 1.53+7 |
| | BEAVER VALLEY 1 | P | 138 | 3.56+7 | 1.83+7 | 9.82+6 | 6.21+5 | 4.93+7 | 3.71+7 | 2.89+7 | 1.43+7 | 1.94+7 | 1.97+7 |
| | BEAVER VALLEY 2 | P | 146 | 3.49+7 | 9.59+6 | 2.82+6 | 6.47+5 | 4.94+7 | 2.08+7 | 9.28+6 | 1.51+7 | 1.19+7 | 7.11+6 |
| | BELLEFONTE 1 | P | 168 | 6.75+7 | 1.87+7 | 5.52+6 | 7.34+5 | 8.92+7 | 3.76+7 | 1.68+7 | 2.24+7 | 1.97+7 | 1.20+7 |
| | BELLEFONTE 2 | P | 168 | 6.75+7 | 1.69+7 | 4.56+6 | 7.34+5 | 8.92+7 | 3.41+7 | 1.39+7 | 2.24+7 | 1.79+7 | 1.00+7 |
| | BIG ROCK 1 | B | 40 | 1.91+7 | 1.06+7 | 6.05+6 | 6.58+4 | 1.95+7 | 1.25+7 | 8.12+6 | 4.33+5 | 1.88+6 | 2.13+6 |
| A | BRAIDWOOD 1 | P | 252 | 1.33+8 | 6.75+7 | 3.62+7 | 1.03+6 | 1.55+8 | 1.05+8 | 7.45+7 | 2.36+7 | 3.89+7 | 3.94+7 |
| A | BRAIDWOOD 2 | P | (a) | | | | | | | | | | |
| B | BROWNS FERRY 1. | B | 684 | 4.71+7 | 1.85+7 | 7.58+6 | 1.32+6 | 6.54+7 | 3.11+7 | 1.53+7 | 1.96+7 | 1.39+7 | 9.04+6 |
| B | BROWNS FERRY 2 | B | (a) | | | | | | | | | | |
| | BROWNS FERRY 3 | B | 456 | 3.84+7 | 1.57+7 | 6.68+6 | 9.02+5 | 5.01+7 | 2.72+7 | 1.63+7 | 1.26+7 | 1.24+7 | 9.53+6 |
| | BRUNSWICK 1 | B | 376 | 3.88+7 | 2.66+7 | 1.89+7 | 7.59+5 | 4.78+7 | 3.65+7 | 2.85+7 | 1.00+7 | 1.06+7 | 1.03+7 |
| | | P | | 0.00+0 | | | | | | | | | |
| | BRUNSWICK 2 | B | 376 | 3.67+7 | 2.41+7 | 1.64+7 | 7.52+5 | 4.60+7 | 3.51+7 | 2.74+7 | 1.01+7 | 1.17+7 | 1.18+7 |
| | | P | | 0.00+0 | | | | | | | | | |
| A | BYRON 1 | P | 264 | 1.33+8 | 7.44+7 | 4.38+7 | 1.07+6 | 1.55+8 | 1.16+8 | 9.05+7 | 2.35+7 | 4.24+7 | 4.78+7 |
| A | BYRON 2 | P | (a) | | | | | | | | | | |
| | CALLAWAY 1 | P | 168 | 4.20+7 | 1.40+7 | 4.97+6 | 7.13+5 | 5.82+7 | 2.98+7 | 1.60+7 | 1.69+7 | 1.65+7 | 1.17+7 |
| B | CALVERT CLF 1 | P | 192 | 6.76+7 | 4.26+7 | 2.77+7 | 7.16+5 | 8.77+7 | 6.67+7 | 5.21+7 | 2.08+7 | 2.48+7 | 2.51+7 |
| B | CALVERT CLF 2 | P | (a) | | | | | | | | | | |
| | CATAWBA 1 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 6.42+5 | 1.89+7 | 2.98+6 | 5.03+5 | 1.95+7 | 3.60+6 | 1.15+6 |
| | CATAWBA 2 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 5.94+5 | 1.88+7 | 2.67+6 | 4.14+5 | 1.94+7 | 3.26+6 | 1.01+6 |
| | CLINTON 1 | B | 344 | 4.06+7 | 1.28+7 | 4.32+6 | 6.96+5 | 4.96+7 | 2.08+7 | 9.30+6 | 9.72+6 | 8.71+6 | 5.67+6 |
| B | COMANCHE PK 1 | P | 198 | 7.42+7 | 1.54+7 | 3.45+6 | 8.76+5 | 1.00+8 | 2.62+7 | 7.39+6 | 2.68+7 | 1.17+7 | 4.82+6 |
| B | COMANCHE PK 2 | P | (a) | | | | | | | | | | |
| A | COOK 1 | P | 256 | 4.53+7 | 2.16+7 | 1.07+7 | 1.12+6 | 7.17+7 | 4.77+7 | 3.26+7 | 2.75+7 | 2.72+7 | 2.30+7 |
| A | COOK 2 | P | (a) | | | | | | | | | | |
| | COOPER STN | B | 232 | 2.20+7 | 1.09+7 | 5.66+6 | 4.90+5 | 2.91+7 | 1.74+7 | 1.08+7 | 7.52+6 | 6.96+6 | 5.65+6 |
| | CRYSTAL RVR 3 | P | 72 | 1.98+7 | 6.66+6 | 2.37+6 | 3.34+5 | 2.84+7 | 1.26+7 | 5.90+6 | 8.91+6 | 6.31+6 | 3.87+6 |
| | DAVIS-BESSE 1 | P | 120 | 9.50+7 | 5.16+7 | 2.92+7 | 6.48+5 | 1.13+8 | 8.55+7 | 6.65+7 | 1.90+7 | 3.44+7 | 3.78+7 |
| | DIABLO CANYON 1 | P | 85 | 2.33+7 | 5.80+6 | 1.56+6 | 3.89+5 | 3.27+7 | 1.03+7 | 3.48+6 | 9.83+6 | 4.89+6 | 2.31+6 |
| | DIABLO CANYON 2 | P | 85 | 2.33+7 | 5.80+6 | 1.56+6 | 3.89+5 | 3.27+7 | 1.03+7 | 3.48+6 | 9.83+6 | 4.89+6 | 2.31+6 |
| | DRESDEN 1 | B | | 0.00+0 | | | | | | | | | |
| | DRESDEN 2 | B | 316 | 1.98+7 | 9.32+6 | 4.60+6 | 6.12+5 | 2.71+7 | 1.70+7 | 1.10+7 | 8.04+6 | 8.27+6 | 6.98+6 |
| | DRESDEN 3 | B | 316 | 1.94+7 | 8.40+6 | 3.78+6 | 6.12+5 | 2.25+7 | 1.29+7 | 7.59+6 | 3.75+6 | 5.07+6 | 4.42+6 |
| | DUANE ARNOLD | B | 256 | 1.97+7 | 8.92+6 | 4.18+6 | 5.30+5 | 2.68+7 | 1.74+7 | 1.18+7 | 7.63+6 | 9.06+6 | 8.19+6 |
| | ENRICO FERMI 2 | B | 552 | 7.91+7 | 3.87+7 | 1.99+7 | 1.08+6 | 1.00+8 | 6.76+7 | 4.78+7 | 2.20+7 | 3.00+7 | 2.90+7 |
| | FARLEY 1 | P | 136 | 1.91+7 | 6.20+6 | 2.12+6 | 6.13+5 | 3.02+7 | 1.49+7 | 7.65+6 | 1.17+7 | 9.27+6 | 6.14+6 |
| | FARLEY 2 | P | 136 | 1.89+7 | 5.58+6 | 1.74+6 | 6.13+5 | 2.45+7 | 1.10+7 | 5.14+6 | 6.18+6 | 6.02+6 | 4.02+6 |
| | FITZPATRICK | B | 360 | 3.64+7 | 1.79+7 | 9.20+6 | 7.30+5 | 4.59+7 | 3.01+7 | 2.04+7 | 1.03+7 | 1.29+7 | 1.19+7 |
| | FORT CALHOUN | P | 90 | 1.97+7 | 1.14+7 | 6.74+6 | 3.19+5 | 2.40+7 | 1.82+7 | 1.41+7 | 4.54+6 | 7.10+6 | 7.64+6 |
| | FT ST VRAIN | G | 240 | 0.00+0 | | | | | | | | | |
| | GINNA | P | 64 | 1.91+7 | 8.32+6 | 3.76+6 | 2.32+5 | 1.99+7 | 1.14+7 | 6.75+6 | 9.69+5 | 3.34+6 | 3.23+6 |
| | GRAND GULF 1 | B | 536 | 6.32+7 | 2.96+7 | 1.45+7 | 1.04+6 | 8.03+7 | 4.99+7 | 3.23+7 | 1.82+7 | 2.13+7 | 1.88+7 |
| | HADDAM NECK | P | 104 | 1.98+7 | 9.79+6 | 5.06+6 | 4.19+5 | 2.51+7 | 1.73+7 | 1.23+7 | 5.91+6 | 7.92+6 | 7.62+6 |
| | HARRIS 1 | P | 104 | 0.00+0 | | | 4.75+5 | | | | | | |
| | | B | | 0.00+0 | | | | | | | | | |

TABLE A6. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - CASK STORAGE OPTION(1983 DOLLARS) (cont'd)

| PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| B HATCH 1 | B | 588 | 4.26+7 | 1.85+7 | 8.34+6 | 1.14+6 | 5.78+7 | 3.04+7 | 1.65+7 | 1.63+7 | 1.30+7 | 9.31+6 |
| B HATCH 2 | B | (a) | | | | | | | | | | |
| HOPE CREEK | B | 464 | 4.36+7 | 1.31+7 | 4.26+6 | 9.22+5 | 5.58+7 | 2.25+7 | 9.61+6 | 1.31+7 | 1.02+7 | 6.27+6 |
| HUMBOLDT BAY | B | | 0.00+0 | | | | | | | | | |
| INDIAN PT 1 | P | | 0.00+0 | | | | | | | | | |
| INDIAN PT 2 | P | 136 | 2.20+7 | 1.26+7 | 7.46+6 | 6.01+5 | 3.63+7 | 2.77+7 | 2.16+7 | 1.49+7 | 1.57+7 | 1.47+7 |
| INDIAN PT 3 | P | 152 | 2.36+7 | 8.33+6 | 3.11+6 | 6.77+5 | 3.97+7 | 2.25+7 | 1.32+7 | 1.68+7 | 1.49+7 | 1.08+7 |
| KEWAUNEE | P | 74 | 2.19+7 | 9.78+6 | 4.57+6 | 2.84+5 | 2.93+7 | 1.72+7 | 1.06+7 | 7.66+6 | 7.73+6 | 6.29+6 |
| LACROSSE | B | 48 | 1.96+7 | 1.25+7 | 8.14+6 | 6.68+4 | 2.02+7 | 1.62+7 | 1.32+7 | 6.77+5 | 3.80+6 | 5.16+6 |
| B LASALLE CTY 1 | B | 668 | 1.51+8 | 1.03+8 | 7.30+7 | 1.27+6 | 1.57+8 | 1.19+8 | 9.31+7 | 6.76+6 | 1.77+7 | 2.14+7 |
| B LASALLE CTY 2 | B | (a) | | | | | | | | | | |
| LIMERICK 1 | B | 448 | 6.10+7 | 3.26+7 | 1.85+7 | 8.93+5 | 7.54+7 | 5.63+7 | 4.39+7 | 1.53+7 | 2.44+7 | 2.63+7 |
| LIMERICK 2 | B | 440 | 6.28+7 | 2.91+7 | 1.42+7 | 8.73+5 | 7.71+7 | 4.96+7 | 3.35+7 | 1.52+7 | 2.14+7 | 2.02+7 |
| MAINE YANKEE | P | 146 | 2.26+7 | 1.17+7 | 6.35+6 | 5.25+5 | 3.56+7 | 2.83+7 | 2.31+7 | 1.36+7 | 1.71+7 | 1.73+7 |
| MCGUIRE 1 | P | 144 | 3.82+7 | 1.27+7 | 4.54+6 | 6.42+5 | 5.24+7 | 2.57+7 | 1.32+7 | 1.49+7 | 1.36+7 | 9.35+6 |
| MCGUIRE 2 | P | 144 | 3.91+7 | 1.24+7 | 4.21+6 | 6.42+5 | 5.33+7 | 2.49+7 | 1.22+7 | 1.48+7 | 1.31+7 | 8.65+6 |
| MILLSTONE 1 | B | 196 | 3.89+7 | 3.08+7 | 2.52+7 | 4.05+5 | 4.33+7 | 3.29+7 | 2.57+7 | 4.84+6 | 2.48+6 | 9.06+5 |
| MILLSTONE 2 | P | 156 | 3.09+7 | 1.52+7 | 7.77+6 | 6.13+5 | 4.50+7 | 3.38+7 | 2.62+7 | 1.46+7 | 1.92+7 | 1.91+7 |
| MILLSTONE 3 | P | 168 | 2.35+7 | 4.64+6 | 9.92+5 | 7.45+5 | 4.09+7 | 1.24+7 | 4.00+6 | 1.81+7 | 8.54+6 | 3.76+6 |
| MONTICELLO | B | 240 | 1.88+7 | 6.74+6 | 2.53+6 | 4.89+5 | 1.95+7 | 9.29+6 | 4.59+6 | 1.22+6 | 3.04+6 | 2.55+6 |
| NINE MILE PT 1 | B | 184 | 1.95+7 | 1.02+7 | 5.54+6 | 3.80+5 | 2.20+7 | 1.52+7 | 1.08+7 | 2.90+6 | 5.38+6 | 5.64+6 |
| NINE MILE PT 2 | B | 276 | 3.24+7 | 8.10+6 | 2.18+6 | 5.71+5 | 3.99+7 | 1.21+7 | 3.90+6 | 8.07+6 | 4.53+6 | 2.29+6 |
| A NORTH ANNA 1 | P | 196 | 6.97+7 | 3.14+7 | 1.48+7 | 8.91+5 | 9.61+7 | 6.00+7 | 3.89+7 | 2.74+7 | 2.95+7 | 2.50+7 |
| A NORTH ANNA 2 | P | (a) | | | | | | | | | | |
| A OCONEE 1 | P | 180 | 7.76+7 | 5.65+7 | 4.22+7 | 8.01+5 | 1.01+8 | 7.69+7 | 6.01+7 | 2.44+7 | 2.12+7 | 1.87+7 |
| A OCONEE 2 | P | (a) | | | | | | | | | | |
| OCONEE 3 | P | 120 | 4.11+7 | 2.69+7 | 1.82+7 | 5.42+5 | 5.24+7 | 3.97+7 | 3.10+7 | 1.18+7 | 1.34+7 | 1.34+7 |
| OYSTER CRK 1 | B | 256 | 1.96+7 | 1.14+7 | 6.72+6 | 5.11+5 | 2.42+7 | 1.76+7 | 1.32+7 | 5.11+6 | 6.80+6 | 6.97+6 |
| PALISADES | P | 68 | 3.12+7 | 2.34+7 | 1.81+7 | 2.70+5 | 3.68+7 | 2.77+7 | 2.15+7 | 5.85+6 | 4.51+6 | 3.69+6 |
| PALO VERDE 1 | P | 170 | 3.95+7 | 1.32+7 | 4.66+6 | 6.74+5 | 5.46+7 | 2.80+7 | 1.50+7 | 1.58+7 | 1.54+7 | 1.10+7 |
| PALO VERDE 2 | P | 170 | 3.96+7 | 1.26+7 | 4.25+6 | 6.74+5 | 5.47+7 | 2.67+7 | 1.37+7 | 1.58+7 | 1.48+7 | 1.01+7 |
| PALO VERDE 3 | P | 170 | 3.96+7 | 1.20+7 | 3.87+6 | 6.74+5 | 5.47+7 | 2.54+7 | 1.24+7 | 1.58+7 | 1.41+7 | 9.24+6 |
| PEACHBOTTOM 2 | B | 456 | 2.98+7 | 1.49+7 | 7.68+6 | 9.02+5 | 4.19+7 | 2.77+7 | 1.90+7 | 1.30+7 | 1.37+7 | 1.22+7 |
| PEACHBOTTOM 3 | B | 440 | 2.69+7 | 1.34+7 | 6.91+6 | 8.73+5 | 3.88+7 | 2.57+7 | 1.75+7 | 1.28+7 | 1.32+7 | 1.14+7 |
| PERRY 1 | B | 448 | 4.00+7 | 1.10+7 | 3.24+6 | 8.93+5 | 5.17+7 | 1.89+7 | 7.37+6 | 1.25+7 | 8.87+6 | 5.03+6 |
| PILGRIM 1 | B | 192 | 2.58+7 | 1.54+7 | 9.54+6 | 3.97+5 | 3.15+7 | 2.38+7 | 1.85+7 | 6.14+6 | 8.84+6 | 9.33+6 |
| A POINT BEACH 1 | P | 96 | 2.93+7 | 1.61+7 | 9.10+6 | 3.64+5 | 3.75+7 | 2.61+7 | 1.86+7 | 8.54+6 | 1.03+7 | 9.87+6 |
| A POINT BEACH 2 | P | (a) | | | | | | | | | | |
| A PRAIRIE ISL 1 | P | 120 | 3.61+7 | 2.17+7 | 1.35+7 | 4.31+5 | 4.53+7 | 3.46+7 | 2.71+7 | 9.63+6 | 1.33+7 | 1.40+7 |
| A PRAIRIE ISL 2 | P | (a) | | | | | | | | | | |
| B QUAD CITIES 1 | B | 480 | 1.86+7 | 6.38+6 | 2.30+6 | 9.21+5 | 2.38+7 | 9.37+6 | 3.86+6 | 6.06+6 | 3.92+6 | 2.49+6 |
| B QUAD CITIES 2 | B | (a) | | | | | | | | | | |
| RANCHO SECO 1 | P | 138 | 1.89+7 | 6.78+6 | 2.54+6 | 6.19+5 | 2.80+7 | 1.76+7 | 1.14+7 | 9.70+6 | 1.14+7 | 9.45+6 |
| ROBINSON 2 | P | 96 | 2.70+7 | 1.86+7 | 1.32+7 | 4.00+5 | 3.58+7 | 2.72+7 | 2.13+7 | 9.23+6 | 8.98+6 | 8.49+6 |
| RVR BEND 1 | B | 384 | 3.92+7 | 1.18+7 | 3.83+6 | 7.81+5 | 4.94+7 | 1.99+7 | 8.49+6 | 1.10+7 | 8.88+6 | 5.43+6 |
| SALEM 1 | P | 160 | 3.99+7 | 1.96+7 | 1.01+7 | 7.11+5 | 5.57+7 | 4.02+7 | 3.00+7 | 1.65+7 | 2.13+7 | 2.06+7 |
| SALEM 2 | P | 168 | 4.46+7 | 1.81+7 | 7.74+6 | 7.45+5 | 6.18+7 | 3.85+7 | 2.50+7 | 1.80+7 | 2.11+7 | 1.80+7 |

TABLE A5. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - CASK STORAGE OPTION(1983 DOLLARS)(cont'd)

| | PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | P | 270 | 6.58+7 | 3.66+7 | 2.09+7 | 9.58+5 | 9.23+7 | 6.84+7 | 5.15+7 | 2.75+7 | 3.27+7 | 3.16+7 |
| E | SAN ONOFRE 2 | P | (a) | | | | | | | | | | |
| E | SAN ONOFRE 3 | P | (a) | | | | | | | | | | |
| | SEABROOK 1 | P | 128 | 4.80+7 | 1.38+7 | 4.25+6 | 5.74+5 | 6.15+7 | 2.58+7 | 1.15+7 | 1.40+7 | 1.26+7 | 7.81+6 |
| A | SEQUOYAH 1 | P | 240 | 1.03+8 | 5.54+7 | 3.12+7 | 1.06+6 | 1.36+8 | 9.66+7 | 7.17+7 | 3.39+7 | 4.23+7 | 4.15+7 |
| A | SEQUOYAH 2 | P | (a) | | | | | | | | | | |
| | SHOREHAM | B | 368 | 4.12+7 | 1.30+7 | 4.40+6 | 7.38+5 | 5.08+7 | 2.14+7 | 9.54+6 | 1.04+7 | 9.15+6 | 5.87+6 |
| | SOUTH TEXAS 1 | P | 104 | 1.89+7 | 2.68+6 | 4.16+5 | 5.51+5 | 2.81+7 | 5.29+6 | 1.07+6 | 9.79+6 | 3.16+6 | 1.21+6 |
| | SOUTH TEXAS 2 | P | 104 | 1.89+7 | 2.55+6 | 3.78+5 | 5.46+5 | 2.79+7 | 5.00+6 | 9.73+5 | 9.59+6 | 3.00+6 | 1.14+6 |
| | ST LUCIE 1 | P | 152 | 3.90+7 | 3.09+7 | 2.52+7 | 5.52+5 | 4.99+7 | 3.81+7 | 2.98+7 | 1.15+7 | 7.71+6 | 5.15+6 |
| | ST LUCIE 2 | P | 144 | 3.75+7 | 1.50+7 | 6.38+6 | 5.25+5 | 4.92+7 | 3.03+7 | 1.96+7 | 1.23+7 | 1.58+7 | 1.37+7 |
| | SUMMER 1 | P | 136 | 3.17+7 | 9.15+6 | 2.82+6 | 6.05+5 | 4.55+7 | 2.00+7 | 9.38+6 | 1.43+7 | 1.15+7 | 7.17+6 |
| A | SURRY 1 | P | 159 | 1.84+7 | 4.48+6 | 1.16+6 | 7.03+5 | 2.43+7 | 8.23+6 | 2.94+6 | 6.58+6 | 4.45+6 | 2.49+6 |
| A | SURRY 2 | P | (a) | | | | | | | | | | |
| B | SUSQUEHANNA 1 | B | 698 | 1.09+8 | 4.61+7 | 2.08+7 | 1.31+6 | 1.33+8 | 7.14+7 | 4.02+7 | 2.49+7 | 2.66+7 | 2.08+7 |
| B | SUSQUEHANNA 2 | B | (a) | | | | | | | | | | |
| | THREE MILE ISL 1 | P | 148 | 1.86+7 | 6.07+6 | 2.08+6 | 8.54+5 | 2.29+7 | 1.14+7 | 5.86+6 | 4.86+6 | 5.93+6 | 4.43+6 |
| | TROJAN | P | 98 | 1.93+7 | 6.87+6 | 2.57+6 | 4.37+5 | 2.82+7 | 1.33+7 | 6.54+6 | 9.34+6 | 6.91+6 | 4.41+6 |
| E | TURKEY PT 3 | P | 144 | 1.90+7 | 7.51+6 | 3.10+6 | 6.39+5 | 3.29+7 | 1.80+7 | 1.02+7 | 1.45+7 | 1.12+7 | 7.78+6 |
| E | TURKEY PT 4 | P | (a) | | | | | | | | | | |
| B | VOGTLE 1 | P | 252 | 9.31+7 | 2.98+7 | 1.01+7 | 1.11+6 | 1.28+8 | 5.38+7 | 2.40+7 | 3.62+7 | 2.53+7 | 1.50+7 |
| B | VOGTLE 2 | P | (a) | | | | | | | | | | |
| | VT YANKEE 1 | B | 264 | 2.00+7 | 8.98+6 | 4.20+6 | 5.53+5 | 2.83+7 | 1.68+7 | 1.03+7 | 8.85+6 | 8.33+6 | 6.68+6 |
| | WASH NUCLEAR 2 | B | 312 | 5.90+7 | 2.75+7 | 1.35+7 | 6.39+5 | 6.83+7 | 3.86+7 | 2.27+7 | 9.97+6 | 1.17+7 | 9.85+6 |
| | WATERFORD 3 | P | 176 | 4.01+7 | 1.28+7 | 4.32+6 | 6.98+5 | 5.57+7 | 2.72+7 | 1.40+7 | 1.63+7 | 1.51+7 | 1.03+7 |
| A | WATTS BAR 1 | P | 240 | 1.03+8 | 4.15+7 | 1.77+7 | 1.06+6 | 1.36+8 | 7.59+7 | 4.47+7 | 3.47+7 | 3.55+7 | 2.81+7 |
| A | WATTS BAR 2 | P | (a) | | | | | | | | | | |
| | WOLF CREEK 1 | P | 152 | 3.50+7 | 1.01+7 | 3.11+6 | 6.77+5 | 5.01+7 | 2.22+7 | 1.04+7 | 1.57+7 | 1.27+7 | 7.96+6 |
| | YANKEE-ROWE 1 | P | 76 | 1.86+7 | 8.55+6 | 4.06+6 | 1.86+5 | 1.97+7 | 1.38+7 | 9.87+6 | 1.28+6 | 5.45+6 | 6.00+6 |
| A | ZION 1 | P | 216 | 4.77+7 | 2.63+7 | 1.49+7 | 9.54+5 | 7.04+7 | 5.41+7 | 4.24+7 | 2.38+7 | 2.88+7 | 2.84+7 |
| A | ZION 2 | P | (a) | | | | | | | | | | |
| | TOTAL | | | 3.93+9 | 1.79+9 | 9.37+8 | 6.50+7 | 5.17+9 | 3.05+9 | 2.00+9 | 1.30+9 | 1.32+9 | 1.13+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A5a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - CASK OPTION (1983 DOLLARS)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O $ M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | 2008 | 377 | 1998 | 39 | 1.84+7 | 9.78+6 | 5.34+6 | 1.47+6 | 5.74+5 | 2.41+5 | 1.99+7 | 1.04+7 | 5.58+6 |
| | ARK NUCLEAR 2 | 2012 | 565 | 1999 | 39 | 2.13+7 | 9.74+6 | 4.63+6 | 1.71+6 | 5.67+5 | 2.04+5 | 2.30+7 | 1.03+7 | 4.83+6 |
| | BEAVER VALLEY 1 | 2016 | 853 | 1996 | 46 | 3.26+7 | 1.73+7 | 9.45+6 | 2.96+6 | 9.78+5 | 3.65+5 | 3.56+7 | 1.83+7 | 9.82+6 |
| | BEAVER VALLEY 2 | 2026 | 858 | 2009 | 46 | 3.24+7 | 9.12+6 | 2.72+6 | 2.51+6 | 4.69+5 | 9.96+4 | 3.49+7 | 9.59+6 | 2.82+6 |
| | BELLEFONTE 1 | 2028 | 1900 | 2009 | 43 | 6.43+7 | 1.81+7 | 5.40+6 | 3.17+6 | 5.67+5 | 1.17+5 | 6.75+7 | 1.87+7 | 5.52+6 |
| | BELLEFONTE 2 | 2030 | 1900 | 2011 | 43 | 6.43+7 | 1.84+7 | 4.46+6 | 3.17+6 | 5.14+5 | 9.67+4 | 6.75+7 | 1.89+7 | 4.56+6 |
| | BIG ROCK 1 | 2001 | 95 | 1995 | 39 | 1.84+7 | 1.03+7 | 5.88+6 | 7.33+5 | 3.45+5 | 1.70+5 | 1.91+7 | 1.06+7 | 6.05+6 |
| A | BRAIDWOOD 1 | 2026 | 3627 | 1996 | 47 | 1.21+8 | 6.43+7 | 3.51+7 | 1.16+7 | 3.16+6 | 1.06+6 | 1.33+8 | 6.75+7 | 3.62+7 |
| A | BRAIDWOOD 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| B | BROWNS FERRY 1 | 2014 | 3226 | 2002 | 41 | 4.54+7 | 1.80+7 | 7.42+6 | 1.74+6 | 5.10+5 | 1.62+5 | 4.71+7 | 1.85+7 | 7.58+6 |
| B | BROWNS FERRY 2 | 2014 | (a) | | | | | | | | | 0.00+0 | | |
| | BROWNS FERRY 3 | 2017 | 2441 | 2001 | 46 | 3.60+7 | 1.50+7 | 6.47+6 | 2.37+6 | 6.66+5 | 2.08+5 | 3.84+7 | 1.57+7 | 6.68+6 |
| | BRUNSWICK 1 | 2010 | 2401 | 1996 | 46 | 3.56+7 | 2.53+7 | 1.83+7 | 2.96+6 | 1.31+6 | 6.47+5 | 3.86+7 | 2.66+7 | 1.89+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| | BRUNSWICK 2 | 2010 | 2281 | 1991 | 46 | 3.39+7 | 2.29+7 | 1.58+7 | 2.81+6 | 1.21+6 | 5.78+5 | 3.67+7 | 2.41+7 | 1.64+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| A | BYRON 1 | 2024 | 3627 | 1994 | 47 | 1.21+8 | 7.09+7 | 4.25+7 | 1.16+7 | 3.48+6 | 1.28+6 | 1.33+8 | 7.44+7 | 4.38+7 |
| A | BYRON 2 | 2026 | (a) | | | | | | | | | 0.00+0 | | |
| | CALLAWAY 1 | 2024 | 1129 | 2005 | 46 | 3.92+7 | 1.34+7 | 4.82+6 | 2.79+6 | 6.67+5 | 1.51+5 | 4.20+7 | 1.40+7 | 4.97+6 |
| B | CALVERT CLF 1 | 2014 | 2213 | 1992 | 43 | 6.39+7 | 4.12+7 | 2.71+7 | 3.65+6 | 1.41+6 | 6.17+5 | 6.76+7 | 4.26+7 | 2.77+7 |
| B | CALVERT CLF 2 | 2016 | (a) | | | | | | | | | 0.00+0 | | |
| | CATAWBA 1 | 2025 | 0 | 2025 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CATAWBA 2 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CLINTON 1 | 2027 | 2572 | 2006 | 46 | 3.75+7 | 1.22+7 | 4.18+6 | 3.16+6 | 6.16+5 | 1.43+5 | 4.06+7 | 1.28+7 | 4.32+6 |
| B | COMANCHE PK 1 | 2030 | 2067 | 2015 | 43 | 7.14+7 | 1.50+7 | 3.38+6 | 2.81+6 | 4.08+5 | 6.75+4 | 7.42+7 | 1.54+7 | 3.45+6 |
| B | COMANCHE PK 2 | 2030 | (a) | | | | | | | | | 0.00+0 | | |
| A | COOK 1 | 2009 | 1241 | 1998 | 41 | 4.37+7 | 2.10+7 | 1.05+7 | 1.60+6 | 5.82+5 | 2.26+5 | 4.53+7 | 2.16+7 | 1.07+7 |
| A | COOK 2 | 2009 | (a) | | | | | | | | | 0.00+0 | | |
| | COOPER STN | 2008 | 1238 | 1997 | 39 | 2.06+7 | 1.04+7 | 5.44+6 | 1.43+6 | 5.45+5 | 2.22+5 | 2.20+7 | 1.09+7 | 5.66+6 |
| | CRYSTAL RVR 3 | 2016 | 432 | 2005 | 39 | 1.85+7 | 6.31+6 | 2.27+6 | 1.34+6 | 3.47+5 | 9.76+4 | 1.98+7 | 6.66+6 | 2.37+6 |
| | DAVIS-BESSE 1 | 2017 | 2490 | 1995 | 45 | 8.93+7 | 4.97+7 | 2.85+7 | 5.70+6 | 1.90+6 | 7.24+5 | 9.50+7 | 5.16+7 | 2.92+7 |
| | DIABLO CANYON 1 | 2025 | 517 | 2011 | 39 | 2.14+7 | 5.47+6 | 1.49+6 | 1.85+6 | 3.34+5 | 6.75+4 | 2.33+7 | 5.80+6 | 1.56+6 |
| | DIABLO CANYON 2 | 2025 | 517 | 2011 | 39 | 2.14+7 | 5.47+6 | 1.49+6 | 1.85+6 | 3.34+5 | 6.75+4 | 2.33+7 | 5.80+6 | 1.56+6 |
| | DRESDEN 1 | 1984 | 0 | | | | | | | | | 0.00+0 | | |
| | DRESDEN 2 | 2008 | 1015 | 1998 | 39 | 1.84+7 | 8.87+6 | 4.42+6 | 1.22+6 | 4.54+5 | 1.80+5 | 1.96+7 | 9.32+6 | 4.60+6 |
| | DRESDEN 3 | 2006 | 693 | 2000 | 39 | 1.84+7 | 8.05+6 | 3.65+6 | 9.78+5 | 3.45+5 | 1.29+5 | 1.94+7 | 8.40+6 | 3.78+6 |
| | DUANE ARNOLD | 2010 | 998 | 1999 | 39 | 1.84+7 | 8.45+6 | 4.01+6 | 1.34+6 | 4.65+5 | 1.73+5 | 1.97+7 | 8.92+6 | 4.18+6 |
| | ENRICO FERMI 2 | 2025 | 5355 | 1997 | 43 | 7.36+7 | 3.72+7 | 1.94+7 | 5.46+6 | 1.47+6 | 4.78+5 | 7.91+7 | 3.87+7 | 1.99+7 |
| | FARLEY 1 | 2012 | 298 | 2006 | 39 | 1.84+7 | 6.00+6 | 2.66+6 | 7.33+5 | 2.02+5 | 5.94+4 | 1.91+7 | 6.20+6 | 2.12+6 |
| | FARLEY 2 | 2012 | 140 | 2008 | 39 | 1.84+7 | 5.45+6 | 1.70+6 | 4.89+5 | 1.28+5 | 3.58+4 | 1.89+7 | 5.58+6 | 1.74+6 |
| | FITZPATRICK | 2015 | 2246 | 1997 | 40 | 3.37+7 | 1.70+7 | 8.88+6 | 2.67+6 | 8.74+5 | 3.20+5 | 3.64+7 | 1.79+7 | 9.20+6 |
| | FORT CALHOUN | 2008 | 413 | 1994 | 39 | 1.84+7 | 1.08+7 | 6.46+6 | 1.34+6 | 5.94+5 | 2.78+5 | 1.97+7 | 1.14+7 | 6.74+6 |
| | FT ST VRAIN | 2007 | | | | | | | | | | 0.00+0 | | |
| | GINNA | 2006 | 219 | 2000 | 39 | 1.84+7 | 8.05+6 | 3.65+6 | 7.33+5 | 2.71+5 | 1.05+5 | 1.91+7 | 8.32+6 | 3.76+6 |
| | GRAND GULF 1 | 2022 | 4392 | 1998 | 42 | 5.94+7 | 2.86+7 | 1.42+7 | 3.75+6 | 1.04+6 | 3.36+5 | 6.32+7 | 2.96+7 | 1.45+7 |
| | HADDAM NECK | 2007 | 319 | 1997 | 39 | 1.84+7 | 9.31+6 | 4.86+6 | 1.22+6 | 4.77+5 | 1.98+5 | 1.96+7 | 9.79+6 | 5.06+6 |
| | HARRIS 1 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | | |
| | | | - | - | | | | | | | | 0.00+0 | | |

TABLE A5a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - CASK OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| B | HATCH 1 | 2009 | 2874 | 2000 | 41 | 4.13+7 | 1.80+7 | 8.17+6 | 1.32+6 | 4.54+5 | 1.67+5 | 4.26+7 | 1.85+7 | 8.34+6 |
| B | HATCH 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| | HOPE CREEK | 2026 | 2820 | 2007 | 41 | 4.08+7 | 1.28+7 | 4.14+6 | 2.78+6 | 5.49+5 | 1.24+5 | 4.36+7 | 1.31+7 | 4.26+6 |
| | HUMBOLDT BAY | 1976 | 0 | - | | | | | | | | 0.00+0 | | |
| | INDIAN PT 1 | 1980 | 0 | - | | | | | | | | 0.00+0 | | |
| | INDIAN PT 2 | 2008 | 493 | 1994 | 39 | 2.04+7 | 1.19+7 | 7.15+6 | 1.55+6 | 6.69+5 | 3.08+5 | 2.20+7 | 1.26+7 | 7.46+6 |
| | INDIAN PT 3 | 2015 | 538 | 2004 | 39 | 2.21+7 | 7.93+6 | 2.99+6 | 1.47+6 | 4.00+5 | 1.18+5 | 2.36+7 | 8.33+6 | 3.11+6 |
| | KEWAUNEE | 2014 | 579 | 1999 | 39 | 2.00+7 | 9.17+6 | 4.36+6 | 1.92+6 | 6.08+5 | 2.12+5 | 2.19+7 | 9.78+6 | 4.57+6 |
| | LACROSSE | 2002 | 205 | 1992 | 39 | 1.84+7 | 1.19+7 | 7.82+6 | 1.22+6 | 6.08+5 | 3.18+5 | 1.96+7 | 1.25+7 | 8.14+6 |
| B | LASALLE CTY 1 | 2022 | 9824 | 1990 | 48 | 1.39+8 | 9.85+7 | 7.11+7 | 1.23+7 | 4.33+6 | 1.89+6 | 1.51+8 | 1.03+8 | 7.30+7 |
| B | LASALLE CTY 2 | 2023 | (a) | | | | | | | | | 0.00+0 | | |
| | LIMERICK 1 | 2024 | 4096 | 1995 | 42 | 5.66+7 | 3.15+7 | 1.80+7 | 4.40+6 | 1.28+6 | 4.53+5 | 6.10+7 | 3.28+7 | 1.85+7 |
| | LIMERICK 2 | 2029 | 4238 | 1998 | 42 | 5.80+7 | 2.79+7 | 1.39+7 | 4.77+6 | 1.15+6 | 3.49+5 | 6.28+7 | 2.91+7 | 1.42+7 |
| | MAINE YANKEE | 2008 | 632 | 1998 | 39 | 2.10+7 | 1.11+7 | 6.09+6 | 1.57+6 | 6.16+5 | 2.59+5 | 2.26+7 | 1.17+7 | 6.35+6 |
| | MCGUIRE 1 | 2021 | 965 | 2005 | 40 | 3.58+7 | 1.22+7 | 4.40+6 | 2.37+6 | 5.48+5 | 1.42+5 | 3.82+7 | 1.27+7 | 4.54+6 |
| | MCGUIRE 2 | 2023 | 989 | 2006 | 40 | 3.66+7 | 1.19+7 | 4.08+6 | 2.51+6 | 5.43+5 | 1.32+5 | 3.91+7 | 1.24+7 | 4.21+6 |
| | MILLSTONE 1 | 2010 | 2480 | 1997 | 40 | 3.55+7 | 2.92+7 | 2.43+7 | 3.40+6 | 1.64+6 | 8.98+5 | 3.89+7 | 3.08+7 | 2.52+7 |
| | MILLSTONE 2 | 2015 | 823 | 1997 | 40 | 2.83+7 | 1.43+7 | 7.46+6 | 2.62+6 | 8.59+5 | 3.14+5 | 3.09+7 | 1.52+7 | 7.77+6 |
| | MILLSTONE 3 | 2025 | 541 | 2016 | 39 | 2.23+7 | 4.45+6 | 9.59+5 | 1.21+6 | 1.91+5 | 3.34+4 | 2.35+7 | 4.64+6 | 9.92+5 |
| | MONTICELLO | 2007 | 355 | 2004 | 39 | 1.84+7 | 6.62+6 | 2.49+6 | 3.67+5 | 1.19+5 | 4.11+4 | 1.88+7 | 6.74+6 | 2.53+6 |
| | NINE MILE PT 1 | 2005 | 884 | 1998 | 39 | 1.84+7 | 9.78+6 | 5.34+6 | 1.10+6 | 4.61+5 | 2.04+5 | 1.95+7 | 1.02+7 | 5.54+6 |
| | NINE MILE PT 2 | 2026 | 1971 | 2011 | 40 | 3.02+7 | 7.71+6 | 2.10+6 | 2.21+6 | 3.89+5 | 7.75+4 | 3.24+7 | 8.10+6 | 2.18+6 |
| A | NORTH ANNA 1 | 2018 | 1868 | 1999 | 43 | 6.64+7 | 3.04+7 | 1.45+7 | 3.27+6 | 9.54+5 | 3.14+5 | 6.97+7 | 3.14+7 | 1.48+7 |
| A | NORTH ANNA 2 | 2020 | (a) | | | | | | | | | 0.00+0 | | |
| A | OCONEE 1 | 2013 | 2102 | 1989 | 43 | 7.30+7 | 5.45+7 | 4.12+7 | 4.63+6 | 1.99+6 | 9.78+5 | 7.76+7 | 5.65+7 | 4.22+7 |
| A | OCONEE 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| | OCONEE 3 | 2014 | 1021 | 1991 | 40 | 3.77+7 | 2.55+7 | 1.76+7 | 3.39+6 | 1.35+6 | 8.11+5 | 4.11+7 | 2.69+7 | 1.82+7 |
| | OYSTER CRK 1 | 2004 | 912 | 1994 | 39 | 1.84+7 | 1.08+7 | 6.46+6 | 1.22+6 | 5.52+5 | 2.63+5 | 1.96+7 | 1.14+7 | 6.72+6 |
| | PALISADES | 2011 | 835 | 1988 | 39 | 2.79+7 | 2.19+7 | 1.73+7 | 3.33+6 | 1.53+6 | 8.00+5 | 3.12+7 | 2.34+7 | 1.81+7 |
| | PALO VERDE 1 | 2024 | 1117 | 2005 | 40 | 3.67+7 | 1.26+7 | 4.51+6 | 2.81+6 | 6.11+5 | 1.52+5 | 3.95+7 | 1.32+7 | 4.66+6 |
| | PALO VERDE 2 | 2025 | 1121 | 2006 | 40 | 3.68+7 | 1.20+7 | 4.11+6 | 2.81+6 | 5.81+5 | 1.38+5 | 3.96+7 | 1.26+7 | 4.25+6 |
| | PALO VERDE 3 | 2026 | 1121 | 2007 | 40 | 3.68+7 | 1.14+7 | 3.74+6 | 2.81+6 | 5.54+5 | 1.25+5 | 3.96+7 | 1.20+7 | 3.87+6 |
| | PEACHBOTTOM 2 | 2008 | 1812 | 1997 | 39 | 2.82+7 | 1.43+7 | 7.43+6 | 1.60+6 | 6.10+5 | 2.49+5 | 2.98+7 | 1.49+7 | 7.68+6 |
| | PEACHBOTTOM 3 | 2008 | 1589 | 1997 | 39 | 2.53+7 | 1.28+7 | 6.67+6 | 1.55+6 | 5.93+5 | 2.42+5 | 2.69+7 | 1.34+7 | 6.91+6 |
| | PERRY 1 | 2026 | 2548 | 2009 | 40 | 3.76+7 | 1.05+7 | 3.14+6 | 2.51+6 | 4.68+5 | 9.93+4 | 4.00+7 | 1.10+7 | 3.24+6 |
| | PILGRIM 1 | 2008 | 1512 | 1993 | 39 | 2.37+7 | 1.45+7 | 9.13+6 | 2.07+6 | 8.79+5 | 4.05+5 | 2.58+7 | 1.54+7 | 9.54+6 |
| A | POINT BEACH 1 | 2007 | 849 | 1995 | 39 | 2.76+7 | 1.64+7 | 8.79+6 | 1.74+6 | 7.14+5 | 3.14+5 | 2.93+7 | 1.61+7 | 9.10+6 |
| A | POINT BEACH 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| A | PRAIRIE ISL 1 | 2008 | 1142 | 1993 | 40 | 3.39+7 | 2.08+7 | 1.31+7 | 2.22+6 | 9.44+5 | 4.34+5 | 3.61+7 | 2.17+7 | 1.35+7 |
| A | PRAIRIE ISL 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| B | QUAD CITIES 1 | 2007 | 503 | 2005 | 39 | 1.84+7 | 6.30+6 | 2.27+6 | 2.44+5 | 7.77+4 | 2.61+4 | 1.86+7 | 6.38+6 | 2.30+6 |
| B | QUAD CITIES 2 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| | RANCHO SECO 1 | 2008 | 226 | 2004 | 39 | 1.84+7 | 6.62+6 | 2.49+6 | 4.89+5 | 1.58+5 | 5.24+4 | 1.89+7 | 6.78+6 | 2.54+6 |
| | ROBINSON 2 | 2007 | 668 | 1990 | 39 | 2.46+7 | 1.75+7 | 1.26+7 | 2.38+6 | 1.12+6 | 5.76+5 | 2.70+7 | 1.86+7 | 1.32+7 |
| | RVR BEND 1 | 2025 | 2452 | 2007 | 40 | 3.65+7 | 1.13+7 | 3.71+6 | 2.66+6 | 5.38+5 | 1.23+5 | 3.92+7 | 1.18+7 | 3.83+6 |
| | SALEM 1 | 2016 | 1007 | 1997 | 40 | 3.71+7 | 1.87+7 | 9.77+6 | 2.81+6 | 9.01+5 | 3.25+5 | 3.99+7 | 1.96+7 | 1.01+7 |
| | SALEM 2 | 2020 | 1168 | 2001 | 41 | 4.18+7 | 1.74+7 | 7.52+6 | 2.78+6 | 7.34+5 | 2.20+5 | 4.46+7 | 1.81+7 | 7.74+6 |

TABLE A5a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - CASK OPTION (1988 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O $ M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 2362 | 1995 | 43 | 6.51+7 | 3.63+7 | 2.07+7 | 6.75+5 | 3.33+5 | 1.70+5 | 6.58+7 | 3.66+7 | 2.09+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| E | SAN ONOFRE 3 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| | SEABROOK 1 | 2031 | 1261 | 2008 | 41 | 4.47+7 | 1.32+7 | 4.13+6 | 3.35+6 | 5.79+5 | 1.19+5 | 4.80+7 | 1.38+7 | 4.25+6 |
| A | SEQUOYAH 1 | 2021 | 2686 | 1995 | 45 | 9.53+7 | 5.31+7 | 3.04+7 | 7.43+6 | 2.29+6 | 8.34+5 | 1.03+8 | 5.54+7 | 3.12+7 |
| A | SEQUOYAH 2 | 2022 | (a) | | | | | | | | | 0.00+0 | | |
| | SHOREHAM | 2027 | 2635 | 2006 | 40 | 3.81+7 | 1.24+7 | 4.26+6 | 3.10+6 | 6.15+5 | 1.42+5 | 4.12+7 | 1.30+7 | 4.40+6 |
| | SOUTH TEXAS 1 | 2027 | 258 | 2023 | 39 | 1.84+7 | 2.62+6 | 4.07+5 | 4.89+5 | 6.16+4 | 8.56+3 | 1.89+7 | 2.68+6 | 4.16+5 |
| | SOUTH TEXAS 2 | 2028 | 258 | 2024 | 39 | 1.84+7 | 2.49+6 | 3.70+5 | 4.89+5 | 5.86+4 | 7.78+3 | 1.89+7 | 2.55+6 | 3.78+5 |
| | ST LUCIE 1 | 2016 | 1182 | 1987 | 40 | 3.56+7 | 2.93+7 | 2.43+7 | 3.40+6 | 1.64+6 | 8.98+5 | 3.90+7 | 3.09+7 | 2.52+7 |
| | ST LUCIE 2 | 2023 | 1126 | 2001 | 40 | 3.42+7 | 1.42+7 | 6.15+6 | 3.26+6 | 8.10+5 | 2.34+5 | 3.75+7 | 1.50+7 | 6.38+6 |
| | SUMMER 1 | 2024 | 761 | 2008 | 40 | 2.94+7 | 8.68+6 | 2.71+6 | 2.34+6 | 4.69+5 | 1.06+5 | 3.17+7 | 9.15+6 | 2.82+6 |
| A | SURRY 1 | 2012 | 97 | 2012 | 39 | 1.84+7 | 4.48+6 | 1.16+6 | 0.00+0 | 0.00+0 | 0.00+0 | 1.84+7 | 4.48+6 | 1.16+6 |
| A | SURRY 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| B | SUSQUEHANNA 1 | 2022 | 7288 | 2000 | 45 | 1.02+8 | 4.43+7 | 2.01+7 | 6.90+6 | 1.80+6 | 5.44+5 | 1.09+8 | 4.61+7 | 2.06+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | | | | | | | | | 0.00+0 | | |
| | THREE MILE ISL 1 | 2008 | 76 | 2006 | 39 | 1.84+7 | 6.00+6 | 2.06+6 | 2.44+5 | 7.40+4 | 2.37+4 | 1.86+7 | 6.07+6 | 2.08+6 |
| | TROJAN | 2011 | 373 | 2004 | 39 | 1.84+7 | 6.62+6 | 2.49+6 | 8.56+5 | 2.54+5 | 8.04+4 | 1.93+7 | 6.87+6 | 2.57+6 |
| E | TURKEY PT 3 | 2007 | 384 | 2002 | 39 | 1.84+7 | 7.30+6 | 3.02+6 | 6.11+5 | 2.09+5 | 7.58+4 | 1.90+7 | 7.51+6 | 3.10+6 |
| E | TURKEY PT 4 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| B | VOGTLE 1 | 2027 | 2495 | 2006 | 44 | 8.78+7 | 2.86+7 | 9.81+6 | 5.30+6 | 1.05+6 | 2.44+5 | 9.31+7 | 2.96+7 | 1.01+7 |
| B | VOGTLE 2 | 2028 | (a) | | | | | | | | | 0.00+0 | | |
| | VT YANKEE 1 | 2012 | 1068 | 1999 | 39 | 1.84+7 | 8.45+6 | 4.01+6 | 1.59+6 | 5.26+5 | 1.89+5 | 2.00+7 | 8.98+6 | 4.20+6 |
| | WASH NUCLEAR 2 | 2023 | 4018 | 1998 | 42 | 5.52+7 | 2.65+7 | 1.32+7 | 3.75+6 | 1.02+6 | 3.26+5 | 5.90+7 | 2.75+7 | 1.35+7 |
| | WATERFORD 3 | 2024 | 1143 | 2006 | 40 | 3.74+7 | 1.22+7 | 4.18+6 | 2.66+6 | 5.62+5 | 1.35+5 | 4.01+7 | 1.28+7 | 4.32+6 |
| A | WATTS BAR 1 | 2025 | 2691 | 2001 | 45 | 9.57+7 | 3.98+7 | 1.72+7 | 6.90+6 | 1.65+6 | 4.65+5 | 1.03+8 | 4.15+7 | 1.77+7 |
| A | WATTS BAR 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| | WOLF CREEK 1 | 2025 | 857 | 2008 | 40 | 3.25+7 | 9.61+6 | 3.00+6 | 2.52+6 | 4.93+5 | 1.10+5 | 3.50+7 | 1.01+7 | 3.11+6 |
| | YANKEE-ROWE 1 | 2001 | 36 | 1999 | 39 | 1.84+7 | 8.45+6 | 4.01+6 | 2.44+5 | 1.04+5 | 4.62+4 | 1.86+7 | 8.55+6 | 4.06+6 |
| A | ZION 1 | 2008 | 1295 | 1995 | 41 | 4.58+7 | 2.55+7 | 1.46+7 | 1.89+6 | 7.60+5 | 3.29+5 | 4.77+7 | 2.63+7 | 1.49+7 |
| A | ZION 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| | TOTAL | | | | | 3.68+9 | 1.72+9 | 9.09+8 | 2.49+8 | 7.44+7 | 2.75+7 | 3.93+9 | 1.79+9 | 9.37+8 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A5b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - CASK OPTION
(1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 3172 | 1989 | 45 | 8.97+7 | 8.69+7 | 5.06+7 | 2.61+6 | 1.50+6 | 9.04+5 | 9.23+7 | 8.84+7 | 5.15+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | 1989 | | | | | | | | | | |
| E | SAN ONOFRE 3 | 2013 | (a) | 1989 | | | | | | | | | | |
| | SEABROOK 1 | 2031 | 1645 | 2000 | 42 | 5.68+7 | 2.48+7 | 1.12+7 | 4.71+6 | 1.03+6 | 2.85+5 | 6.15+7 | 2.58+7 | 1.15+7 |
| A | SEQUOYAH 1 | 2021 | 3400 | 1989 | 47 | 1.23+8 | 9.20+7 | 6.96+7 | 1.26+7 | 4.83+6 | 2.11+6 | 1.36+8 | 9.66+7 | 7.17+7 |
| A | SEQUOYAH 2 | 2022 | (a) | 1989 | | | | | | | | | | |
| | SHOREHAM | 2027 | 3371 | 2000 | 41 | 4.69+7 | 2.05+7 | 9.27+6 | 3.92+6 | 9.29+5 | 2.68+5 | 5.08+7 | 2.14+7 | 9.54+6 |
| | SOUTH TEXAS 1 | 2027 | 570 | 2017 | 39 | 2.67+7 | 5.08+6 | 1.04+6 | 1.43+6 | 2.11+5 | 3.45+4 | 2.81+7 | 5.29+6 | 1.07+6 |
| | SOUTH TEXAS 2 | 2028 | 570 | 2018 | 39 | 2.65+7 | 4.80+6 | 9.42+5 | 1.43+6 | 2.00+5 | 3.13+4 | 2.79+7 | 5.00+6 | 9.73+5 |
| | ST LUCIE 1 | 2010 | 1638 | (b) | 41 | 4.67+7 | 3.66+7 | 2.90+7 | 3.20+6 | 1.50+6 | 7.92+5 | 4.99+7 | 3.81+7 | 2.98+7 |
| | ST LUCIE 2 | 2023 | 1558 | 1992 | 41 | 4.47+7 | 2.88+7 | 1.90+7 | 4.51+6 | 1.46+6 | 5.85+5 | 4.92+7 | 3.03+7 | 1.96+7 |
| | SUMMER 1 | 2024 | 1169 | 1999 | 41 | 4.18+7 | 1.91+7 | 9.09+6 | 3.85+6 | 9.44+5 | 2.89+5 | 4.55+7 | 2.00+7 | 9.38+6 |
| A | SURRY 1 | 2012 | 574 | 2005 | 39 | 2.33+7 | 7.96+6 | 2.86+6 | 9.60+5 | 2.71+5 | 8.20+4 | 2.43+7 | 8.23+6 | 2.94+6 |
| A | SURRY 2 | 2013 | (a) | 2005 | | | | | | | | | | |
| B | SUSQUEHANNA 1 | 2022 | 8680 | 1995 | 47 | 1.22+8 | 8.82+7 | 3.90+7 | 1.05+7 | 3.19+6 | 1.15+6 | 1.33+8 | 7.14+7 | 4.02+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | 1995 | | | | | | | | | | |
| | THREE MILE ISL 1 | 2008 | 513 | 1997 | 39 | 2.14+7 | 1.08+7 | 5.63+6 | 1.45+6 | 5.54+5 | 2.26+5 | 2.29+7 | 1.14+7 | 5.86+6 |
| | TROJAN | 2011 | 661 | 1998 | 39 | 2.63+7 | 1.27+7 | 6.30+6 | 1.86+6 | 6.46+5 | 2.43+5 | 2.82+7 | 1.33+7 | 6.54+6 |
| E | TURKEY PT 3 | 2007 | 816 | 1995 | 40 | 3.11+7 | 1.73+7 | 9.92+6 | 1.77+6 | 7.28+5 | 3.20+5 | 3.29+7 | 1.80+7 | 1.02+7 |
| E | TURKEY PT 4 | 2007 | (a) | 1995 | | | | | | | | | | |
| B | VOGTLE 1 | 2027 | 3251 | 2000 | 48 | 1.18+8 | 5.14+7 | 2.33+7 | 1.02+7 | 2.42+6 | 6.91+5 | 1.28+8 | 5.38+7 | 2.40+7 |
| B | VOGTLE 2 | 2028 | (a) | 2000 | | | | | | | | | | |
| | VT YANKEE 1 | 2012 | 1598 | 1993 | 39 | 2.56+7 | 1.57+7 | 9.87+6 | 2.69+6 | 1.05+6 | 4.67+5 | 2.83+7 | 1.68+7 | 1.03+7 |
| | WASH NUCLEAR 2 | 2023 | 4842 | 1994 | 43 | 6.35+7 | 3.71+7 | 2.22+7 | 4.78+6 | 1.46+6 | 5.41+5 | 6.83+7 | 3.86+7 | 2.27+7 |
| | WATERFORD 3 | 2024 | 1671 | 1997 | 42 | 5.17+7 | 2.61+7 | 1.36+7 | 3.97+6 | 1.09+6 | 3.57+5 | 5.57+7 | 2.72+7 | 1.40+7 |
| A | WATTS BAR 1 | 2025 | 3411 | 1994 | 47 | 1.24+8 | 7.23+7 | 4.34+7 | 1.22+7 | 3.59+6 | 1.31+6 | 1.36+8 | 7.59+7 | 4.47+7 |
| A | WATTS BAR 2 | 2027 | (a) | 1994 | | | | | | | | | | |
| | WOLF CREEK 1 | 2025 | 1313 | 1999 | 41 | 4.63+7 | 2.12+7 | 1.01+7 | 3.78+6 | 9.57+5 | 2.90+5 | 5.01+7 | 2.22+7 | 1.04+7 |
| | YANKEE-ROWE 1 | 2001 | 264 | 1990 | 39 | 1.84+7 | 1.31+7 | 9.46+6 | 1.34+6 | 7.21+5 | 4.07+5 | 1.97+7 | 1.38+7 | 9.87+6 |
| A | ZION 1 | 2008 | 1943 | 1988 | 43 | 8.69+7 | 5.24+7 | 4.15+7 | 3.47+6 | 1.70+6 | 9.18+5 | 7.04+7 | 5.41+7 | 4.24+7 |
| A | ZION 2 | 2008 | (a) | 1988 | | | | | | | | | | |
| | TOTAL | | | | | 4.79+9 | 2.92+9 | 1.94+9 | 3.76+8 | 1.31+8 | 5.67+7 | 5.17+9 | 3.05+9 | 2.00+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1.
(b) NEED ADDITIONAL SPACE AS OF 1986.

TABLE A6. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - SILO STORAGE OPTION(1983 DOLLARS)

| | PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | P | 120 | 3.03+7 | 1.47+7 | 7.58+6 | 5.42+5 | 4.68+7 | 3.10+7 | 2.23+7 | 1.70+7 | 1.69+7 | 1.52+7 |
| | ARK NUCLEAR 2 | P | 136 | 3.39+7 | 1.41+7 | 6.28+6 | 5.54+5 | 5.33+7 | 3.27+7 | 2.22+7 | 2.00+7 | 1.91+7 | 1.64+7 |
| | BEAVER VALLEY 1 | P | 138 | 4.97+7 | 2.24+7 | 1.11+7 | 6.21+5 | 6.91+7 | 4.26+7 | 2.98+7 | 2.00+7 | 2.00+7 | 1.93+7 |
| | BEAVER VALLEY 2 | P | 146 | 4.66+7 | 1.15+7 | 3.17+6 | 6.47+5 | 6.73+7 | 2.38+7 | 9.65+6 | 2.13+7 | 1.29+7 | 7.12+6 |
| | BELLEFONTE 1 | P | 168 | 7.70+7 | 1.91+7 | 5.31+6 | 7.34+5 | 1.04+8 | 3.72+7 | 1.53+7 | 2.77+7 | 1.68+7 | 1.08+7 |
| | BELLEFONTE 2 | P | 168 | 7.70+7 | 1.74+7 | 4.39+6 | 7.34+5 | 1.04+8 | 3.37+7 | 1.27+7 | 2.77+7 | 1.71+7 | 9.02+6 |
| | BIG ROCK 1 | B | 48 | 2.55+7 | 1.38+7 | 7.70+6 | 6.56+4 | 2.79+7 | 1.70+7 | 1.07+7 | 2.49+6 | 3.29+6 | 3.10+6 |
| A | BRAIDWOOD 1 | P | 252 | 1.37+8 | 5.95+7 | 2.96+7 | 1.03+6 | 1.82+8 | 9.59+7 | 5.96+7 | 4.52+7 | 3.74+7 | 3.10+7 |
| A | BRAIDWOOD 2 | P | (a) | | | | | | | | | | |
| B | BROWNS FERRY 1 | B | 684 | 5.17+7 | 1.91+7 | 7.53+6 | 1.32+6 | 7.18+7 | 3.14+7 | 1.47+7 | 2.14+7 | 1.36+7 | 8.48+6 |
| B | BROWNS FERRY 2 | B | (a) | | | | | | | | | | |
| | BROWNS FERRY 3 | B | 456 | 4.84+7 | 1.80+7 | 7.21+6 | 9.02+5 | 6.41+7 | 3.02+7 | 1.58+7 | 1.66+7 | 1.32+7 | 9.49+6 |
| | BRUNSWICK 1 | B | 376 | 5.21+7 | 3.16+7 | 2.08+7 | 7.59+5 | 6.20+7 | 4.08+7 | 2.92+7 | 1.07+7 | 9.92+6 | 9.16+6 |
| | | P | | 0.00+0 | | | | | | | | | |
| | BRUNSWICK 2 | B | 376 | 4.97+7 | 2.91+7 | 1.83+7 | 7.52+5 | 6.03+7 | 3.97+7 | 2.84+7 | 1.14+7 | 1.14+7 | 1.09+7 |
| | | P | | 0.00+0 | | | | | | | | | |
| A | BYRON 1 | P | 264 | 1.37+8 | 6.57+7 | 3.58+7 | 1.07+6 | 1.82+8 | 9.90+7 | 6.20+7 | 4.55+7 | 3.44+7 | 2.73+7 |
| A | BYRON 2 | P | (a) | | | | | | | | | | |
| | CALLAWAY 1 | P | 168 | 5.40+7 | 1.60+7 | 5.29+6 | 7.13+5 | 7.82+7 | 3.32+7 | 1.62+7 | 2.49+7 | 1.79+7 | 1.16+7 |
| B | CALVERT CLF 1 | P | 192 | 8.00+7 | 4.45+7 | 2.69+7 | 7.16+5 | 1.00+8 | 6.28+7 | 4.31+7 | 2.05+7 | 1.90+7 | 1.69+7 |
| B | CALVERT CLF 2 | P | (a) | | | | | | | | | | |
| | CATAWBA 1 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 6.42+5 | 2.38+7 | 3.68+6 | 6.21+5 | 2.45+7 | 4.32+6 | 1.26+6 |
| | CATAWBA 2 | P | 144 | 0.00+0 | 0.00+0 | 0.00+0 | 5.94+5 | 2.30+7 | 3.24+6 | 5.00+5 | 2.36+7 | 3.84+6 | 1.09+6 |
| | CLINTON 1 | B | 344 | 5.46+7 | 1.51+7 | 4.69+6 | 6.96+5 | 6.84+7 | 2.39+7 | 9.68+6 | 1.45+7 | 9.53+6 | 5.69+6 |
| B | COMANCHE PK 1 | P | 198 | 7.75+7 | 1.50+7 | 3.20+6 | 8.76+5 | 1.00+8 | 2.38+7 | 6.34+6 | 2.36+7 | 9.70+6 | 4.02+6 |
| B | COMANCHE PK 2 | P | (a) | | | | | | | | | | |
| A | COOK 1 | P | 256 | 4.92+7 | 2.23+7 | 1.08+7 | 1.12+6 | 7.93+7 | 4.79+7 | 3.09+7 | 3.12+7 | 2.67+7 | 2.14+7 |
| A | COOK 2 | P | (a) | | | | | | | | | | |
| | COOPER STN | B | 232 | 3.17+7 | 1.49+7 | 7.33+6 | 4.90+5 | 4.06+7 | 2.23+7 | 1.30+7 | 9.42+6 | 7.90+6 | 6.11+6 |
| | CRYSTAL RVR 3 | P | 72 | 2.96+7 | 9.36+6 | 3.19+6 | 3.34+5 | 4.17+7 | 1.67+7 | 7.25+6 | 1.24+7 | 7.66+6 | 4.40+6 |
| | DAVIS-BESSE 1 | P | 120 | 9.98+7 | 4.84+7 | 2.56+7 | 5.48+5 | 1.20+8 | 7.24+7 | 4.84+7 | 2.09+7 | 2.45+7 | 2.33+7 |
| | DIABLO CANYON 1 | P | 85 | 3.49+7 | 8.01+6 | 2.02+6 | 3.89+5 | 4.66+7 | 1.30+7 | 4.06+6 | 1.21+7 | 5.40+6 | 2.43+6 |
| | DIABLO CANYON 2 | P | 85 | 3.49+7 | 8.01+6 | 2.02+6 | 3.89+5 | 4.66+7 | 1.30+7 | 4.06+6 | 1.21+7 | 5.40+6 | 2.43+6 |
| | DRESDEN 1 | B | | 0.00+0 | | | | | | | | | |
| | DRESDEN 2 | B | 316 | 2.87+7 | 1.29+7 | 6.13+6 | 6.12+5 | 3.98+7 | 2.26+7 | 1.37+7 | 1.17+7 | 1.03+7 | 8.21+6 |
| | DRESDEN 3 | B | 316 | 2.71+7 | 1.13+7 | 4.93+6 | 6.12+5 | 3.42+7 | 1.80+7 | 1.00+7 | 7.74+6 | 7.35+6 | 5.70+6 |
| | DUANE ARNOLD | B | 256 | 2.95+7 | 1.25+7 | 5.63+6 | 5.30+5 | 4.19+7 | 2.41+7 | 1.50+7 | 1.29+7 | 1.21+7 | 9.93+6 |
| | ENRICO FERMI 2 | B | 552 | 9.70+7 | 3.99+7 | 1.88+7 | 1.08+6 | 1.20+8 | 6.57+7 | 4.24+7 | 2.40+7 | 2.69+7 | 2.47+7 |
| | FARLEY 1 | P | 136 | 2.55+7 | 8.06+6 | 2.70+6 | 6.13+5 | 4.13+7 | 1.87+7 | 9.05+6 | 1.65+7 | 1.12+7 | 6.96+6 |
| | FARLEY 2 | P | 136 | 2.38+7 | 6.95+6 | 2.15+6 | 6.13+5 | 3.52+7 | 1.47+7 | 6.53+6 | 1.20+7 | 8.38+6 | 5.00+6 |
| | FITZPATRICK | B | 360 | 4.86+7 | 2.14+7 | 1.02+7 | 7.30+5 | 6.20+7 | 3.46+7 | 2.15+7 | 1.41+7 | 1.40+7 | 1.20+7 |
| | FORT CALHOUN | P | 90 | 2.95+7 | 1.60+7 | 9.08+6 | 3.19+5 | 3.78+7 | 2.57+7 | 1.86+7 | 8.63+6 | 9.98+6 | 9.87+6 |
| | FT ST VRAIN | G | 240 | 0.00+0 | | | | | | | | | |
| | GINNA | P | 64 | 2.55+7 | 1.08+7 | 4.78+6 | 2.32+5 | 3.03+7 | 1.63+7 | 9.17+6 | 5.08+6 | 5.72+6 | 4.63+6 |
| | GRAND GULF 1 | B | 536 | 7.88+7 | 3.18+7 | 1.44+7 | 1.04+6 | 1.00+8 | 5.17+7 | 3.05+7 | 2.26+7 | 2.09+7 | 1.72+7 |
| | HADDAM NECK | P | 104 | 2.87+7 | 1.36+7 | 6.76+6 | 4.19+5 | 3.89+7 | 2.40+7 | 1.59+7 | 1.06+7 | 1.09+7 | 9.52+6 |
| | HARRIS 1 | P | 104 | 0.00+0 | | | 4.76+5 | | | | | | |
| | | B | | 0.00+0 | | | | | | | | | |

TABLE A8. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - SILO STORAGE OPTION(1983 DOLLARS) (cont'd)

| PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| B HATCH 1 | B | 588 | 4.52+7 | 1.89+7 | 8.26+6 | 1.14+6 | 6.19+7 | 3.06+7 | 1.59+7 | 1.79+7 | 1.29+7 | 8.76+6 |
| B HATCH 2 | B | (a) | | | | | | | | | | |
| HOPE CREEK | B | 484 | 5.52+7 | 1.49+7 | 4.48+6 | 9.22+5 | 7.27+7 | 2.49+7 | 9.73+6 | 1.84+7 | 1.09+7 | 6.17+6 |
| HUMBOLDT BAY | B | | 0.00+0 | | | | | | | | | |
| INDIAN PT 1 | P | | 0.00+0 | | | | | | | | | |
| INDIAN PT 2 | P | 138 | 3.23+7 | 1.73+7 | 9.77+6 | 6.01+5 | 4.85+7 | 3.31+7 | 2.41+7 | 1.68+7 | 1.64+7 | 1.49+7 |
| INDIAN PT 3 | P | 152 | 3.29+7 | 1.10+7 | 3.92+6 | 6.77+5 | 5.40+7 | 2.67+7 | 1.45+7 | 2.17+7 | 1.64+7 | 1.12+7 |
| KEWAUNEE | P | 74 | 3.44+7 | 1.40+7 | 6.14+6 | 2.84+5 | 4.56+7 | 2.33+7 | 1.32+7 | 1.15+7 | 9.61+6 | 7.34+6 |
| LACROSSE | B | 48 | 2.87+7 | 1.73+7 | 1.09+7 | 6.68+4 | 3.27+7 | 2.36+7 | 1.78+7 | 4.09+6 | 6.35+6 | 7.00+6 |
| B LASALLE CTY 1 | B | 660 | 1.68+8 | 9.24+7 | 5.83+7 | 1.27+6 | 1.81+8 | 9.97+7 | 6.23+7 | 1.43+7 | 8.57+6 | 5.27+6 |
| B LASALLE CTY 2 | B | (a) | | | | | | | | | | |
| LIMERICK 1 | B | 448 | 8.21+7 | 3.63+7 | 1.85+7 | 8.93+5 | 1.04+8 | 5.89+7 | 3.98+7 | 2.23+7 | 2.35+7 | 2.20+7 |
| LIMERICK 2 | B | 440 | 8.60+7 | 3.23+7 | 1.43+7 | 8.73+5 | 1.08+8 | 5.35+7 | 3.24+7 | 2.24+7 | 2.21+7 | 1.90+7 |
| MAINE YANKEE | P | 148 | 3.29+7 | 1.60+7 | 8.22+6 | 5.25+5 | 5.07+7 | 3.41+7 | 2.48+7 | 1.83+7 | 1.86+7 | 1.71+7 |
| MCGUIRE 1 | P | 144 | 4.83+7 | 1.47+7 | 4.91+6 | 6.42+5 | 6.83+7 | 2.87+7 | 1.35+7 | 2.06+7 | 1.46+7 | 9.20+6 |
| MCGUIRE 2 | P | 144 | 4.98+7 | 1.43+7 | 4.54+6 | 6.42+5 | 7.01+7 | 2.78+7 | 1.25+7 | 2.09+7 | 1.41+7 | 8.56+6 |
| MILLSTONE 1 | B | 196 | 5.51+7 | 3.63+7 | 2.61+7 | 4.05+5 | 5.79+7 | 3.81+7 | 2.73+7 | 3.21+6 | 2.21+6 | 1.58+6 |
| MILLSTONE 2 | P | 156 | 4.45+7 | 1.94+7 | 9.26+6 | 6.13+5 | 6.39+7 | 3.98+7 | 2.79+7 | 2.00+7 | 2.10+7 | 1.93+7 |
| MILLSTONE 3 | P | 168 | 3.13+7 | 5.93+6 | 1.23+6 | 7.45+5 | 5.21+7 | 1.41+7 | 4.28+6 | 2.15+7 | 8.95+6 | 3.79+6 |
| MONTICELLO | B | 240 | 2.30+7 | 8.20+6 | 3.06+6 | 4.89+5 | 2.79+7 | 1.27+7 | 6.05+6 | 5.34+6 | 4.98+6 | 3.48+6 |
| NINE MILE PT 1 | B | 184 | 2.79+7 | 1.40+7 | 7.33+6 | 3.80+5 | 3.45+7 | 2.18+7 | 1.45+7 | 7.01+6 | 8.24+6 | 7.54+6 |
| NINE MILE PT 2 | B | 276 | 4.31+7 | 9.84+6 | 2.49+6 | 5.71+5 | 5.23+7 | 1.40+7 | 4.21+6 | 9.77+6 | 4.75+6 | 2.29+6 |
| A NORTH ANNA 1 | P | 196 | 7.88+7 | 3.20+7 | 1.41+7 | 8.91+5 | 1.06+8 | 5.72+7 | 3.44+7 | 2.79+7 | 2.61+7 | 2.12+7 |
| A NORTH ANNA 2 | P | (a) | | | | | | | | | | |
| A OCONEE 1 | P | 180 | 9.10+7 | 5.75+7 | 3.97+7 | 8.01+5 | 1.07+8 | 6.74+7 | 4.69+7 | 1.72+7 | 1.07+7 | 8.95+6 |
| A OCONEE 2 | P | (a) | | | | | | | | | | |
| OCONEE 3 | P | 120 | 5.69+7 | 3.19+7 | 1.98+7 | 5.42+5 | 7.03+7 | 4.43+7 | 3.11+7 | 1.39+7 | 1.30+7 | 1.19+7 |
| OYSTER CRK 1 | B | 256 | 2.87+7 | 1.58+7 | 8.98+6 | 6.11+5 | 3.66+7 | 2.43+7 | 1.70+7 | 8.43+6 | 9.06+6 | 8.50+6 |
| PALISADES | P | 68 | 4.89+7 | 3.12+7 | 2.20+7 | 2.70+5 | 5.33+7 | 3.44+7 | 2.44+7 | 4.67+6 | 3.47+6 | 2.82+6 |
| PALO VERDE 1 | P | 170 | 5.20+7 | 1.54+7 | 5.06+6 | 6.74+5 | 7.45+7 | 3.16+7 | 1.54+7 | 2.32+7 | 1.68+7 | 1.10+7 |
| PALO VERDE 2 | P | 170 | 5.21+7 | 1.47+7 | 4.61+6 | 6.74+5 | 7.46+7 | 3.00+7 | 1.40+7 | 2.32+7 | 1.60+7 | 1.01+7 |
| PALO VERDE 3 | P | 170 | 5.21+7 | 1.39+7 | 4.19+6 | 6.74+5 | 7.46+7 | 2.86+7 | 1.28+7 | 2.32+7 | 1.54+7 | 9.25+6 |
| PEACHBOTTOM 2 | B | 456 | 3.78+7 | 1.78+7 | 8.82+6 | 9.02+5 | 5.21+7 | 3.12+7 | 1.99+7 | 1.52+7 | 1.43+7 | 1.20+7 |
| PEACHBOTTOM 3 | B | 440 | 3.56+7 | 1.68+7 | 8.28+6 | 8.73+5 | 4.96+7 | 2.96+7 | 1.89+7 | 1.49+7 | 1.38+7 | 1.15+7 |
| PERRY 1 | B | 448 | 5.05+7 | 1.26+7 | 3.47+6 | 8.93+5 | 6.85+7 | 2.11+7 | 7.54+6 | 1.69+7 | 9.44+6 | 4.96+6 |
| PILGRIM 1 | B | 192 | 3.79+7 | 2.07+7 | 1.20+7 | 3.97+5 | 4.66+7 | 3.09+7 | 2.21+7 | 9.10+6 | 1.08+7 | 1.05+7 |
| A POINT BEACH 1 | P | 98 | 3.82+7 | 1.97+7 | 1.06+7 | 3.64+5 | 4.86+7 | 3.05+7 | 2.03+7 | 1.08+7 | 1.12+7 | 1.01+7 |
| A POINT BEACH 2 | P | (a) | | | | | | | | | | |
| A PRAIRIE ISL 1 | P | 120 | 4.57+7 | 2.53+7 | 1.48+7 | 4.31+5 | 5.78+7 | 3.89+7 | 2.81+7 | 1.25+7 | 1.41+7 | 1.37+7 |
| A PRAIRIE ISL 2 | P | (a) | | | | | | | | | | |
| B QUAD CITIES 1 | B | 480 | 2.22+7 | 7.57+6 | 2.71+6 | 9.21+5 | 2.85+7 | 1.10+7 | 4.47+6 | 7.16+6 | 4.38+6 | 2.68+6 |
| B QUAD CITIES 2 | B | (a) | | | | | | | | | | |
| RANCHO SECO 1 | P | 138 | 2.38+7 | 8.44+6 | 3.14+6 | 6.19+5 | 4.05+7 | 2.31+7 | 1.48+7 | 1.73+7 | 1.52+7 | 1.15+7 |
| ROBINSON 2 | P | 98 | 4.05+7 | 2.51+7 | 1.66+7 | 4.00+5 | 4.91+7 | 3.31+7 | 2.39+7 | 9.00+6 | 8.37+6 | 7.79+6 |
| RVR BEND 1 | B | 384 | 5.08+7 | 1.38+7 | 4.15+6 | 7.81+5 | 6.53+7 | 2.25+7 | 8.78+6 | 1.53+7 | 9.49+6 | 5.42+6 |
| SALEM 1 | P | 160 | 5.23+7 | 2.28+7 | 1.09+7 | 7.11+5 | 7.48+7 | 4.50+7 | 3.04+7 | 2.30+7 | 2.29+7 | 2.02+7 |
| SALEM 2 | P | 168 | 5.62+7 | 2.03+7 | 8.08+6 | 7.45+5 | 8.17+7 | 4.23+7 | 2.50+7 | 2.82+7 | 2.27+7 | 1.77+7 |

TABLE A6. COST FOR THE ADDITIONAL STORAGE SPACE BEFORE AND AFTER CONVERSION TO LOW-DENSITY RACKS AND INCREMENTAL COST FOR ADDITIONAL STORAGE CAPACITY TO COMPENSATE FOR THE USE OF LOW-DENSITY RACKS FOR VARIOUS DISCOUNT RATES - SILO STORAGE OPTION(1983 DOLLARS)(cont'd)

| | PLANT NAME | TYPE | LOW DEN RACKS NEEDED | BEFORE CONVERSION | | | RERACKING | AFTER CONVERSION | | | INCREMENTAL COST | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0% | 5% | 10% | | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | P | 270 | 5.82+7 | 3.21+7 | 1.82+7 | 9.56+5 | 8.25+7 | 5.80+7 | 4.18+7 | 2.53+7 | 2.68+7 | 2.45+7 |
| E | SAN ONOFRE 2 | P | (a) | | | | | | | | | | |
| E | SAN ONOFRE 3 | P | (a) | | | | | | | | | | |
| | SEABROOK 1 | P | 128 | 6.31+7 | 1.56+7 | 4.41+6 | 5.74+5 | 8.46+7 | 2.88+7 | 1.16+7 | 2.21+7 | 1.37+7 | 7.74+6 |
| A | SEQUOYAH 1 | P | 240 | 1.10+8 | 5.14+7 | 2.70+7 | 1.06+6 | 1.43+8 | 8.18+7 | 5.29+7 | 3.49+7 | 3.15+7 | 2.70+7 |
| A | SEQUOYAH 2 | P | (a) | | | | | | | | | | |
| | SHOREHAM | B | 368 | 5.52+7 | 1.52+7 | 4.74+6 | 7.38+5 | 6.96+7 | 2.44+7 | 9.87+6 | 1.51+7 | 9.93+6 | 5.87+6 |
| | SOUTH TEXAS 1 | P | 104 | 2.38+7 | 3.34+6 | 5.13+5 | 5.51+5 | 3.57+7 | 6.38+6 | 1.26+6 | 1.24+7 | 3.59+6 | 1.29+6 |
| | SOUTH TEXAS 2 | P | 104 | 2.38+7 | 3.18+6 | 4.87+5 | 5.46+5 | 3.55+7 | 6.06+6 | 1.14+6 | 1.22+7 | 3.43+6 | 1.22+6 |
| | ST LUCIE 1 | P | 152 | 5.51+7 | 3.64+7 | 2.62+7 | 5.52+5 | 6.39+7 | 4.20+7 | 3.00+7 | 9.35+6 | 6.15+6 | 4.35+6 |
| | ST LUCIE 2 | P | 144 | 5.30+7 | 1.84+7 | 7.16+6 | 5.25+5 | 7.18+7 | 3.55+7 | 2.06+7 | 1.93+7 | 1.77+7 | 1.39+7 |
| | SUMMER 1 | P | 136 | 4.34+7 | 1.14+7 | 3.28+6 | 6.05+5 | 6.25+7 | 2.33+7 | 9.94+6 | 1.97+7 | 1.26+7 | 7.26+6 |
| A | SURRY 1 | P | 159 | 2.06+7 | 5.02+6 | 1.30+6 | 7.03+5 | 3.04+7 | 1.00+7 | 3.50+6 | 1.05+7 | 5.70+6 | 2.90+6 |
| A | SURRY 2 | P | (a) | | | | | | | | | | |
| B | SUSQUEHANNA 1 | B | 696 | 1.08+8 | 4.11+7 | 1.74+7 | 1.31+6 | 1.34+8 | 6.25+7 | 3.27+7 | 2.73+7 | 2.27+7 | 1.67+7 |
| B | SUSQUEHANNA 2 | B | (a) | | | | | | | | | | |
| | THREE MILE ISL 1 | P | 148 | 2.22+7 | 7.21+6 | 2.47+6 | 6.54+5 | 3.23+7 | 1.51+7 | 7.49+6 | 1.07+7 | 8.58+6 | 5.68+6 |
| | TROJAN | P | 96 | 2.63+7 | 9.09+6 | 3.32+6 | 4.37+5 | 3.82+7 | 1.68+7 | 7.83+6 | 1.24+7 | 8.16+6 | 4.95+6 |
| E | TURKEY PT 3 | P | 144 | 2.46+7 | 9.55+6 | 3.88+6 | 6.39+5 | 4.08+7 | 2.10+7 | 1.14+7 | 1.68+7 | 1.21+7 | 8.15+6 |
| E | TURKEY PT 4 | P | (a) | | | | | | | | | | |
| B | VOGTLE 1 | P | 252 | 9.74+7 | 2.79+7 | 8.87+6 | 1.11+6 | 1.29+8 | 4.72+7 | 1.96+7 | 3.25+7 | 2.04+7 | 1.18+7 |
| B | VOGTLE 2 | P | (a) | | | | | | | | | | |
| | VT YANKEE 1 | B | 264 | 3.11+7 | 1.29+7 | 5.74+6 | 5.53+5 | 4.31+7 | 2.26+7 | 1.29+7 | 1.26+7 | 1.02+7 | 7.66+6 |
| | WASH NUCLEAR 2 | B | 312 | 7.58+7 | 3.02+7 | 1.36+7 | 6.39+5 | 8.98+7 | 4.17+7 | 2.24+7 | 1.38+7 | 1.21+7 | 9.46+6 |
| | WATERFORD 3 | P | 176 | 5.15+7 | 1.47+7 | 4.63+6 | 6.96+5 | 7.45+7 | 3.04+7 | 1.42+7 | 2.37+7 | 1.64+7 | 1.03+7 |
| A | WATTS BAR 1 | P | 240 | 1.07+8 | 3.81+7 | 1.52+7 | 1.06+6 | 1.42+8 | 6.72+7 | 3.66+7 | 3.64+7 | 3.02+7 | 2.24+7 |
| A | WATTS BAR 2 | P | (a) | | | | | | | | | | |
| | WOLF CREEK 1 | P | 152 | 4.68+7 | 1.21+7 | 3.50+6 | 6.77+5 | 6.79+7 | 2.53+7 | 1.08+7 | 2.18+7 | 1.38+7 | 7.93+6 |
| | YANKEE-ROWE 1 | P | 76 | 2.22+7 | 1.01+7 | 4.80+6 | 1.86+5 | 2.95+7 | 1.95+7 | 1.33+7 | 7.46+6 | 9.51+6 | 8.68+6 |
| A | ZION 1 | P | 216 | 5.32+7 | 2.74+7 | 1.49+7 | 9.54+5 | 8.05+7 | 5.36+7 | 3.80+7 | 2.83+7 | 2.71+7 | 2.40+7 |
| A | ZION 2 | P | (a) | | | | | | | | | | |
| | TOTAL | | | 4.85+9 | 1.97+9 | 9.56+8 | 6.50+7 | 6.46+9 | 3.23+9 | 1.96+9 | 1.68+9 | 1.32+9 | 1.01+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A6a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - SILO OPTION (1983 DOLLARS)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O $ M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | 2008 | 377 | 1998 | 52 | 2.06+7 | 1.09+7 | 5.98+6 | 9.70+6 | 3.80+6 | 1.60+6 | 3.03+7 | 1.47+7 | 7.58+6 |
| | ARK NUCLEAR 2 | 2012 | 565 | 1999 | 53 | 2.27+7 | 1.04+7 | 4.95+6 | 1.12+7 | 3.71+6 | 1.33+6 | 3.39+7 | 1.41+7 | 6.28+6 |
| | BEAVER VALLEY 1 | 2016 | 853 | 1996 | 57 | 3.00+7 | 1.59+7 | 8.70+6 | 1.97+7 | 6.52+6 | 2.43+6 | 4.97+7 | 2.24+7 | 1.11+7 |
| | BEAVER VALLEY 2 | 2026 | 858 | 2009 | 57 | 2.99+7 | 8.41+6 | 2.51+6 | 1.67+7 | 3.12+6 | 6.63+5 | 4.66+7 | 1.15+7 | 3.17+6 |
| | BELLEFONTE 1 | 2028 | 1900 | 2009 | 69 | 5.24+7 | 1.47+7 | 4.40+6 | 2.46+7 | 4.39+6 | 9.07+5 | 7.70+7 | 1.91+7 | 5.31+6 |
| | BELLEFONTE 2 | 2030 | 1900 | 2011 | 69 | 5.24+7 | 1.34+7 | 3.64+6 | 2.46+7 | 3.99+6 | 7.50+5 | 7.70+7 | 1.74+7 | 4.39+6 |
| | BIG ROCK 1 | 2001 | 95 | 1995 | 52 | 2.06+7 | 1.15+7 | 6.58+6 | 4.85+6 | 2.28+6 | 1.12+6 | 2.55+7 | 1.38+7 | 7.70+6 |
| A | BRAIDWOOD 1 | 2026 | 3627 | 1998 | 87 | 8.58+7 | 4.55+7 | 2.49+7 | 5.16+7 | 1.40+7 | 4.70+6 | 1.37+8 | 5.95+7 | 2.98+7 |
| A | BRAIDWOOD 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| B | BROWNS FERRY 1 | 2014 | 3228 | 2002 | 62 | 3.86+7 | 1.53+7 | 6.31+6 | 1.31+7 | 3.83+6 | 1.22+6 | 5.17+7 | 1.91+7 | 7.53+6 |
| B | BROWNS FERRY 2 | 2014 | (a) | | | | | | | | | 0.00+0 | | |
| | BROWNS FERRY 3 | 2017 | 2441 | 2001 | 58 | 3.22+7 | 1.34+7 | 5.79+6 | 1.62+7 | 4.56+6 | 1.42+6 | 4.84+7 | 1.80+7 | 7.21+6 |
| | BRUNSWICK 1 | 2010 | 2401 | 1998 | 58 | 3.19+7 | 2.27+7 | 1.64+7 | 2.02+7 | 8.94+6 | 4.41+6 | 5.21+7 | 3.16+7 | 2.08+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| | BRUNSWICK 2 | 2010 | 2281 | 1991 | 57 | 3.08+7 | 2.09+7 | 1.44+7 | 1.89+7 | 8.15+6 | 3.89+6 | 4.97+7 | 2.91+7 | 1.83+7 |
| | | | | | | | | | | | | 0.00+0 | | |
| A | BYRON 1 | 2024 | 3627 | 1994 | 87 | 8.58+7 | 5.02+7 | 3.01+7 | 5.16+7 | 1.55+7 | 5.68+6 | 1.37+8 | 6.57+7 | 3.58+7 |
| A | BYRON 2 | 2026 | (a) | | | | | | | | | 0.00+0 | | |
| | CALLAWAY 1 | 2024 | 1129 | 2005 | 59 | 3.43+7 | 1.17+7 | 4.22+6 | 1.97+7 | 4.29+6 | 1.07+6 | 5.40+7 | 1.60+7 | 5.29+6 |
| B | CALVERT CLF 1 | 2014 | 2213 | 1992 | 69 | 5.22+7 | 3.36+7 | 2.21+7 | 2.84+7 | 1.09+7 | 4.79+6 | 8.06+7 | 4.45+7 | 2.69+7 |
| B | CALVERT CLF 2 | 2016 | (a) | | | | | | | | | 0.00+0 | | |
| | CATAWBA 1 | 2025 | 0 | 2025 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CATAWBA 2 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 |
| | CLINTON 1 | 2027 | 2672 | 2006 | 59 | 3.31+7 | 1.08+7 | 3.70+6 | 2.15+7 | 4.27+6 | 9.88+5 | 5.46+7 | 1.51+7 | 4.69+6 |
| B | COMANCHE PK 1 | 2030 | 2067 | 2015 | 71 | 5.72+7 | 1.20+7 | 2.71+6 | 2.03+7 | 2.95+6 | 4.88+5 | 7.75+7 | 1.50+7 | 3.20+6 |
| B | COMANCHE PK 2 | 2030 | (a) | | | | | | | | | 0.00+0 | | |
| A | COOK 1 | 2009 | 1241 | 1998 | 61 | 3.74+7 | 1.80+7 | 8.98+6 | 1.18+7 | 4.30+6 | 1.67+6 | 4.92+7 | 2.23+7 | 1.06+7 |
| A | COOK 2 | 2009 | (a) | | | | | | | | | 0.00+0 | | |
| | COOPER STN | 2008 | 1238 | 1997 | 52 | 2.23+7 | 1.13+7 | 5.87+6 | 9.37+6 | 3.57+6 | 1.46+6 | 3.17+7 | 1.49+7 | 7.33+6 |
| | CRYSTAL RVR 3 | 2016 | 432 | 2005 | 52 | 2.07+7 | 7.06+6 | 2.54+6 | 8.89+6 | 2.30+6 | 6.45+5 | 2.98+7 | 9.36+6 | 3.19+6 |
| | DAVIS-BESSE 1 | 2017 | 2490 | 1995 | 77 | 6.76+7 | 3.77+7 | 2.15+7 | 3.22+7 | 1.07+7 | 4.09+6 | 9.98+7 | 4.84+7 | 2.56+7 |
| | DIABLO CANYON 1 | 2025 | 517 | 2011 | 53 | 2.29+7 | 5.83+6 | 1.58+6 | 1.21+7 | 2.18+6 | 4.42+5 | 3.49+7 | 8.01+6 | 2.02+6 |
| | DIABLO CANYON 2 | 2025 | 517 | 2011 | 53 | 2.29+7 | 5.83+6 | 1.58+6 | 1.21+7 | 2.18+6 | 4.42+5 | 3.49+7 | 8.01+6 | 2.02+6 |
| | DRESDEN 1 | 1984 | 0 | | | | | | | | | 0.00+0 | | |
| | DRESDEN 2 | 2008 | 1015 | 1998 | 52 | 2.06+7 | 9.93+6 | 4.94+6 | 8.08+6 | 3.00+6 | 1.19+6 | 2.87+7 | 1.29+7 | 6.13+6 |
| | DRESDEN 3 | 2008 | 893 | 2000 | 52 | 2.06+7 | 9.01+6 | 4.08+6 | 6.47+6 | 2.28+6 | 8.53+5 | 2.71+7 | 1.13+7 | 4.93+6 |
| | DUANE ARNOLD | 2010 | 998 | 1999 | 52 | 2.06+7 | 9.46+6 | 4.49+6 | 8.89+6 | 3.08+6 | 1.14+6 | 2.95+7 | 1.25+7 | 5.63+6 |
| | ENRICO FERMI 2 | 2025 | 5365 | 1997 | 72 | 5.86+7 | 2.96+7 | 1.54+7 | 3.84+7 | 1.03+7 | 3.36+6 | 9.70+7 | 3.99+7 | 1.88+7 |
| | FARLEY 1 | 2012 | 298 | 2006 | 52 | 2.06+7 | 6.72+6 | 2.31+6 | 4.85+6 | 1.34+6 | 3.93+5 | 2.55+7 | 8.06+6 | 2.70+6 |
| | FARLEY 2 | 2012 | 140 | 2008 | 52 | 2.06+7 | 6.10+6 | 1.91+6 | 3.23+6 | 8.48+5 | 2.38+5 | 2.38+7 | 6.95+6 | 2.15+6 |
| | FITZPATRICK | 2015 | 2246 | 1997 | 57 | 3.07+7 | 1.55+7 | 8.09+6 | 1.79+7 | 5.87+6 | 2.15+6 | 4.86+7 | 2.14+7 | 1.02+7 |
| | FORT CALHOUN | 2008 | 413 | 1994 | 52 | 2.06+7 | 1.21+7 | 7.24+6 | 8.89+6 | 3.92+6 | 1.84+6 | 2.95+7 | 1.60+7 | 9.08+6 |
| | FT ST VRAIN | 2007 | | | | | | | | | | 0.00+0 | | |
| | GINNA | 2006 | 219 | 2000 | 52 | 2.06+7 | 9.01+6 | 4.08+6 | 4.85+6 | 1.79+6 | 6.98+5 | 2.55+7 | 1.08+7 | 4.78+6 |
| | GRAND GULF 1 | 2022 | 4392 | 1998 | 87 | 4.90+7 | 2.36+7 | 1.17+7 | 2.98+7 | 8.26+6 | 2.67+6 | 7.88+7 | 3.18+7 | 1.44+7 |
| | HADDAM NECK | 2007 | 319 | 1997 | 52 | 2.06+7 | 1.04+7 | 5.44+6 | 8.08+6 | 3.15+6 | 1.31+6 | 2.87+7 | 1.36+7 | 6.75+6 |
| | HARRIS 1 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | | |
| | | | - | - | | | | | | | | 0.00+0 | | |

TABLE A6a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - SILO OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| B | HATCH 1 | 2009 | 2874 | 2000 | 60 | 3.57+7 | 1.56+7 | 7.06+6 | 9.49+6 | 3.27+6 | 1.20+6 | 4.52+7 | 1.89+7 | 8.26+6 |
| B | HATCH 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| | HOPE CREEK | 2026 | 2820 | 2007 | 60 | 3.53+7 | 1.10+7 | 3.59+6 | 1.99+7 | 3.93+6 | 8.92+5 | 5.52+7 | 1.49+7 | 4.48+6 |
| | HUMBOLDT BAY | 1976 | 0 | - | | | | | | | | 0.00+0 | | |
| | INDIAN PT 1 | 1980 | 0 | - | | | | | | | | 0.00+0 | | |
| | INDIAN PT 2 | 2008 | 493 | 1994 | 52 | 2.21+7 | 1.29+7 | 7.75+6 | 1.02+7 | 4.39+6 | 2.02+6 | 3.23+7 | 1.73+7 | 9.77+6 |
| | INDIAN PT 3 | 2015 | 536 | 2004 | 53 | 2.33+7 | 8.37+6 | 3.15+6 | 9.64+6 | 2.61+6 | 7.69+5 | 3.29+7 | 1.10+7 | 3.92+6 |
| | KEWAUNEE | 2014 | 579 | 1999 | 52 | 2.18+7 | 1.00+7 | 4.75+6 | 1.26+7 | 4.00+6 | 1.39+6 | 3.44+7 | 1.40+7 | 6.14+6 |
| | LACROSSE | 2002 | 205 | 1992 | 52 | 2.06+7 | 1.33+7 | 8.76+6 | 8.08+6 | 4.02+6 | 2.11+6 | 2.87+7 | 1.73+7 | 1.09+7 |
| B | LASALLE CTY 1 | 2022 | 9824 | 1990 | 93 | 1.01+8 | 6.91+7 | 4.81+7 | 6.65+7 | 2.33+7 | 1.02+7 | 1.68+8 | 9.24+7 | 5.83+7 |
| B | LASALLE CTY 2 | 2023 | (a) | | | | | | | | | 0.00+0 | | |
| | LIMERICK 1 | 2024 | 4098 | 1995 | 66 | 4.69+7 | 2.61+7 | 1.49+7 | 3.52+7 | 1.02+7 | 3.62+6 | 8.21+7 | 3.63+7 | 1.85+7 |
| | LIMERICK 2 | 2029 | 4236 | 1998 | 67 | 4.79+7 | 2.31+7 | 1.15+7 | 3.81+7 | 9.21+6 | 2.79+6 | 8.60+7 | 3.23+7 | 1.43+7 |
| | MAINE YANKEE | 2008 | 632 | 1998 | 53 | 2.26+7 | 1.20+7 | 6.53+6 | 1.03+7 | 4.03+6 | 1.69+6 | 3.29+7 | 1.60+7 | 8.22+6 |
| | MCGUIRE 1 | 2021 | 965 | 2005 | 58 | 3.21+7 | 1.10+7 | 3.94+6 | 1.62+7 | 3.74+6 | 9.71+5 | 4.83+7 | 1.47+7 | 4.91+6 |
| | MCGUIRE 2 | 2023 | 989 | 2006 | 58 | 3.25+7 | 1.06+7 | 3.63+6 | 1.73+7 | 3.73+6 | 9.10+5 | 4.98+7 | 1.43+7 | 4.54+6 |
| | MILLSTONE 1 | 2010 | 2480 | 1987 | 58 | 3.19+7 | 2.51+7 | 2.00+7 | 2.32+7 | 1.12+7 | 6.12+6 | 5.51+7 | 3.63+7 | 2.61+7 |
| | MILLSTONE 2 | 2015 | 823 | 1997 | 55 | 2.74+7 | 1.38+7 | 7.21+6 | 1.71+7 | 5.62+6 | 2.05+6 | 4.45+7 | 1.94+7 | 9.26+6 |
| | MILLSTONE 3 | 2025 | 541 | 2016 | 53 | 2.34+7 | 4.68+6 | 1.01+6 | 7.91+6 | 1.25+6 | 2.18+5 | 3.13+7 | 5.93+6 | 1.23+6 |
| | MONTICELLO | 2007 | 355 | 2004 | 52 | 2.06+7 | 7.41+6 | 2.79+6 | 2.42+6 | 7.90+5 | 2.72+5 | 2.30+7 | 8.20+6 | 3.06+6 |
| | NINE MILE PT 1 | 2005 | 884 | 1996 | 52 | 2.06+7 | 1.09+7 | 5.98+6 | 7.27+6 | 3.05+6 | 1.35+6 | 2.79+7 | 1.40+7 | 7.33+6 |
| | NINE MILE PT 2 | 2026 | 1971 | 2011 | 56 | 2.86+7 | 7.28+6 | 1.98+6 | 1.45+7 | 2.56+6 | 5.10+5 | 4.31+7 | 9.84+6 | 2.49+6 |
| A | NORTH ANNA 1 | 2018 | 1868 | 1999 | 70 | 5.39+7 | 2.47+7 | 1.17+7 | 2.49+7 | 7.27+6 | 2.39+6 | 7.88+7 | 3.20+7 | 1.41+7 |
| A | NORTH ANNA 2 | 2020 | (a) | | | | | | | | | 0.00+0 | | |
| A | OCONEE 1 | 2013 | 2102 | 1989 | 72 | 5.82+7 | 4.34+7 | 3.28+7 | 3.28+7 | 1.41+7 | 6.94+6 | 9.10+7 | 5.75+7 | 3.97+7 |
| A | OCONEE 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| | OCONEE 3 | 2014 | 1021 | 1991 | 59 | 3.33+7 | 2.25+7 | 1.55+7 | 2.36+7 | 9.36+6 | 4.25+6 | 5.69+7 | 3.19+7 | 1.98+7 |
| | OYSTER CRK 1 | 2004 | 912 | 1994 | 52 | 2.06+7 | 1.21+7 | 7.24+6 | 8.06+6 | 3.65+6 | 1.74+6 | 2.87+7 | 1.58+7 | 8.98+6 |
| | PALISADES | 2011 | 836 | 1988 | 55 | 2.71+7 | 2.12+7 | 1.68+7 | 2.18+7 | 1.00+7 | 5.22+6 | 4.89+7 | 3.12+7 | 2.20+7 |
| | PALO VERDE 1 | 2024 | 1117 | 2005 | 58 | 3.27+7 | 1.12+7 | 4.01+6 | 1.93+7 | 4.20+6 | 1.05+6 | 5.20+7 | 1.54+7 | 5.06+6 |
| | PALO VERDE 2 | 2025 | 1121 | 2006 | 58 | 3.27+7 | 1.07+7 | 3.66+6 | 1.94+7 | 4.01+6 | 9.51+5 | 5.21+7 | 1.47+7 | 4.61+6 |
| | PALO VERDE 3 | 2026 | 1121 | 2007 | 58 | 3.27+7 | 1.01+7 | 3.32+6 | 1.94+7 | 3.82+6 | 8.65+5 | 5.21+7 | 1.39+7 | 4.19+6 |
| | PEACHBOTTOM 2 | 2008 | 1812 | 1997 | 55 | 2.73+7 | 1.38+7 | 7.19+6 | 1.05+7 | 3.99+6 | 1.63+6 | 3.78+7 | 1.78+7 | 8.82+6 |
| | PEACHBOTTOM 3 | 2008 | 1589 | 1997 | 54 | 2.55+7 | 1.29+7 | 6.71+6 | 1.01+7 | 3.86+6 | 1.57+6 | 3.56+7 | 1.68+7 | 8.28+6 |
| | PERRY 1 | 2026 | 2548 | 2009 | 59 | 3.31+7 | 9.32+6 | 2.78+6 | 1.74+7 | 3.24+6 | 6.89+5 | 5.05+7 | 1.26+7 | 3.47+6 |
| | PILGRIM 1 | 2008 | 1512 | 1993 | 53 | 2.44+7 | 1.50+7 | 9.40+6 | 1.35+7 | 5.73+6 | 2.64+6 | 3.79+7 | 2.07+7 | 1.20+7 |
| A | POINT BEACH 1 | 2007 | 849 | 1995 | 55 | 2.69+7 | 1.50+7 | 8.57+6 | 1.13+7 | 4.66+6 | 2.05+6 | 3.82+7 | 1.97+7 | 1.06+7 |
| A | POINT BEACH 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| A | PRAIRIE ISL 1 | 2008 | 1142 | 1993 | 57 | 3.08+7 | 1.89+7 | 1.19+7 | 1.49+7 | 6.35+6 | 2.92+6 | 4.57+7 | 2.53+7 | 1.48+7 |
| A | PRAIRIE ISL 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| B | QUAD CITIES 1 | 2007 | 503 | 2005 | 52 | 2.06+7 | 7.06+6 | 2.54+6 | 1.62+6 | 5.14+5 | 1.72+5 | 2.22+7 | 7.57+6 | 2.71+6 |
| B | QUAD CITIES 2 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| | RANCHO SECO 1 | 2008 | 228 | 2004 | 52 | 2.06+7 | 7.41+6 | 2.79+6 | 3.23+6 | 1.03+6 | 3.46+5 | 2.38+7 | 8.44+6 | 3.14+6 |
| | ROBINSON 2 | 2007 | 668 | 1990 | 54 | 2.50+7 | 1.78+7 | 1.28+7 | 1.55+7 | 7.30+6 | 3.75+6 | 4.05+7 | 2.51+7 | 1.66+7 |
| | RVR BEND 1 | 2025 | 2452 | 2007 | 58 | 3.25+7 | 1.01+7 | 3.30+6 | 1.83+7 | 3.68+6 | 8.46+5 | 5.08+7 | 1.38+7 | 4.15+6 |
| | SALEM 1 | 2016 | 1007 | 1997 | 59 | 3.29+7 | 1.66+7 | 8.66+6 | 1.94+7 | 6.23+6 | 2.25+6 | 5.23+7 | 2.28+7 | 1.09+7 |
| | SALEM 2 | 2020 | 1163 | 2001 | 60 | 3.61+7 | 1.50+7 | 6.49+6 | 2.01+7 | 5.32+6 | 1.59+6 | 5.62+7 | 2.03+7 | 8.08+6 |

TABLE A6a. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY IN THE CURRENT HIGH DENSITY RACK CONFIGURATION - SILO OPTION (1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 2362 | 1995 | 69 | 5.30+7 | 2.95+7 | 1.69+7 | 5.20+6 | 2.57+6 | 1.31+6 | 5.82+7 | 3.21+7 | 1.82+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | | | | | | | | | 0.00+0 | | |
| E | SAN ONOFRE 3 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| | SEABROOK 1 | 2031 | 1261 | 2008 | 62 | 3.81+7 | 1.13+7 | 3.52+6 | 2.50+7 | 4.33+6 | 8.91+5 | 6.31+7 | 1.56+7 | 4.41+6 |
| A | SEQUOYAH 1 | 2021 | 2680 | 1995 | 79 | 7.08+7 | 3.94+7 | 2.26+7 | 3.88+7 | 1.20+7 | 4.36+6 | 1.10+8 | 5.14+7 | 2.70+7 |
| A | SEQUOYAH 2 | 2022 | (a) | | | | | | | | | 0.00+0 | | |
| | SHOREHAM | 2027 | 2635 | 2006 | 59 | 3.36+7 | 1.09+7 | 3.75+6 | 2.16+7 | 4.29+6 | 9.93+5 | 5.52+7 | 1.52+7 | 4.74+6 |
| | SOUTH TEXAS 1 | 2027 | 258 | 2023 | 52 | 2.06+7 | 2.93+6 | 4.58+5 | 3.23+6 | 4.07+5 | 5.66+4 | 2.38+7 | 3.34+6 | 5.13+5 |
| | SOUTH TEXAS 2 | 2028 | 258 | 2024 | 52 | 2.06+7 | 2.79+6 | 4.15+5 | 3.23+6 | 3.88+5 | 5.15+4 | 2.38+7 | 3.18+6 | 4.67+5 |
| | ST LUCIE 1 | 2010 | 1182 | 1987 | 58 | 3.19+7 | 2.52+7 | 2.01+7 | 2.32+7 | 1.12+7 | 6.12+6 | 5.51+7 | 3.64+7 | 2.62+7 |
| | ST LUCIE 2 | 2023 | 1126 | 2001 | 57 | 3.10+7 | 1.29+7 | 5.58+6 | 2.20+7 | 5.46+6 | 1.58+6 | 5.30+7 | 1.84+7 | 7.16+6 |
| | SUMMER 1 | 2024 | 761 | 2008 | 56 | 2.80+7 | 8.28+6 | 2.59+6 | 1.54+7 | 3.07+6 | 6.94+5 | 4.34+7 | 1.14+7 | 3.28+6 |
| A | SURRY 1 | 2012 | 97 | 2012 | 52 | 2.06+7 | 5.02+6 | 1.30+6 | 0.00+0 | 0.00+0 | 0.00+0 | 2.06+7 | 5.02+6 | 1.30+6 |
| A | SURRY 2 | 2013 | (a) | | | | | | | | | 0.00+0 | | |
| B | SUSQUEHANNA 1 | 2022 | 7288 | 2000 | 80 | 7.41+7 | 3.23+7 | 1.47+7 | 3.36+7 | 8.77+6 | 2.65+6 | 1.08+8 | 4.11+7 | 1.74+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | | | | | | | | | 0.00+0 | | |
| | THREE MILE ISL 1 | 2008 | 75 | 2006 | 52 | 2.06+7 | 6.72+6 | 2.31+6 | 1.62+6 | 4.89+5 | 1.57+5 | 2.22+7 | 7.21+6 | 2.47+6 |
| | TROJAN | 2011 | 373 | 2004 | 52 | 2.06+7 | 7.41+6 | 2.79+6 | 5.66+6 | 1.68+6 | 5.32+5 | 2.63+7 | 9.09+6 | 3.32+6 |
| E | TURKEY PT 3 | 2007 | 384 | 2002 | 52 | 2.06+7 | 8.17+6 | 3.38+6 | 4.04+6 | 1.38+6 | 5.01+5 | 2.46+7 | 9.55+6 | 3.88+6 |
| E | TURKEY PT 4 | 2007 | (a) | | | | | | | | | 0.00+0 | | |
| B | VOGTLE 1 | 2027 | 2495 | 2006 | 76 | 6.68+7 | 2.18+7 | 7.46+6 | 3.06+7 | 8.08+6 | 1.41+6 | 9.74+7 | 2.79+7 | 8.87+6 |
| B | VOGTLE 2 | 2028 | (a) | | | | | | | | | 0.00+0 | | |
| | VT YANKEE 1 | 2012 | 1068 | 1999 | 52 | 2.06+7 | 9.46+6 | 4.49+6 | 1.05+7 | 3.48+6 | 1.25+6 | 3.11+7 | 1.29+7 | 5.74+6 |
| | WASH NUCLEAR 2 | 2023 | 4018 | 1998 | 66 | 4.59+7 | 2.21+7 | 1.10+7 | 2.99+7 | 8.12+6 | 2.60+6 | 7.58+7 | 3.02+7 | 1.36+7 |
| | WATERFORD 3 | 2024 | 1143 | 2006 | 59 | 3.31+7 | 1.08+7 | 3.69+6 | 1.84+7 | 3.89+6 | 9.37+5 | 5.15+7 | 1.47+7 | 4.63+6 |
| A | WATTS BAR 1 | 2025 | 2691 | 2001 | 79 | 7.10+7 | 2.95+7 | 1.28+7 | 3.59+7 | 8.58+6 | 2.42+6 | 1.07+8 | 3.81+7 | 1.52+7 |
| A | WATTS BAR 2 | 2027 | (a) | | | | | | | | | 0.00+0 | | |
| | WOLF CREEK 1 | 2025 | 857 | 2008 | 57 | 3.00+7 | 9.85+6 | 2.77+6 | 1.68+7 | 3.28+6 | 7.30+5 | 4.68+7 | 1.21+7 | 3.50+6 |
| | YANKEE-ROWE 1 | 2001 | 36 | 1999 | 52 | 2.06+7 | 9.46+6 | 4.49+6 | 1.62+6 | 6.88+5 | 3.05+5 | 2.22+7 | 1.01+7 | 4.80+6 |
| A | ZION 1 | 2008 | 1295 | 1995 | 62 | 3.89+7 | 2.17+7 | 1.24+7 | 1.43+7 | 5.73+6 | 2.48+6 | 5.32+7 | 2.74+7 | 1.49+7 |
| A | ZION 2 | 2008 | (a) | | | | | | | | | 0.00+0 | | |
| | TOTAL | | | | | 3.24+9 | 1.49+9 | 7.79+8 | 1.61+9 | 4.79+8 | 1.77+8 | 4.85+9 | 1.97+9 | 9.56+8 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1

TABLE A6b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - SILO OPTION
(1983 DOLLARS)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEM-BLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O $ M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| | ARK NUCLEAR 1 | 2008 | 737 | (b) | 55 | 2.77+7 | 2.17+7 | 1.72+7 | 1.91+7 | 9.34+6 | 5.05+6 | 4.68+7 | 3.10+7 | 2.23+7 |
| | ARK NUCLEAR 2 | 2012 | 973 | 1989 | 57 | 3.05+7 | 2.27+7 | 1.72+7 | 2.28+7 | 9.98+6 | 4.97+6 | 5.33+7 | 3.27+7 | 2.22+7 |
| | BEAVER VALLEY 1 | 2016 | 1287 | (b) | 62 | 3.85+7 | 2.99+7 | 2.35+7 | 3.06+7 | 1.27+7 | 6.31+6 | 6.91+7 | 4.26+7 | 2.98+7 |
| | BEAVER VALLEY 2 | 2026 | 1296 | 2000 | 62 | 3.88+7 | 1.69+7 | 7.67+6 | 2.85+7 | 8.88+6 | 1.98+6 | 6.73+7 | 2.38+7 | 9.65+6 |
| | BELLEFONTE 1 | 2028 | 2404 | 2000 | 75 | 6.40+7 | 2.79+7 | 1.27+7 | 4.00+7 | 9.29+6 | 2.63+6 | 1.04+8 | 3.72+7 | 1.53+7 |
| | BELLEFONTE 2 | 2030 | 2404 | 2002 | 75 | 6.40+7 | 2.53+7 | 1.05+7 | 4.00+7 | 8.43+6 | 2.16+6 | 1.04+8 | 3.37+7 | 1.27+7 |
| | BIG ROCK 1 | 2001 | 175 | 1992 | 52 | 2.06+7 | 1.33+7 | 8.76+6 | 7.27+6 | 3.70+6 | 1.97+6 | 2.79+7 | 1.70+7 | 1.07+7 |
| A | BRAIDWOOD 1 | 2026 | 4383 | 1990 | 95 | 1.05+8 | 7.09+7 | 4.90+7 | 7.66+7 | 2.50+7 | 1.06+7 | 1.82+8 | 9.59+7 | 5.96+7 |
| A | BRAIDWOOD 2 | 2027 | (a) | 1990 | | | | | | | | | | |
| B | BROWNS FERRY 1 | 2014 | 4594 | 1998 | 68 | 5.14+7 | 2.47+7 | 1.23+7 | 2.04+7 | 6.66+6 | 2.39+6 | 7.18+7 | 3.14+7 | 1.47+7 |
| B | BROWNS FERRY 2 | 2014 | (a) | 1998 | | | | | | | | | | |
| | BROWNS FERRY 3 | 2017 | 3353 | 1995 | 62 | 3.97+7 | 2.21+7 | 1.27+7 | 2.44+7 | 8.12+6 | 3.10+6 | 6.41+7 | 3.02+7 | 1.58+7 |
| | BRUNSWICK 1 | 2010 | 3153 | (b) | 62 | 3.81+7 | 2.98+7 | 2.33+7 | 2.39+7 | 1.12+7 | 5.91+6 | 6.20+7 | 4.08+7 | 2.92+7 |
| | BRUNSWICK 2 | 2010 | 3033 | (b) | 61 | 3.68+7 | 2.87+7 | 2.26+7 | 2.35+7 | 1.10+7 | 5.82+6 | 6.03+7 | 3.97+7 | 2.84+7 |
| A | BYRON 1 | 2024 | 4413 | (b) | 95 | 1.05+8 | 7.13+7 | 4.92+7 | 7.68+7 | 2.77+7 | 1.28+7 | 1.82+8 | 9.90+7 | 6.20+7 |
| A | BYRON 2 | 2026 | (a) | (b) | | | | | | | | | | |
| | CALLAWAY 1 | 2024 | 1633 | 1996 | 65 | 4.50+7 | 2.38+7 | 1.30+7 | 3.32+7 | 9.35+6 | 3.19+6 | 7.82+7 | 3.32+7 | 1.62+7 |
| B | CALVERT CLF 1 | 2014 | 2789 | (b) | 75 | 6.34+7 | 4.68+7 | 3.50+7 | 3.70+7 | 1.60+7 | 8.10+6 | 1.00+8 | 6.28+7 | 4.31+7 |
| B | CALVERT CLF 2 | 2016 | (a) | (b) | | | | | | | | | | |
| | CATAWBA 1 | 2025 | 226 | 2021 | 52 | 2.06+7 | 3.23+6 | 5.52+5 | 3.23+6 | 4.49+5 | 6.85+4 | 2.38+7 | 3.68+6 | 6.21+5 |
| | CATAWBA 2 | 2026 | 210 | 2023 | 52 | 2.06+7 | 2.93+6 | 4.56+5 | 2.42+6 | 3.13+5 | 4.44+4 | 2.30+7 | 3.24+6 | 5.00+5 |
| | CLINTON 1 | 2027 | 3260 | 2000 | 62 | 3.88+7 | 1.69+7 | 7.68+6 | 2.96+7 | 7.00+6 | 2.00+6 | 6.84+7 | 2.39+7 | 9.68+6 |
| B | COMANCHE PK 1 | 2030 | 2661 | 2010 | 78 | 7.04+7 | 1.88+7 | 5.37+6 | 2.98+7 | 4.97+6 | 9.67+5 | 1.00+8 | 2.38+7 | 6.34+6 |
| B | COMANCHE PK 2 | 2030 | (a) | 2010 | | | | | | | | | | |
| A | COOK 1 | 2009 | 2009 | 1991 | 70 | 5.53+7 | 3.74+7 | 2.58+7 | 2.40+7 | 1.05+7 | 5.09+6 | 7.93+7 | 4.79+7 | 3.09+7 |
| A | COOK 2 | 2009 | (a) | 1991 | | | | | | | | | | |
| | COOPER STN | 2008 | 1702 | 1993 | 55 | 2.65+7 | 1.63+7 | 1.02+7 | 1.41+7 | 5.98+6 | 2.75+6 | 4.06+7 | 2.23+7 | 1.30+7 |
| | CRYSTAL RVR 3 | 2016 | 648 | 1999 | 54 | 2.59+7 | 1.19+7 | 5.63+6 | 1.58+7 | 4.79+6 | 1.62+6 | 4.17+7 | 1.67+7 | 7.25+6 |
| | DAVIS-BESSE 1 | 2017 | 2850 | 1988 | 81 | 7.54+7 | 5.41+7 | 3.94+7 | 4.48+7 | 1.83+7 | 8.98+6 | 1.20+8 | 7.24+7 | 4.84+7 |
| | DIABLO CANYON 1 | 2025 | 772 | 2006 | 56 | 2.83+7 | 9.22+6 | 3.16+6 | 1.83+7 | 3.80+6 | 9.01+5 | 4.66+7 | 1.30+7 | 4.06+6 |
| | DIABLO CANYON 2 | 2025 | 772 | 2006 | 56 | 2.83+7 | 9.22+6 | 3.16+6 | 1.83+7 | 3.80+6 | 9.01+5 | 4.66+7 | 1.30+7 | 4.06+6 |
| | DRESDEN 1 | 1984 | | | | | | | | | | | | |
| | DRESDEN 2 | 2008 | 1647 | 1992 | 54 | 2.52+7 | 1.62+7 | 1.07+7 | 1.46+7 | 6.39+6 | 3.03+6 | 3.98+7 | 2.26+7 | 1.37+7 |
| | DRESDEN 3 | 2006 | 1325 | 1994 | 52 | 2.23+7 | 1.31+7 | 7.82+6 | 1.19+7 | 4.93+6 | 2.20+6 | 3.42+7 | 1.80+7 | 1.00+7 |
| | DUANE ARNOLD | 2016 | 1516 | 1991 | 54 | 2.47+7 | 1.67+7 | 1.15+7 | 1.72+7 | 7.41+6 | 3.53+6 | 4.19+7 | 2.41+7 | 1.50+7 |
| | ENRICO FERMI 2 | 2025 | 6459 | 1990 | 77 | 6.84+7 | 4.86+7 | 3.51+7 | 5.15+7 | 1.71+7 | 7.28+6 | 1.20+8 | 6.57+7 | 4.24+7 |
| | FARLEY 1 | 2012 | 706 | 1997 | 55 | 2.71+7 | 1.37+7 | 7.15+6 | 1.42+7 | 4.97+6 | 1.98+6 | 4.13+7 | 1.87+7 | 9.05+6 |
| | FARLEY 2 | 2012 | 548 | 1999 | 53 | 2.37+7 | 1.09+7 | 5.16+6 | 1.15+7 | 3.81+6 | 1.37+6 | 3.52+7 | 1.47+7 | 6.53+6 |
| | FITZPATRICK | 2016 | 2966 | 1991 | 61 | 3.65+7 | 2.47+7 | 1.70+7 | 2.55+7 | 9.94+6 | 4.46+6 | 6.20+7 | 3.46+7 | 2.15+7 |
| | FORT CALHOUN | 2008 | 683 | (b) | 53 | 2.30+7 | 1.80+7 | 1.48+7 | 1.48+7 | 7.68+6 | 4.33+6 | 3.78+7 | 2.57+7 | 1.86+7 |
| | FT ST VRAIN | 2007 | | | | | | | | | | | | |
| | GINNA | 2008 | 411 | 1994 | 52 | 2.06+7 | 1.21+7 | 7.24+6 | 9.70+6 | 4.19+6 | 1.93+6 | 3.03+7 | 1.63+7 | 9.17+6 |
| | GRAND GULF 1 | 2022 | 5464 | 1992 | 72 | 5.91+7 | 3.81+7 | 2.50+7 | 4.13+7 | 1.36+7 | 5.51+6 | 1.00+8 | 5.17+7 | 3.05+7 |
| | HADDAM NECK | 2007 | 631 | 1990 | 53 | 2.38+7 | 1.69+7 | 1.22+7 | 1.51+7 | 7.11+6 | 3.65+6 | 3.89+7 | 2.40+7 | 1.59+7 |
| | HARRIS 1 | 2026 | 0 | 2026 | 0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | 0.00+0 | | | |

TABLE A6b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - SILO OPTION
(1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O & M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| B | HATCH 1 | 2009 | 4050 | 1998 | 66 | 4.63+7 | 2.46+7 | 1.34+7 | 1.56+7 | 6.00+6 | 2.48+6 | 6.19+7 | 3.06+7 | 1.59+7 |
| B | HATCH 2 | 2012 | (a) | 1998 | | | | | | | | | | |
| | HOPE CREEK | 2026 | 3748 | 2001 | 64 | 4.36+7 | 1.81+7 | 7.83+6 | 2.91+7 | 6.81+6 | 1.90+6 | 7.27+7 | 2.49+7 | 9.73+6 |
| | HUMBOLDT BAY | 1976 | | | | | | | | | | | | |
| | INDIAN PT 1 | 1980 | | | | | | | | | | | | |
| | INDIAN PT 2 | 2008 | 901 | (b) | 57 | 3.06+7 | 2.40+7 | 1.90+7 | 1.79+7 | 9.10+6 | 5.06+6 | 4.85+7 | 3.31+7 | 2.41+7 |
| | INDIAN PT 3 | 2015 | 992 | 1994 | 58 | 3.26+7 | 1.91+7 | 1.14+7 | 2.14+7 | 7.62+6 | 3.08+6 | 5.40+7 | 2.67+7 | 1.45+7 |
| | KEWAUNEE | 2014 | 801 | 1993 | 54 | 2.61+7 | 1.60+7 | 1.01+7 | 1.95+7 | 7.33+6 | 3.10+6 | 4.56+7 | 2.33+7 | 1.32+7 |
| | LACROSSE | 2002 | 301 | 1987 | 52 | 2.06+7 | 1.67+7 | 1.36+7 | 1.21+7 | 6.90+6 | 4.20+6 | 3.27+7 | 2.36+7 | 1.78+7 |
| B | LASALLE CTY 1 | 2022 | 11144 | (b) | 100 | 1.11+8 | 7.38+7 | 5.01+7 | 6.95+7 | 2.59+7 | 1.22+7 | 1.81+8 | 9.97+7 | 6.23+7 |
| B | LASALLE CTY 2 | 2023 | (a) | (b) | | | | | | | | | | |
| | LIMERICK 1 | 2024 | 4992 | 1988 | 70 | 5.55+7 | 4.16+7 | 3.16+7 | 4.80+7 | 1.73+7 | 8.02+6 | 1.04+8 | 5.89+7 | 3.96+7 |
| | LIMERICK 2 | 2029 | 5116 | 1991 | 71 | 5.64+7 | 3.81+7 | 2.63+7 | 5.11+7 | 1.54+7 | 6.11+6 | 1.08+8 | 5.35+7 | 3.24+7 |
| | MAINE YANKEE | 2008 | 1070 | 1987 | 57 | 3.00+7 | 2.37+7 | 1.98+7 | 2.07+7 | 1.04+7 | 5.82+6 | 5.07+7 | 3.41+7 | 2.48+7 |
| | MCGUIRE 1 | 2021 | 1397 | 1997 | 63 | 4.12+7 | 2.08+7 | 1.08+7 | 2.71+7 | 7.86+6 | 2.67+6 | 6.83+7 | 2.87+7 | 1.35+7 |
| | MCGUIRE 2 | 2023 | 1421 | 1998 | 64 | 4.17+7 | 2.01+7 | 9.99+6 | 2.84+7 | 7.70+6 | 2.47+6 | 7.01+7 | 2.78+7 | 1.25+7 |
| | MILLSTONE 1 | 2010 | 2872 | (b) | 60 | 3.49+7 | 2.73+7 | 2.16+7 | 2.30+7 | 1.08+7 | 5.69+6 | 5.79+7 | 3.81+7 | 2.73+7 |
| | MILLSTONE 2 | 2015 | 1291 | (b) | 60 | 3.55+7 | 2.77+7 | 2.19+7 | 2.84+7 | 1.21+7 | 6.03+6 | 6.39+7 | 3.98+7 | 2.79+7 |
| | MILLSTONE 3 | 2025 | 1045 | 2007 | 59 | 3.36+7 | 1.04+7 | 3.42+6 | 1.85+7 | 3.73+6 | 8.57+5 | 5.21+7 | 1.41+7 | 4.28+6 |
| | MONTICELLO | 2007 | 835 | 1998 | 52 | 2.06+7 | 9.93+6 | 4.94+6 | 7.27+6 | 2.76+6 | 1.11+6 | 2.79+7 | 1.27+7 | 6.05+6 |
| | NINE MILE PT 1 | 2005 | 1252 | 1990 | 52 | 2.19+7 | 1.56+7 | 1.12+7 | 1.26+7 | 6.21+6 | 3.29+6 | 3.45+7 | 2.18+7 | 1.45+7 |
| | NINE MILE PT 2 | 2026 | 2533 | 2007 | 59 | 3.29+7 | 1.02+7 | 3.34+6 | 1.94+7 | 3.82+6 | 8.66+5 | 5.23+7 | 1.40+7 | 4.21+6 |
| A | NORTH ANNA 1 | 2018 | 2451 | 1992 | 77 | 6.77+7 | 4.36+7 | 2.87+7 | 3.81+7 | 1.36+7 | 5.69+6 | 1.06+8 | 5.72+7 | 3.44+7 |
| A | NORTH ANNA 2 | 2020 | (a) | 1992 | | | | | | | | | | |
| A | OCONEE 1 | 2013 | 2641 | (b) | 78 | 7.02+7 | 5.10+7 | 3.75+7 | 3.72+7 | 1.64+7 | 8.39+6 | 1.07+8 | 6.74+7 | 4.59+7 |
| A | OCONEE 2 | 2013 | (a) | (b) | | | | | | | | | | |
| | OCONEE 3 | 2014 | 1381 | (b) | 63 | 4.10+7 | 3.16+7 | 2.47+7 | 2.93+7 | 1.27+7 | 6.40+6 | 7.03+7 | 4.43+7 | 3.11+7 |
| | OYSTER CRK 1 | 2004 | 1424 | 1989 | 53 | 2.34+7 | 1.75+7 | 1.32+7 | 1.32+7 | 6.80+6 | 3.77+6 | 3.66+7 | 2.43+7 | 1.70+7 |
| | PALISADES | 2011 | 1039 | (b) | 57 | 3.05+7 | 2.39+7 | 1.89+7 | 2.28+7 | 1.05+7 | 5.47+6 | 5.33+7 | 3.44+7 | 2.44+7 |
| | PALO VERDE 1 | 2024 | 1627 | 1998 | 64 | 4.24+7 | 2.25+7 | 1.23+7 | 3.21+7 | 9.05+6 | 3.09+6 | 7.45+7 | 3.16+7 | 1.54+7 |
| | PALO VERDE 2 | 2025 | 1631 | 1997 | 64 | 4.25+7 | 2.14+7 | 1.12+7 | 3.21+7 | 8.63+6 | 2.81+6 | 7.46+7 | 3.00+7 | 1.40+7 |
| | PALO VERDE 3 | 2026 | 1631 | 1998 | 64 | 4.25+7 | 2.04+7 | 1.02+7 | 3.21+7 | 8.22+6 | 2.58+6 | 7.46+7 | 2.86+7 | 1.28+7 |
| | PEACHBOTTOM 2 | 2008 | 2724 | 1991 | 59 | 3.44+7 | 2.33+7 | 1.60+7 | 1.77+7 | 7.92+6 | 3.89+6 | 5.21+7 | 3.12+7 | 1.99+7 |
| | PEACHBOTTOM 3 | 2008 | 2469 | 1991 | 58 | 3.24+7 | 2.19+7 | 1.51+7 | 1.72+7 | 7.74+6 | 3.80+6 | 4.96+7 | 2.96+7 | 1.89+7 |
| | PERRY 1 | 2026 | 3444 | 2003 | 63 | 4.07+7 | 1.54+7 | 6.06+6 | 2.58+7 | 5.71+6 | 1.48+6 | 6.65+7 | 2.11+7 | 7.54+6 |
| | PILGRIM 1 | 2008 | 1896 | 1988 | 55 | 2.75+7 | 2.16+7 | 1.71+7 | 1.91+7 | 9.31+6 | 5.04+6 | 4.66+7 | 3.09+7 | 2.21+7 |
| A | POINT BEACH 1 | 2007 | 1137 | 1990 | 58 | 3.15+7 | 2.24+7 | 1.62+7 | 1.71+7 | 8.05+6 | 4.13+6 | 4.86+7 | 3.05+7 | 2.03+7 |
| A | POINT BEACH 2 | 2008 | (a) | 1990 | | | | | | | | | | |
| A | PRAIRIE ISL 1 | 2008 | 1502 | 1988 | 61 | 3.65+7 | 2.85+7 | 2.25+7 | 2.13+7 | 1.04+7 | 5.63+6 | 5.78+7 | 3.89+7 | 2.81+7 |
| A | PRAIRIE ISL 2 | 2008 | (a) | 1988 | | | | | | | | | | |
| B | QUAD CITIES 1 | 2007 | 1463 | 2002 | 53 | 2.40+7 | 9.50+6 | 3.92+6 | 4.46+6 | 1.53+6 | 5.52+5 | 2.85+7 | 1.10+7 | 4.47+6 |
| B | QUAD CITIES 2 | 2007 | (a) | 2002 | | | | | | | | | | |
| | RANCHO SECO 1 | 2008 | 640 | 1992 | 54 | 2.57+7 | 1.66+7 | 1.09+7 | 1.48+7 | 6.46+6 | 3.07+6 | 4.05+7 | 2.31+7 | 1.40+7 |
| | ROBINSON 2 | 2007 | 956 | (b) | 57 | 3.03+7 | 2.37+7 | 1.88+7 | 1.88+7 | 9.37+6 | 5.14+6 | 4.91+7 | 3.31+7 | 2.39+7 |
| | RVR BEND 1 | 2025 | 3220 | 2001 | 62 | 3.90+7 | 1.62+7 | 7.01+6 | 2.63+7 | 6.29+6 | 1.77+6 | 6.53+7 | 2.25+7 | 8.78+6 |
| | SALEM 1 | 2016 | 1487 | 1989 | 64 | 4.33+7 | 3.23+7 | 2.44+7 | 3.13+7 | 1.27+7 | 6.04+6 | 7.46+7 | 4.50+7 | 3.04+7 |
| | SALEM 2 | 2020 | 1667 | 1992 | 66 | 4.75+7 | 3.66+7 | 2.82+7 | 3.42+7 | 1.17+7 | 4.82+6 | 8.17+7 | 4.23+7 | 2.50+7 |

TABLE A6b. COST FOR ADDITIONAL SPENT FUEL STORAGE CAPACITY
AFTER CONVERSION TO LOW DENSITY RACK CONFIGURATION - SILO OPTION
(1983 DOLLARS) (cont'd)

| | PLANT NAME | SHUTDOWN YEAR | ADD. STORAGE REQ'D (ASSEMBLIES) | YEAR WHEN ADD'L STOR. NEEDED | CONS. TIME (MON.) | COST | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | CONSTRUCTION | | | O $ M | | | TOTAL | | |
| | | | | | | 0% | 5% | 10% | 0% | 5% | 10% | 0% | 5% | 10% |
| E | SAN ONOFRE 1 | 1999 | 3172 | 1989 | 77 | 6.78+7 | 4.95+7 | 3.67+7 | 1.47+7 | 8.45+6 | 5.08+6 | 8.25+7 | 5.80+7 | 4.18+7 |
| E | SAN ONOFRE 2 | 2012 | (a) | 1989 | | | | | | | | | | |
| E | SAN ONOFRE 3 | 2013 | (a) | 1989 | | | | | | | | | | |
| | SEABROOK 1 | 2031 | 1645 | 2000 | 66 | 4.70+7 | 2.85+7 | 9.30+6 | 3.76+7 | 8.26+6 | 2.28+6 | 8.46+7 | 2.88+7 | 1.16+7 |
| A | SEQUOYAH 1 | 2021 | 3400 | 1989 | 87 | 8.73+7 | 6.11+7 | 4.35+7 | 5.61+7 | 2.07+7 | 9.43+6 | 1.43+8 | 8.18+7 | 5.29+7 |
| A | SEQUOYAH 2 | 2022 | (a) | 1989 | | | | | | | | | | |
| | SHOREHAM | 2027 | 3371 | 2000 | 62 | 3.97+7 | 1.73+7 | 7.85+6 | 2.99+7 | 7.08+6 | 2.02+6 | 6.96+7 | 2.44+7 | 9.87+6 |
| | SOUTH TEXAS 1 | 2027 | 570 | 2017 | 55 | 2.63+7 | 5.01+6 | 1.03+6 | 9.35+6 | 1.37+6 | 2.25+5 | 3.57+7 | 6.38+6 | 1.26+6 |
| | SOUTH TEXAS 2 | 2028 | 570 | 2018 | 54 | 2.62+7 | 4.75+6 | 9.32+5 | 9.33+6 | 1.31+6 | 2.04+5 | 3.55+7 | 6.06+6 | 1.14+6 |
| | ST LUCIE 1 | 2016 | 1638 | (b) | 62 | 3.96+7 | 3.06+7 | 2.40+7 | 2.43+7 | 1.14+7 | 6.02+6 | 6.39+7 | 4.20+7 | 3.00+7 |
| | ST LUCIE 2 | 2023 | 1558 | 1992 | 62 | 3.81+7 | 2.46+7 | 1.62+7 | 3.37+7 | 1.09+7 | 4.37+6 | 7.18+7 | 3.55+7 | 2.06+7 |
| | SUMMER 1 | 2024 | 1169 | 1999 | 60 | 3.60+7 | 1.65+7 | 7.85+6 | 2.65+7 | 6.84+6 | 2.09+6 | 6.25+7 | 2.33+7 | 9.94+6 |
| A | SURRY 1 | 2012 | 574 | 2005 | 53 | 2.41+7 | 8.25+6 | 2.96+6 | 6.26+6 | 1.77+6 | 5.35+5 | 3.04+7 | 1.00+7 | 3.50+6 |
| A | SURRY 2 | 2013 | (a) | 2005 | | | | | | | | | | |
| B | SUSQUEHANNA 1 | 2022 | 8680 | 1995 | 87 | 8.67+7 | 4.83+7 | 2.76+7 | 4.70+7 | 1.42+7 | 5.12+6 | 1.34+8 | 6.25+7 | 3.27+7 |
| B | SUSQUEHANNA 2 | 2024 | (a) | 1995 | | | | | | | | | | |
| | THREE MILE ISL 1 | 2008 | 518 | 1997 | 53 | 2.28+7 | 1.15+7 | 6.01+6 | 9.51+6 | 3.63+6 | 1.48+6 | 3.23+7 | 1.51+7 | 7.49+6 |
| | TROJAN | 2011 | 661 | 1998 | 54 | 2.61+7 | 1.26+7 | 6.25+6 | 1.21+7 | 4.21+6 | 1.58+6 | 3.82+7 | 1.68+7 | 7.83+6 |
| E | TURKEY PT 3 | 2007 | 816 | 1995 | 58 | 2.91+7 | 1.62+7 | 9.27+6 | 1.17+7 | 4.81+6 | 2.12+6 | 4.08+7 | 2.10+7 | 1.14+7 |
| E | TURKEY PT 4 | 2007 | (a) | 1995 | | | | | | | | | | |
| B | VOGTLE 1 | 2027 | 3251 | 2000 | 85 | 8.36+7 | 3.85+7 | 1.65+7 | 4.52+7 | 1.07+7 | 3.86+6 | 1.29+8 | 4.72+7 | 1.96+7 |
| B | VOGTLE 2 | 2028 | (a) | 2000 | | | | | | | | | | |
| | VT YANKEE 1 | 2012 | 1598 | 1993 | 54 | 2.56+7 | 1.57+7 | 9.89+6 | 1.75+7 | 6.85+6 | 2.98+6 | 4.31+7 | 2.26+7 | 1.29+7 |
| | WASH NUCLEAR 2 | 2023 | 4642 | 1994 | 69 | 5.18+7 | 3.03+7 | 1.82+7 | 3.72+7 | 1.14+7 | 4.22+6 | 8.90+7 | 4.17+7 | 2.24+7 |
| | WATERFORD 3 | 2024 | 1671 | 1997 | 64 | 4.32+7 | 2.18+7 | 1.14+7 | 3.13+7 | 8.57+6 | 2.82+6 | 7.45+7 | 3.04+7 | 1.42+7 |
| A | WATTS BAR 1 | 2025 | 3411 | 1994 | 87 | 8.76+7 | 5.12+7 | 3.07+7 | 5.46+7 | 1.60+7 | 5.85+6 | 1.42+8 | 6.72+7 | 3.66+7 |
| A | WATTS BAR 2 | 2027 | (a) | 1994 | | | | | | | | | | |
| | WOLF CREEK 1 | 2025 | 1313 | 1999 | 62 | 3.93+7 | 1.80+7 | 8.55+6 | 2.86+7 | 7.26+6 | 2.20+6 | 6.79+7 | 2.53+7 | 1.08+7 |
| | YANKEE-ROWE 1 | 2001 | 264 | 1990 | 52 | 2.66+7 | 1.47+7 | 1.06+7 | 8.89+6 | 4.77+6 | 2.69+6 | 2.95+7 | 1.95+7 | 1.33+7 |
| A | ZION 1 | 2008 | 1943 | 1988 | 70 | 5.42+7 | 4.07+7 | 3.10+7 | 2.63+7 | 1.29+7 | 6.96+6 | 8.05+7 | 5.36+7 | 3.80+7 |
| A | ZION 2 | 2008 | (a) | 1988 | | | | | | | | | | |
| | TOTAL | | | | | 4.60+9 | 2.37+9 | 1.53+9 | 2.46+9 | 8.57+8 | 3.71+8 | 6.46+9 | 3.23+9 | 1.90+9 |

A INDICATES COMMON POOL SHARED BY TWO REACTORS: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
B INDICATES POOLS CONNECTED BY TRANSFER CANAL: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE
E INDICATES POOLS REQUIRING CASK TRANSFER: CAPACITIES AND INVENTORIES ARE COMBINED WITH ONLY ONE FULL CORE RESERVE

(a) INCLUDED IN UNIT 1.
(b) NEED ADDITIONAL SPACE AS OF 1986.

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13. ABSTRACT (200 words or less)

A series of value/impact studies were performed for accident preventive and mitigative options intended to reduce the risks posed by the storage of spent fuel at nuclear power plants in spent fuel storage pools. Options studied included limited low-density reracking of spent fuel, installation of water sprays above the spent fuel pool, and the installation of redundant cooling and/or makeup systems. The results of these studies indicated that the measures were in general not likely to be cost effective. The reason for this is due to both the low likelihood of a spent fuel pool accident that could result in a significant radiological release and high cost of proposed modifications. These insights are largely contingent upon compliance with guidelines developed for licensees to assure the safe handling of heavy loads in the vicinity of spent fuel pools thus reducing the likelihood of the structural failure of the pool and rapid loss of water inventory due to a cask drop event.

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Value/Impact Analysis
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