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C. M. Heeb
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Prepared for the U.S. Department of Energy
under Contract DE-AC06-76RLO 1830

Pacific Northwest Laboratory
Operated for the U.S. Department of Energy
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1.0 INTRODUCTION

Under the provisions of the Nuclear Waste Policy Act of 1982 (NWPA), the Department of Energy (DOE) is responsible for the management and ultimate permanent disposal of the civilian radioactive waste generated as a result of commercial nuclear power plant operations in the U.S. The Office of Civilian Radioactive Waste Management (OCRWM) has been established within DOE to plan for and carry out this responsibility.

The greatest portion of the radioactive waste covered under this government responsibility will be spent nuclear fuel discharged from commercial nuclear power plants. Because most of the spent fuel that will ultimately require disposal has not yet been generated, planning for the management and disposal of this spent fuel must be based primarily on projections of future spent fuel discharges from these plants.

The DOE Energy Information Administration (EIA) annually publishes projections of nuclear energy generation on an overall, industry composite basis.[1] These EIA energy projections provide several scenarios representing different assumptions about the future growth of nuclear energy capacity in the U.S. Multiple scenarios allow analysis of the sensitivity of results and decisions to varying assumptions.

The EIA nuclear energy projections provide the basis for planning by OCRWM. However, the projections do not contain the specific reactor-by-reactor information that is needed to perform detailed analyses of, for example, waste system logistics, requirements for interim storage of spent fuel, or anticipated variations in the physical characteristics of the spent fuel to be received for disposal. Therefore, to provide a more detailed basis for such analyses, this study was performed to develop detailed reactor-specific spent fuel discharge projections corresponding to the EIA nuclear energy growth projections.

The basic source of data used to develop the reactor-specific information was the Spent Fuel Data Base (SFDB) maintained by Pacific Northwest Laboratory (PNL) for the DOE Commercial Spent Fuel Management (CSFM) Program. This data base, which is updated annually, is based on information supplied directly by

the nuclear utilities. The SFDB consists of detailed historical and projected data on reactor operation, spent fuel discharges and shipments, and spent fuel storage and handling capabilities.

The CSFM Program uses this SFDB for a number of planning purposes, including the preparation of annual projections of future requirements for additional spent fuel storage capacity.[2] The data base also provides the basic information on spent fuel for inclusion in the DOE Integrated Data Base (IDB) maintained by Oak Ridge National Laboratory.[3]

Two of the EIA nuclear growth scenarios were chosen as bases for developing the reactor-specific spent fuel discharge projections: the Middle Case and the No New Orders Case. The Middle Case has been previously selected by the OCRWM as the base case for waste management planning purposes. The No New Orders Case was included to provide an additional data set which could be used to analyze the sensitivity of analytical results and management decisions to possible growth reductions in the United States nuclear industry.

The No New Orders Case includes only nuclear power plants that are currently operating and a subset of the plants currently under construction. EIA assumes that some of the plants currently under construction will not be completed, and that others will be delayed beyond official utility startup estimates. The Middle Case includes additional generic power plants not currently on order but scheduled to start operation in 2001. These plants will provide sufficient power generation capacity to correspond to the overall nuclear energy production rates in the EIA projections. In addition, for plants now under construction, startup dates are earlier and the assumed number of canceled plants is lower than for the No New Orders Case.

The detailed information in the CSFM Program's SFDB could not be used directly to provide reactor-specific information corresponding to the EIA nuclear growth projections. This is because EIA and the individual utilities make different assumptions about the future online availabilities (i.e., capacity factors) of the individual power plants and the projected startup dates for plants under construction. Therefore, adjustments in the data were required to properly match the reactor capacity factors and startup dates to the EIA assumptions.

For the Middle Case, a further requirement was the specification of generic power plants to be added to the existing reactor population starting in 2001 to meet the overall installed capacity assumptions implicit in the EIA projections. Reactor types consistent with currently existing power plants were chosen to represent these generic power plants. This permitted detailed information for the generic power plants to be obtained from the SFDB in the same manner as for the currently existing or planned reactors.

2.0 SUMMARY

The original spent fuel utility data base (SFDB) has been adjusted to produce agreement with the EIA nuclear energy generation forecast for the Middle Case.[1] An adjusted data base conforming to the EIA No New Orders Case was also produced to provide for less optimistic forecasts of future nuclear capacity growth than the EIA Middle Case.

The procedure developed allows the detail of the utility data base to remain intact, while the overall nuclear generation is changed to match any uniform nuclear generation forecast. This procedure adjusts the weight of the reactor discharges as reported on the SFDB and makes a minimal (less than 10%) change in the original discharge exposures in order to preserve discharges of an integral number of fuel assemblies.

The procedure used in developing the reactor-specific spent fuel discharge projections, as well as the resulting data bases themselves, are described in detail in this report. Discussions of the procedure cover the following topics:

- a description of the data base;
- data base adjustment procedures;
- addition of generic power reactors; and
- accuracy of the data base adjustments.

Adjustment of the utility data base to match the No New Orders Case and the Middle Case has reduced the spent fuel discharge and storage requirements projections compared to the original SFDB. This reduction is due to the lower estimates of plant capacity factors and to the more delayed estimates of plant availability dates in the EIA forecasts relative to the original utility data.

Reactor-specific discharge and storage requirements for the Middle Case are presented in Appendix A. Annual and cumulative discharge projections are provided. Annual and cumulative requirements for additional storage are shown for the maximum at-reactor (AR) storage assumption, and for the maximum AR with

transshipment assumption. These compare directly to the storage requirements from the utility-supplied data, as reported in the Spent Fuel Storage Requirements Report.[2]

The reactor-specific spent fuel discharge projections contained in this report cover the period from 1984 through 2020. This covers a total cumulative spent fuel inventory of nearly 125,000 MTIHM (metric tons initial heavy metal) for the Middle Case and just over 90,000 MTIHM for the No New Orders Case. However, the methodology used can also be extended to provide consistent projections covering longer periods of time (e.g., projections up to a total of 140,000 MTIHM of spent fuel would cover the nominal capacity of the first two civilian nuclear waste repositories), or to provide detailed projections corresponding with other EIA growth scenarios (i.e., the High Case or the Low Case).

The results presented in this report for the Middle Case include:

- the disaggregated spent fuel discharge projections; and
- disaggregated projections of requirements for additional spent fuel storage capacity prior to 1998.

Descriptions of the methodology and the results are included in the next section of this report. Details supporting the discussions in the main body of the report, including descriptions of the capacity and fuel discharge projections, are included in the Appendix A.

3.0 DISCUSSION OF RESULTS

The SFDB is a compendium of information on U.S. commercial power reactor spent fuel and other reactor-specific information. It is based on data provided by the utility owners and represents their estimate of the amounts and characteristics of the spent fuel discharges. Electrical energy generation may be derived from the spent fuel quantities and spent fuel exposure contained in the data base.

3.1 DATA BASE DESCRIPTION

The SFDB contains a file for each reactor. The first portion of the file consists of time-independent information such as the location, various power ratings, dates of start-up and final shutdown, and detailed information on fuel stored in the reactor's pool(s). The second portion consists of the historical record of fuel discharges by batch or sub-batch with discharge exposure range, number of assemblies, and the uranium mass for each batch. This, and succeeding portions, are organized by operating cycle (i.e., by the period between successive discharges). The third portion of the SFDB contains projected discharge information for 1984 and beyond.

The electrical energy generation implicit in the spent fuel data base is entirely independent of the nuclear energy generation forecasts made by EIA. This report describes how the SFDB was adjusted to be consistent with these nuclear energy generation forecasts. The technical steps involved in adjusting the data base to conform to the EIA projections are described in this section. The principal requirement of the adjustment was to retain as much of the detailed utility estimates of exposure, plant capacity factor, and discharge schedules as possible, while matching the EIA electrical energy generation forecast.

3.2 DATA BASE ADJUSTMENT PROCEDURE

The steps taken in the adjustment procedure are shown in Figure 1. Processing steps are shown in rectangular blocks which are assigned a number in the upper left hand corner of the block. Data bases are shown as slanted

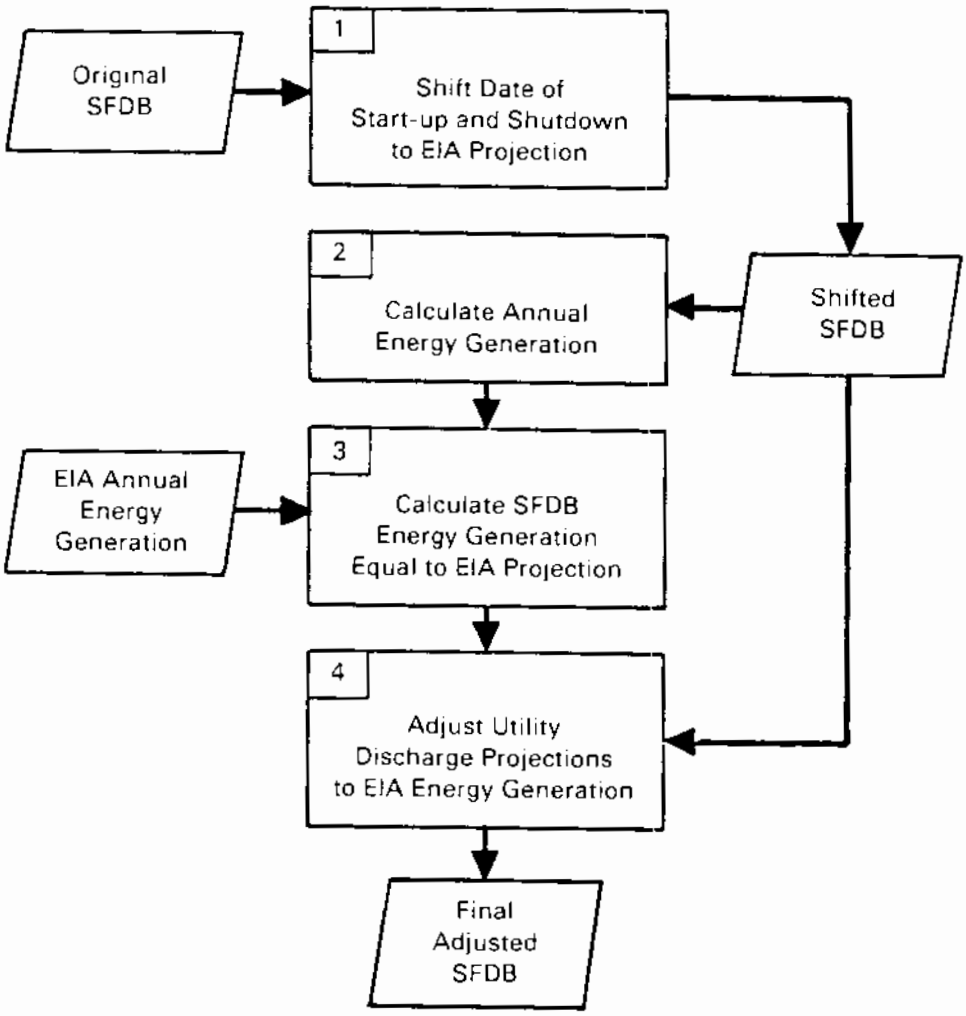


FIGURE 1. Spent Fuel Data Base Adjustment Process

blocks. The adjustment process required the construction of four major processors. Each of these processors is described in the sections that follow. The adjustment process is concerned entirely with the time beyond 1983, since historical information is left unchanged by the adjustment process.

3.2.1 Step 1 - Shift Utility Data Base Start-up and Shutdown Dates

Reactors starting up from 1984 to 2020 according to the EIA schedule were checked against the utility-supplied start-up dates on the SFDB. If the dates were different, the start-up date on the SFDB was shifted to a date six months prior to the EIA date of first commercial power generation. Thus the new date used was the date of first electrical generation, which by EIA convention is

six months prior to the date of first commercial power generation. The start-up date for each reactor is shown in Appendix A, Table A.1.

The SFDB discharge dates prior to the EIA start-up date were, of course, eliminated. However the discharged batches from the eliminated dates were moved to the nearest SFDB date after the new start-up date. In cases where that date was "too close" to the start-up date, that date was eliminated and the next discharge date was chosen to receive the discharge batch collection. The criteria used to judge whether the first adjusted discharge date was "too close" was the utility estimate of the plant capacity factor. If the capacity factor based on the adjusted discharge date greater than 0.90, the next available utility-supplied date was selected. Operation from start-up to the new first discharge date was assumed to be at the utility-supplied capacity factor. In cases where the cycle length was longer than the utility-supplied cycle, the energy generation estimated by this procedure is greater than the utility-projected energy generation. Additional fuel is added to the original discharge estimate to reflect this added energy generation. This procedure leaves the majority of the utility discharge dates unchanged and preserves the utility estimate of the first cycle capacity factor.

The shutdown dates were adjusted to agree with the EIA data. In accordance with EIA ground rules, the full core was assumed to be discharged in the year following the last energy generation. Next the generic reactors were added, if required and as described in Section 3.3 to match installed nuclear generation capacity. The installed capacity match was accomplished at the end of Step 1.

3.2.2 Step 2 - Calculation of Electrical Energy Generation from the SFDB

The cycle-energy generation from the SFDB was calculated by adding the product of discharge exposure and mass of the discharged batch for each batch discharged from the cycle. For reactors at equilibrium, the energy generated by the discharged fuel during its residence in the core is equal to the energy generated by the entire core during the cycle of discharge. To illustrate for a three batch core fuel management plan at equilibrium, each in-core fuel batch generates a fixed fraction of core power during equilibrium operation: F1, F2, F3. If E is the energy generation during each equilibrium cycle, the energy

generated by the batch scheduled for discharge, ED, would be the sum of the energy generated by the discharge batch during each of the three cycles of residence:

$$ED = E \times F1 + E \times F2 + E \times F3.$$

By factoring out E, the equation is expressed as follows:

$$ED = E \times (F1 + F2 + F3).$$

Since the sum of F1 + F2 + F3 is 1.0 by definition, the discharge energy equals the energy generated during each equilibrium cycle:

$$ED = E.$$

This would be true for any core equilibrium replacement fraction. For reactors undergoing initial startup, the ratio of first cycle energy generation to first-discharge batch-energy generation will not be unity, but will approximate the reciprocal of the core fraction discharged if power sharing by in-core batches is proportional to batch size. Thus for one third core replacement, the ratio of first-cycle energy to the energy generated by the fuel in the first discharge would approximate 3. The second discharge ratio would approximate half of this, or 1.5. The third discharge ratio would approximate 1, and would remain 1 for all subsequent discharges.

In actual practice power sharing between in-core fuel batches is not exactly equitable, and fuel management plans do not specify that the same fraction of the core will be replaced for every refueling outage. However, when large numbers of reactors are involved, and when over-all energy generation over several years during which only a small fraction of the total energy generation is from plants not at equilibrium is of primary interest, average non-equilibrium ratios of cycle energy to batch energy may be approximated with sufficient accuracy. Detailed fuel management plans for several reactors were analyzed to obtain a more realistic ratio of cycle to batch energy. The ratios

of cycle energy to batch energy were calculated and the results are summarized in the following table of factors:

TABLE 1. Cycle to Batch Energy Ratio by Cycle

	First	Second	Third	Fourth	Equilibrium
PWR	2.857	1.266	1.095	1.073	1.000
BWR	3.663	1.404	1.111	1.058	1.000

The energy of a given cycle is calculated by adding the product of exposure and mass discharged over all batches from the cycle and then multiplying that result by the appropriate factor from the preceding table.

3.2.3 Step 3 - Determination of EIA and SFDB Annual Energy Adjustment Ratio

The shifted SFDB energy is calculated for each plant in each cycle. The cycle energies are then allocated to each year according to the number of months in the year for that cycle. The annual energy generation projected by EIA is then compared to the annual sum of energy generation from the shifted SFDB. An annual correction factor equal to the EIA energy generation divided by the SFDB energy is then calculated. The target annual energies are then used in the final adjustment process.

3.2.4 Step 4 - Adjustment of Utility Discharges to Match EIA Energy Projections

The projected SFDB discharge amounts are modified to be consistent with the target energies. The adjustment assumptions are that no discharge batches of less than eleven assemblies are adjusted, and that a slight adjustment to the utility-supplied exposure is made to preserve an integral number of discharge assemblies in the batches of eleven or more assemblies. Adjusting only batches greater than ten assemblies assures that no exposure will be adjusted by more than ten percent in order to preserve an integral number of assemblies. The larger batch exposures are adjusted a little more than originally called for in order to compensate for the unadjusted fuel batches having ten or less assemblies. The original adjustment ratio determined in Step 3 is preserved by this process.

3.3 GENERIC REACTOR ADDITIONS

The SFDB contains information only on those reactors which were operating, or were in the planning stage by some U.S. utility in 1984. In order to meet EIA energy generation forecast after 1984 for the Middle Case, it is necessary to include generic reactors in the shifted data base at stage one in Figure 1. Two actual reactors were selected to represent the generic PWR and BWR. Both were nominal 1100 MWe plants and both were on an 18 month refueling schedule. The PWR design exposure was 35455 MWD/MTIHM, and the BWR burnup was 30400 MWD/MTIHM. Relevant details for the two generic plant types are shown in Table 2.

Increases in capacity do not in general represent the addition of an integral number of plants, each with a fixed plant capacity. Fractional additions to capacity were represented by delayed start-up of one of the plants of each plant type which were otherwise started up in January each year, to maintain the correct cumulative capacity. Thus if the accumulated new capacity was equivalent to 15.65 generic plants by a given year, one of the plants would be started up in the fourth month of that year: $(1.0 - 0.65) \times 12.0 = 4.2$. The start-up of integral additions to capacity was in accordance with the EIA convention of commercial operation additions in July of each year, with a six month interval between first electrical generation and commercial operation.

It is important for logistics modeling to maintain reasonable geographic accuracy for the projected spent fuel discharges. This requires that the generic reactors be added with regional diversity. Assumption of a single site in each geographic region which would contain all generic reactors allocated to

TABLE 2. Generic Reactor Characteristics

	PWR	BWR
Rated Power Level	1100 MWe	1100 MWe
Thermal Efficiency	33.0%	33.0%
Fuel Cycle Length	18 Months	18 Months
Equilibrium Enrichment	3.5 wt%	3.0 wt%
Discharge Exposure	35,455 MWD/MTIHM	30,400 MWD/MTIHM
Discharge Months	April, October	February, August

the region provides the necessary diversity for logistics models if regional sites near the geographic centroid of existing reactors are chosen. For this study, one such site was selected for each federal region. A map of the federal regions is shown in Appendix B. The site selected in each region is shown in Table 3 by existing reactor name. It is not expected that these sites will actually ever contain all or even any of the generic reactors located in the region. The sites were selected only because they are close to the center of existing reactors in each region.

The number of reactors added to each region was determined by apportioning the plants according to the projected electricity generation in 1995 from nuclear power plants in the region. It is assumed that a similar proportion of the nuclear generated electricity will be generated in the future as was generated in 1995. Table 4 shows the projected electricity generation in 1995 for each region and each region's percent of the total generation. Appendix Table A.2 shows the actual federal region placement and date of commercial operation for each generic reactor.

TABLE 3. Regional Sites for Generic Reactors

Federal Region	Generic Reactor Site
I	New England - Millstone
II	New York/New Jersey - Indian Point
III	Middle Atlantic - Peach Bottom
IV	South Atlantic - Bellefonte
V	Midwest - Cook
VI	Southwest - Commanche Peak
VII	Central - Cooper
VIII	North Central -No Site (<1/Reactor)
IX	West - San Onofre
X	Northwest - WNP-2

TABLE 4. 1995 Projected Energy Generation by Federal Region

Federal Region	Energy Generation (TWh)	Percent of Total
I	42.6	6.6
II	52.2	8.1
III	74.9	11.6
IV	187.5	29.2
V	134.7	20.9
VI	47.0	7.3
VII	22.5	3.5
VIII	0.9	0.1
IX	52.3	8.1
X	28.2	4.4

3.4 ADJUSTED DATA BASE ACCURACY

The adjustment procedure is not a numerically exact process. Approximations were required during the assignment of annual energies to operating cycle energies. A linear weighting scheme was used to assign the annual energy to an operating cycle in proportion to the number of months of that year that are in the cycle.

Using the following array and index definitions, the adjustment procedure approximation can be expressed in general terms:

I = cycle index, J = year index, R = reactor index

M(I,J,R) = months in cycle I, year J, reactor R

ED(I,R) = shifted data base energy for cycle I, reactor R

EA(J) = annual target energy generation, year J.

The annual shifted data base energy for reactor R is calculated using the equation:

$$JED(J,R) = \sum_{I} M(I,J,R)/12 \times ED(I,R).$$

The annual energies are then summed over reactors:

$$SED(J) = \sum_{R} JED(J,R).$$

A ratio of annual target energies is calculated:

$$RATIO(J) = EA(J)/SED(J).$$

An effective ratio is calculated for each reactor cycle using CL(I,R), the cycle length in months for cycle I, reactor R:

$$ERATIO(I,R) = \sum_{J} [(M(I,J,R)/CL(I,R)) \times RATIO(J)].$$

The effective ratio is used to produce an adjusted data base energy for cycle I, reactor R and the discharged amounts are changed by the same ratio:

$$ADJED(I,R) = ERATIO(I,R) \times ED(I,R).$$

This process produces an adjusted data base. To test the accuracy of the adjusted data base, the adjusted cycle energies were reallocated to years, added up over all the reactors operating in a given year and compared with the target energy, EA(J), in test year, J. In other words, the following hypothetical equality was tested for each year, J:

$$\sum_{R} YADJED(J,R) \stackrel{?}{=} EA(J), \text{ where}$$

$$YADJED(J,R) = \sum_{I} M(I,J,R)/12 \times ADJED(I,R).$$

To determine the mathematical conditions under which this is a valid equation YADJED(J,R) can be analyzed by substituting the array definitions into the preceding equation which defines YADJED(J,R):

$$\sum_R \text{YADJED}(J,R) =$$

$$\frac{\sum_R \sum_I M(I,J,R)/12 \times ED(I,R) \times \sum_J M(I,J,R)/CL(I,R) \times EA(J)}{\sum_R \sum_I M(I,J)/12 \times ED(I,R)}$$

The double summation over R and I in the numerator is identical to the double sum in the denominator. When the expression $\sum_J M(I,J,R)/CL(I,R) \times EA(J)$ reduces to EA(J), the adjustment is exact.

The array CL(I,R) is the cycle length in months. If M(I,J,R) is summed over J years for a given reactor cycle, it must equal the cycle length:

$$CL(I,R) = \sum_J M(I,J,R).$$

The sum can be reduced to unity for each value of I and R only if all of the annual target energies in the sum EA(J) are equal and can be factored out of the sum. When this assumption is made the fraction reduces to EA(J) and the adjustment method is exact. Thus, the adjusted SFDB annual energy will equal the target EIA energy exactly only if those energies are equal for a period of time before and after the test year. Forecasts wherein the annual energy generation changes in abrupt steps will be less accurately adjusted. It is therefore a mandatory step in the adjustment process to calculate the accuracy of the adjustment for each adjusted data base.

The data base adjustment process allows a complete check on the accuracy of the approximation. When the final adjusted data base is produced, the annual adjusted energies can be calculated and summed over all reactors by performing Step 2. The resulting annual sum can be compared to the target annual energies by performing Step 3. The resulting annual energy adjustment ratios are generally very close to unity. Thus, the adjustment process converges to within a few percent after a single iteration.

The adjustment process approximation can be explained by a numerical example. If an eighteen month cycle were made up of three months of the first year, twelve months of the next year and three months of the third year, the cycle energy would be:

$$ECYCLE = 3/12 \times E1 + 12/12 \times E2 + 3/12 \times E3,$$

where E1, E2, and E3 are the annual energies of the first, second and third years respectively. If the annual energies are the target EIA energies, then ECYCLE would be the cycle energy generation on the data base that would exactly match the target energies. Now if ESFDB is the unadjusted cycle energy, the adjustment ratio would be ECYCLE/ESFDB. After the adjustment is made, ESFDB is replaced by ECYCLE, and all discharges are adjusted by the adjustment factor ECYCLE/ESFDB. The allocation of cycle energy to years would be EADJ1 = 3/18 x ECYCLE for the first year. The original allocation is 3/12 x E1. If the adjustment were exact, then the ratio of adjusted first year allocation, EADJ1, to 3/12 x E1 should equal unity. The ratio is:

$$\frac{3/18 \times (3/12 \times E1 + 12/12 \times E2 + 3/12 \times E3)}{3/12 \times E1}$$

This expression will be unity only if E1 = E2 = E3.

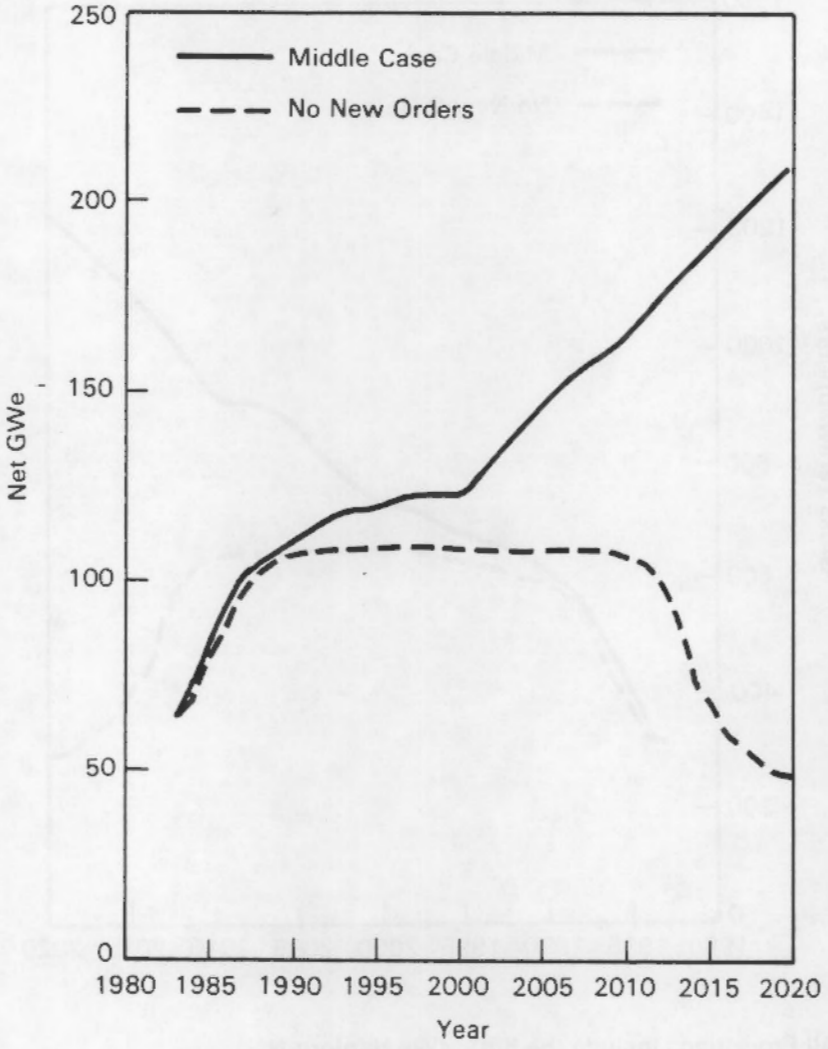
3.5 DATA BASE ADJUSTMENT RESULTS

The results of adjustments to the SFDB are highlighted in this section. Specifically the comparison between the target EIA capacities and energy generation, and the after-adjustment capacities and energy generation is shown. It is impossible to achieve numerical identity for two basic reasons. First, the data sources are different. The utilities supply the plant capacity numbers in the SFDB. EIA sources are independent, and while there may be differences in some detail, the overall agreement should be quite close. Second, the energy generation adjustment algorithm is not exact where adjacent year target energies differ greatly. This generally produces some minor differences between the target energy and the energy used to adjust spent fuel amounts.

Table 5 shows the installed capacity and energy generated by the target EIA forecast and the SFDB No New Orders Case. The agreement is within two percent for both energy and capacity. Figure 2 shows a plot of the installed capacity and Figure 3 shows a plot of the nuclear energy generation projections.

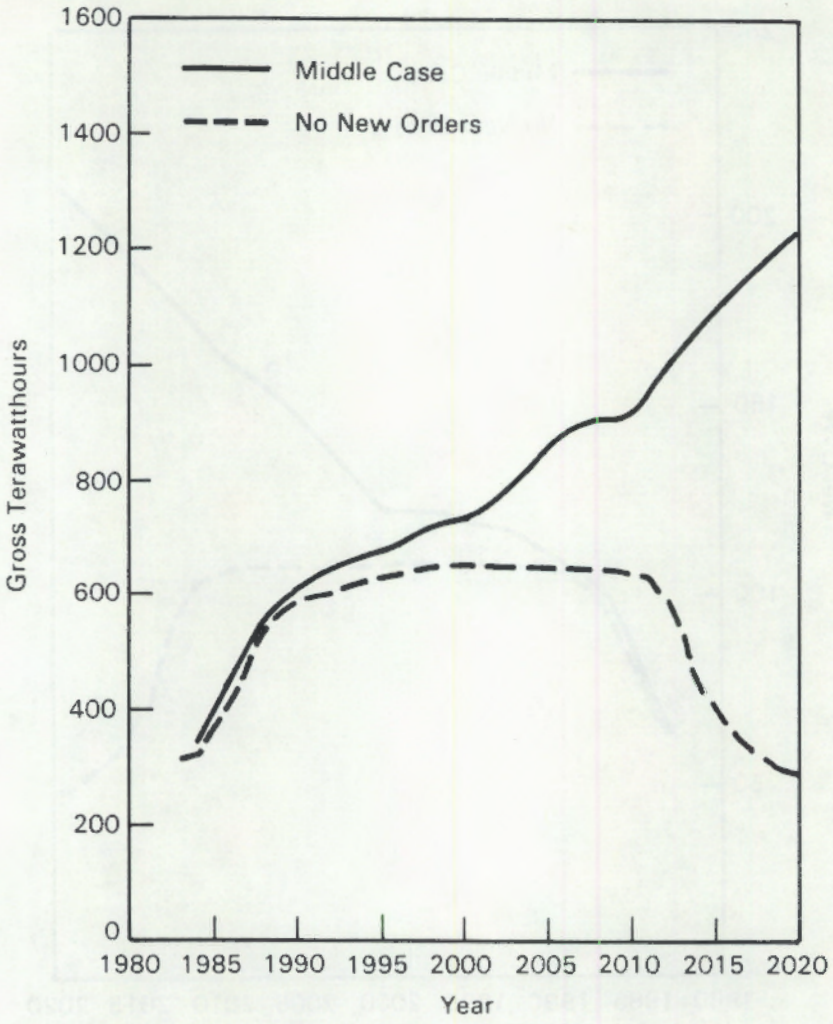
TABLE 5. No New Orders Case Capacity and Energy Comparison

Year	Installed Capacity (Gigawatts)		Electrical Energy (Billion kWh)	
	EIA	SFDB	EIA	SFDB
1984	68.0	67.2	303.0	308.5
1985	80.4	79.6	351.6	350.5
1986	87.0	86.1	392.8	396.7
1987	96.7	95.7	453.3	457.1
1988	103.4	102.5	505.3	503.9
1989	104.7	103.7	536.0	536.5
1990	105.8	104.8	553.2	552.4
1991	107.0	106.4	564.2	561.6
1992	107.0	107.0	568.1	570.7
1993	108.2	108.1	583.9	581.3
1994	108.2	108.2	586.3	588.7
1995	108.2	108.2	596.5	593.9
1996	108.2	108.2	597.3	599.5
1997	108.2	108.2	606.8	606.6
1998	108.2	108.2	616.3	613.9
1999	108.2	108.2	616.3	616.5
2000	108.2	108.2	616.3	616.2
2001	108.2	108.2	616.3	616.2
2002	108.2	108.0	616.3	616.0
2003	108.1	108.0	615.3	615.2
2004	108.1	108.0	615.3	614.6
2005	108.1	108.0	615.3	615.5
2006	108.0	108.0	614.9	615.0
2007	108.0	108.0	614.9	614.7
2008	108.0	107.6	614.9	614.0
2009	107.6	106.6	612.7	613.3
2010	105.9	105.3	603.2	603.4
2011	105.3	104.4	599.7	599.9
2012	99.4	98.6	566.3	567.0
2013	90.9	90.2	517.6	518.6
2014	73.6	73.1	419.2	417.8
2015	68.0	67.6	387.3	386.3
2016	60.2	59.8	342.7	341.9
2017	56.3	56.1	320.7	321.0
2018	53.0	52.8	301.6	301.8
2019	48.6	48.5	276.9	277.0
2020	48.6	48.5	276.9	276.9



All Projections Include the 850-MWe
Hanford-N Reactor

FIGURE 2. Installed EIA Nuclear Capacity Projections



All Projections Include the 850-MWe Hanford-N Reactor, Which is Assumed to Generate 3.5 TWh Annually Until its Retirement

FIGURE 3. Projected EIA Nuclear Energy Generation

Table 6 shows the extent to which the utility exposures had to be changed to produce an integral number of assemblies for the No New Orders Case. Over 77% of the adjustments were 1% or less. All adjustments were less than 10%.

Table 7 shows annual Middle Case capacity and energy generation values. These are also plotted in Figures 2 and 3. The capacities agree to within 1.3 percent. The energy generations are also generally within 1 percent of the EIA target except for the period around the year 2010. Here the decrease in annual target energy in 2009, followed by steep increases in capacity additions afterwards results in a numerical approximation of 3.3 percent which is the largest error produced in any application of the adjustment procedure. Pursuit of better agreement is possible by applying the adjustment process repeatedly. However, in view of the uncertainty inherent in forecast events around 2010, a decision was made to not pursue better agreement.

TABLE 6. No New Orders Case Adjustments to Base Exposure

Adjustment Range (%)	Number of Assemblies
0.0 - 1.0	238990
1.0 - 2.0	54689
2.0 - 3.0	8324
3.0 - 4.0	2401
4.0 - 5.0	820
5.0 - 6.0	753
6.0 - 7.0	793
7.0 - 8.0	796
8.0 - 9.0	302
9.0 - 10.0	70

TABLE 7. Middle Case Capacity and Energy Comparison

Year	Installed Capacity (Gigawatts)		Electrical Energy (Billion kWh)	
	EIA	SFDB	EIA	SFDB
1984	72.7	72.8	318.3	321.4
1985	83.9	84.0	376.5	378.5
1986	93.4	93.5	422.9	427.5
1987	103.4	103.4	385.3	488.2
1988	103.9	104.0	527.3	526.6
1989	106.3	106.3	555.7	553.0
1990	110.0	110.0	577.9	576.7
1991	112.3	112.3	588.1	589.6
1992	116.0	116.0	610.6	614.2
1993	118.3	118.2	633.6	630.4
1994	118.3	118.2	639.8	642.6
1995	118.3	118.2	654.4	652.6
1996	120.8	120.4	660.0	660.7
1997	122.1	121.6	679.2	679.2
1998	121.9	121.4	692.7	691.3
1999	121.9	121.4	695.9	695.9
2000	121.8	121.3	698.0	694.6
2001	127.1	127.9	714.9	716.6
2002	132.3	133.4	735.9	741.4
2003	137.6	137.9	761.7	768.3
2004	142.8	142.3	787.3	787.9
2005	148.1	147.2	814.3	820.8
2006	151.6	151.0	835.4	843.3
2007	155.2	154.6	849.6	854.4
2008	158.7	157.2	860.6	869.7
2009	162.3	162.0	855.3	879.6
2010	165.8	165.2	877.0	906.8
2011	170.5	168.3	906.6	924.1
2012	175.1	173.3	944.9	955.7
2013	179.8	177.8	975.4	988.7
2014	184.4	183.3	1003.3	1010.9
2015	189.1	187.7	1036.0	1044.4
2016	193.6	193.3	1068.3	1072.6
2017	198.2	197.7	1094.1	1096.6
2018	202.7	201.0	1119.9	1121.1
2019	207.3	205.4	1145.2	1146.1
2020	211.8	210.9	1170.0	1172.0

Table 8 shows the Middle Case exposure adjustment results. Over 75 percent of the adjustments were 1 percent or less to produce an integral number of assemblies.

Table 9 shows the annual EIA to SFDB ratio that was used to adjust the discharge amounts for the No New Orders Case and the Middle Case. In general, the plant capacity factors assumed by EIA were lower than those from the utilities. The ratios are therefore less than unity by 10 to 15 percent.

TABLE 8. Middle Case Adjustments to Base Exposure

Adjustment Range (%)	Number of Assemblies
0.0 - 1.0	940922
1.0 - 2.0	245083
2.0 - 3.0	12612
3.0 - 4.0	3424
4.0 - 5.0	2034
5.0 - 6.0	44220
6.0 - 7.0	4864
7.0 - 8.0	297
8.0 - 9.0	135
9.0 - 10.0	50

TABLE 9. Utility to EIA Required Energy Adjustment Factors--EIA/SFDB

Year	No New Orders Case (%)	Middle Case (%)
1984	86.0	88.7
1985	86.6	85.5
1986	83.6	83.0
1987	84.2	83.2
1988	83.3	85.7
1989	87.3	87.0
1990	87.0	87.2
1991	85.7	86.4
1992	86.3	86.6
1993	88.4	88.1
1994	88.2	87.5
1995	89.8	89.3
1996	89.8	89.6
1997	81.4	90.9
1998	92.8	92.1
1999	92.3	92.0
2000	92.5	92.6
2001	92.7	91.1
2002	92.5	90.3
2003	91.8	89.4
2004	92.3	89.9
2005	92.6	89.3
2006	92.4	89.0
2007	92.5	88.6
2008	93.2	88.0
2009	93.5	86.3
2010	93.0	86.5
2011	92.1	86.6
2012	91.9	87.1
2013	94.2	86.6
2014	95.7	86.9
2015	94.5	87.4
2016	96.7	87.6
2017	95.5	87.8
2018	95.4	88.0
2019	94.6	88.1
2020	93.4	88.3

3.6 MODIFIED DATA BASE ANALYSIS

The final modified SFDB can be used to analyze any scenario previously analyzed using the utility data base. Results of two SFDB analyses will be presented in the final portion of this document. The first analysis will cover projected cumulative spent fuel discharges, while the second analysis will cover projected additional spent fuel storage requirements.

3.6.1 Spent Fuel Discharge Projections

Utility projections of cumulative spent fuel discharges through 1993 were reported in the Spent Fuel Storage Requirements Report.[2] Extending this analysis using the projections from both the unmodified utility data and the modified data base results in the data presented in the following tables and figures. Table 10 shows the cumulative spent fuel discharge projections for the utility data base and the adjusted No New Orders and Middle Case data bases from 1984 through 2020. This data is plotted in Figure 4. It is evident that the utility projections are always higher than the No New Orders Case. This is due to the delay in plant start-ups in the No New Orders projections and to the lower operating plant capacity factor assumptions. The Middle Case projections are higher than the No New Orders Case for two reasons: first, it is assumed that the start-up delays in the Middle Case are not as great as for the No New Orders Case; and second, after the year 2000 additional generic reactor are assumed to begin operation. The discharge projections are roughly equal to utility projections in the year 2010 and then begin to significantly exceed them in following years.

Annual reactor-by-reactor discharge projections for the Middle Case are shown in Table A.3. Table A.4 shows the cumulative inventory at each reactor for the Middle Case.

TABLE 10. Cumulative Spent Fuel Discharges (MTIHM) 1984 - 2020

Year	Utility Data	No New Orders Case	Middle Case
1983	10142	10142	10142
1984	11425	11301	11307
1985	13185	12701	12769
1986	15210	14127	14297
1987	17483	15716	16027
1988	20209	17684	18089
1989	22677	19641	20204
1990	25403	21758	22354
1991	28189	23957	24602
1992	30915	26125	26923
1993	33853	28396	29317
1994	36761	30687	31945
1995	39554	32984	34443
1996	42517	35390	37087
1997	45467	37798	39804
1998	48219	40152	42403
1999	51149	42557	45113
2000	54074	45015	47916
2001	56663	47233	50463
2002	59684	49816	53463
2003	62629	52307	56438
2004	65545	54713	59478
2005	68452	57187	62917
2006	71576	59585	66145
2007	74697	61947	69995
2008	78275	64346	74004
2009	80935	66817	78852
2010	83578	69299	83059
2011	85846	71783	87325
2012	88189	74899	91430
2013	90274	77665	95223
2014	92625	81144	99560
2015	94651	83175	103456
2016	96647	85223	107419
2017	98428	86782	111690
2018	100013	88344	115928
2019	101557	89801	120190
2020	103140	90756	124672

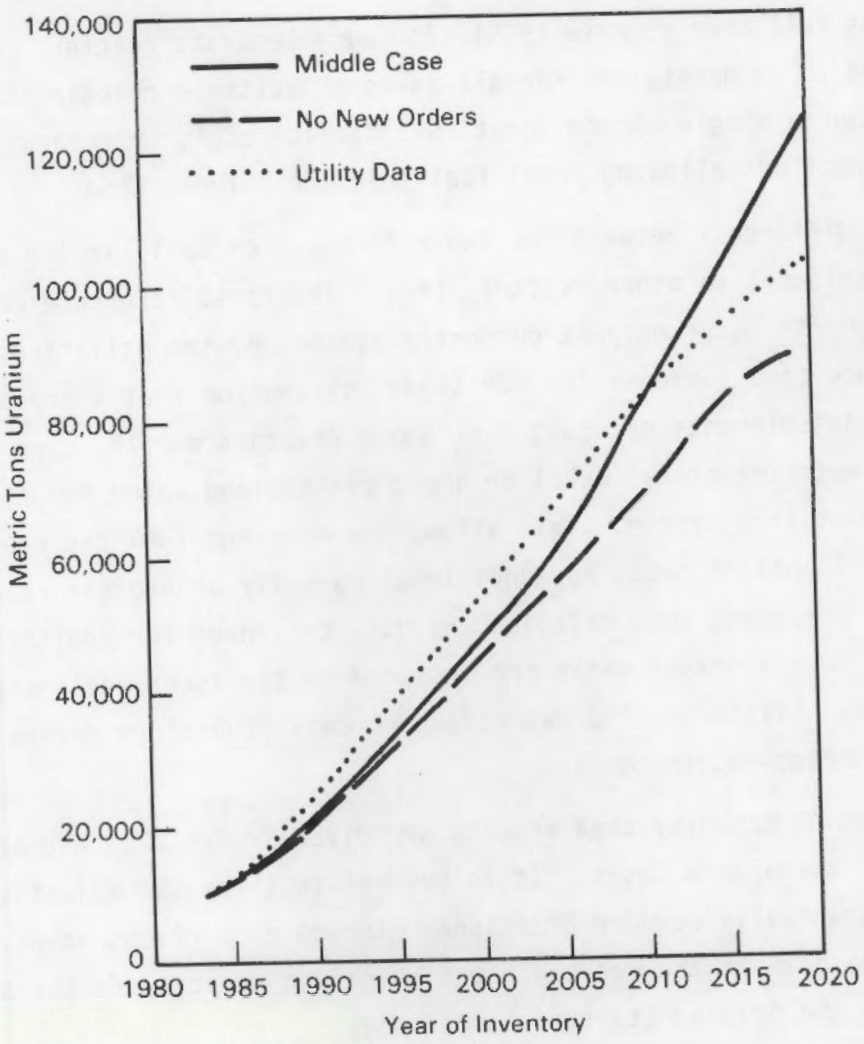


FIGURE 4. Projected Cumulative Spent Fuel Inventory: Adjusted SFDB Scenarios and Utility Projections

3.6.2 Spent Fuel Storage Requirements

The final result to be reported is the analysis of additional fuel storage requirements. In the Spent Fuel Storage Requirements Report several cases were analyzed using utility data over the 1984 through 1993 time period.(2) This analysis will extend the two reference cases from that report over the 1984 through 1997 period for all three data bases.

The two reference cases are based on the maximum AR storage capacities of the individual reactor pools, as determined by the utilities. Both cases include allowances for maintaining full core discharge capability, also

referred to as full core reserve (FCR), for each separate reactor. A single FCR is assumed to be maintained for all units at multiple reactor stations employing either a single common spent fuel storage pool, or separate pools with interconnections allowing spent fuel transfer between them.

The only difference between the two references cases is in the consideration of transshipment to other reactor sites. The first reference case assumes that transshipments occur only as currently planned by the utilities. The second reference case includes the additional assumption that there are no constraints on transshipments of spent fuel among reactors of like type [i.e., among boiling water reactors (BWRs) or among pressurized water reactors (PWRs)] within a given utility system. This allows unused spent fuel storage capacity at one reactor to offset needs for additional capacity at another reactor in the same utility system, thus delaying the utility's need for additional storage capacity. Such transshipments are included in the spent fuel management plans of several utilities. The two reference cases therefore define a range of potential storage requirements.

The maximum AR capacity case results are given in Table 11 and are plotted in Figure 5 for these data bases. It is evident that the two adjusted data bases have substantially reduced additional storage requirement needs. This reduction is due both to the reduced plant operating capacity factor and (in later years) to the delayed startup assumptions.

The maximum AR capacity with intra-utility transshipment case results are given in Table 12 and are plotted in Figure 6. Again, a substantially reduced additional storage requirement need is evident under the adjusted data base energy generation and capacity assumptions.

Reactor-by-reactor annual and cumulative storage requirements for the Middle Case are shown in Appendix A tables. Tables A.5 and A.6 show the additional annual and cumulative requirements for the maximum AR storage capacity scenario, while Tables A.7 and A.8 show the additional annual and cumulative requirements for the maximum AR storage capacity with intra-utility transshipment case.

TABLE 11. Cumulative Additional Storage Requirements - Maximum AR Storage

Year	Utility Data	No New Orders Case	Middle Case
1984	0	0	0
1985	1	0	0
1986	28	18	20
1987	119	46	60
1988	266	155	180
1989	459	303	339
1990	893	483	564
1991	1429	866	969
1992	1861	1199	1311
1993	2472	1647	1776
1994	3276	2220	2368
1995	4086	2696	2886
1996	5362	3476	3696
1997	6613	4309	4580

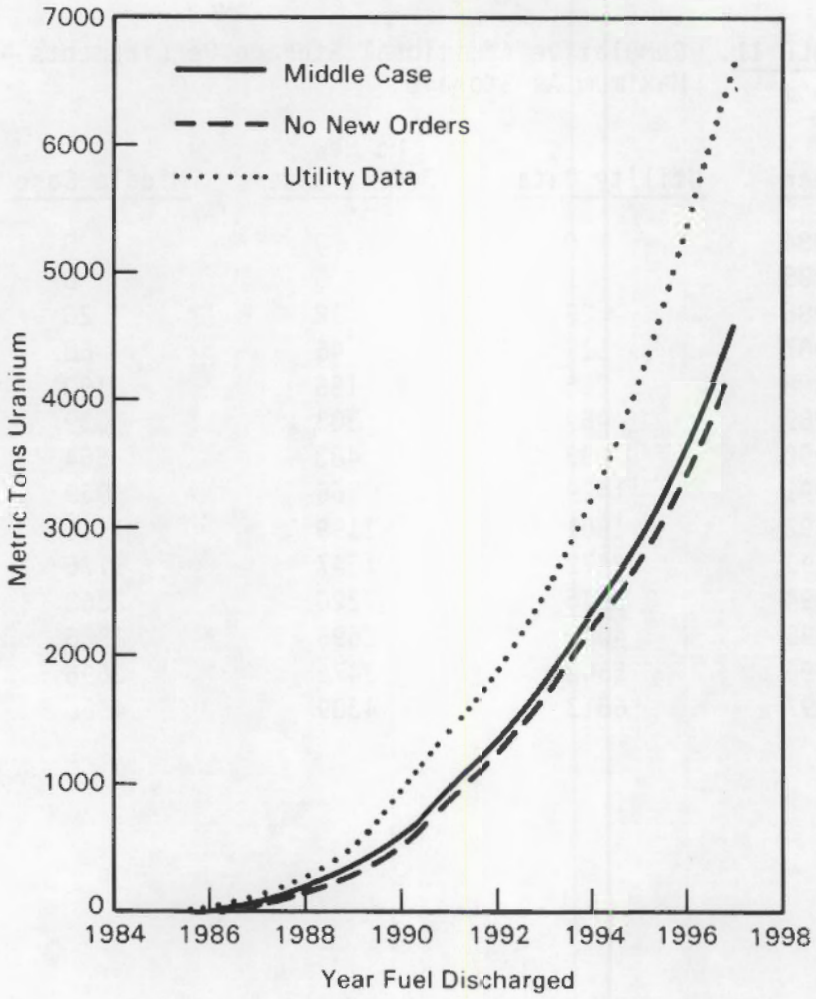


FIGURE 5. Projected Additional Cumulative Storage Requirements - Maximum At-Reactor Storage Capacity: Adjusted Data Bases and Utility Projections

TABLE 12. Cumulative Additional Storage Requirements (MTIHM) - Maximum AR Storage Capacity Plus Transshipment

Year	Utility Base	No New Orders Case	Middle Case
1984	0	0	0
1985	0	0	0
1986	0	0	0
1987	23	5	9
1988	23	5	9
1989	61	34	39
1990	147	44	55
1991	369	121	147
1992	664	299	324
1993	1047	500	546
1994	1534	878	903
1995	2231	1323	1323
1996	3298	1870	1852
1997	4533	2526	2592

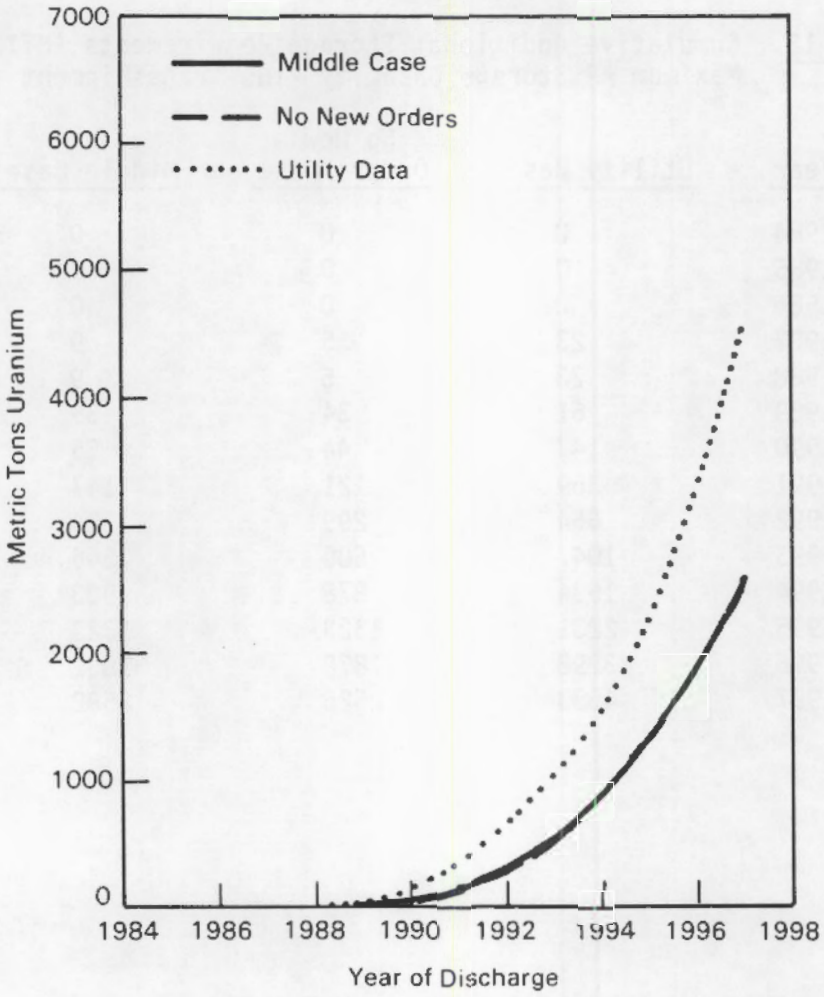


FIGURE 6. Projected Additional Cumulative Storage Requirements - Maximum At-Reactor Storage Capacity Plus Transshipment: Adjusted Data Bases and Utility Projections

4.0 REFERENCES

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2. DOE. 1984. Spent Fuel Storage Requirements: An Update of DOE/RL-83-1. DOE/RL-84-1, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

3. DOE. 1984. Spent Fuel and Radioactive Waste Inventory, Projections, and Characteristics. DOE/RW-0006, U.S. Department of Energy, Washington, D.C.

APPENDIX A

DETAILED DATA BASE RESULTS

APPENDIX A

DETAILED DATA BASE RESULTS

The following tables provide detailed results for all three scenarios: Utility, No New Orders, and Middle Case. The first two tables show comparisons between data base information, while the remaining tables supply reactor-specific information for the Middle Case. Similar reactor-specific information is furnished by the Spent Fuel Storage Requirements Report[2] for the Utility Data Base.

TABLE A.1. Startup and Shutdown Dates for Utility, No New Orders, and Middle Cases

Reactor	Utility Case		No New Orders Case		Middle Case	
	Startup	Down	Startup	Down	Startup	Down
DRESDEN-1	1960/07	1978	1960/07	1978	1960/07	1978
YANKEE	1961/06	2001	1961/06	2002	1961/06	1997
INDIAN POINT-1	1962/12	1974	1962/12	1974	1962/12	1974
BIG ROCK POINT	1962/12	2000	1962/12	2005	1962/12	1999
HUMBOLDT BAY	1963/09	1976	1963/09	1976	1963/09	1976
SAN ONOFRE-1	1968/01	1999	1968/01	2009	1968/01	2004
CONNECTICUT YANKEE	1968/01	2004	1968/01	2009	1968/01	2004
NINE MILE POINT-1	1969/12	2005	1969/12	2010	1969/12	2005
LA CROSSE	1969/12	1992	1969/12	2008	1969/12	2003
OYSTER CREEK	1969/12	2004	1969/12	2009	1969/12	2004
GINNA	1970/07	2006	1970/07	2011	1970/07	2006
POINT BEACH-1	1970/12	2010	1970/12	2012	1970/12	2007
MILLSTONE-1	1970/12	2007	1970/12	2011	1970/12	2006
ROBINSON-2	1971/03	2007	1971/03	2011	1971/03	2006
MONTICELLO	1971/06	2007	1971/06	2012	1971/06	2007
DRESDEN-3	1971/11	2006	1971/11	2011	1971/11	2006
PALISADES	1971/12	2011	1971/12	2012	1971/12	2007
DRESDEN-2	1972/06	2008	1972/06	2011	1972/06	2006
POINT BEACH-2	1972/10	2012	1972/10	2013	1972/10	2008
VERMONT YANKEE	1972/11	2012	1972/11	2012	1972/11	2007
MAINE YANKEE	1972/12	2008	1972/12	2013	1972/12	2008
PILGRIM-1	1972/12	2013	1972/12	2013	1972/12	2008
SURRY-1	1972/12	2008	1972/12	2013	1972/12	2008
TURKEY POINT-3	1972/12	2007	1972/12	2012	1972/12	2007
QUAD CITIES-1	1973/02	2007	1973/02	2011	1973/02	2006
QUAD CITIES-2	1973/03	2007	1973/03	2011	1973/03	2006
SURRY-2	1973/05	2008	1973/05	2013	1973/05	2008
TURKEY POINT-4	1973/06	2007	1973/06	2012	1973/06	2007
OCONEE-1	1973/07	2007	1973/07	2012	1973/07	2007
FORT CALHOUN-1	1973/09	2008	1973/09	2013	1973/09	2008
PRAIRIE ISLAND-1	1973/12	2008	1973/12	2013	1973/12	2008
ZION-1	1973/12	2007	1973/12	2013	1973/12	2008
KEWAUNEE	1974/06	2014	1974/06	2013	1974/06	2008
COOPER	1974/07	2008	1974/07	2013	1974/07	2008
PEACH BOTTOM-2	1974/07	2008	1974/07	2013	1974/07	2008

(contd) TABLE A.1.

Reactor	Utility Case		No New Orders Case		Middle Case	
	Startup	Down	Startup	Down	Startup	Down
INDIAN POINT-2	1974/07	2006	1974/07	2011	1974/07	2006
BROWNS FERRY-1	1974/08	2014	1974/08	2012	1974/08	2007
ZION-2	1974/09	2008	1974/09	2013	1974/09	2007
OCONEE-2	1974/09	2010	1974/09	2012	1974/09	2008
THREE MILE ISLAND-1	1974/09	2008	1974/09	2013	1974/09	2008
ARKANSAS NUCL ONE-1	1974/12	2014	1974/12	2013	1974/12	2008
PRAIRIE ISLAND-2	1974/12	2008	1974/12	2013	1974/12	2008
PEACH BOTTOM-3	1974/12	2008	1974/12	2013	1974/12	2008
OCONEE-3	1974/12	2009	1974/12	2012	1974/12	2007
DUANE ARNOLD	1975/02	2010	1975/02	2015	1975/02	2010
BROWNS FERRY-2	1975/03	2014	1975/03	2012	1975/03	2008
RANCHO SECO-1	1975/04	2008	1975/04	2013	1975/04	2008
CALVERT CLIFFS-1	1975/05	2009	1975/05	2014	1975/05	2009
FITZPATRICK	1975/07	2015	1975/07	2015	1975/07	2010
D C COOK-1	1975/08	2009	1975/08	2014	1975/08	2009
MILLSTONE-2	1975/12	2010	1975/12	2015	1975/12	2010
HATCH-1	1975/12	2016	1975/12	2014	1975/12	2009
BRUNSWICK-2	1976/05	2010	1976/05	2015	1976/05	2010
BEAVER VALLEY-1	1976/05	2010	1976/05	2015	1976/05	2010
TROJAN	1976/05	2015	1976/05	2016	1976/05	2011
INDIAN POINT-3	1976/08	2015	1976/08	2014	1976/08	2009
ST. LUCIE-1	1976/12	2010	1976/12	2015	1976/12	2010
BRUNSWICK-1	1977/03	2010	1977/03	2015	1977/03	2010
BROWNS FERRY-3	1977/03	2017	1977/03	2013	1977/03	2008
CRYSTAL RIVER-3	1977/03	2017	1977/03	2013	1977/03	2008
CALVERT CLIFFS-2	1977/04	2009	1977/04	2014	1977/04	2009
SALEM-1	1977/06	2017	1977/06	2013	1977/06	2008
DAVIS-BESSE-1	1977/12	2017	1977/12	2016	1977/12	2011
FARLEY-1	1977/12	2012	1977/12	2017	1977/12	2012
NORTH ANNA-1	1978/06	2011	1978/06	2016	1978/06	2011
D C COOK-2	1978/07	2009	1978/07	2014	1978/07	2009
HATCH-2	1979/09	2019	1979/09	2017	1979/09	2012
ARKANSAS NUCL ONE-2	1980/03	2020	1980/03	2017	1980/03	2012
NORTH ANNA-2	1980/12	2011	1980/12	2016	1980/12	2011
FARLEY-2	1981/07	2011	1981/07	2017	1981/07	2012

(contd) TABLE A.1.

Reactor	Utility Case		No New Orders Case		Middle Case	
	Startup	Down	Startup	Down	Startup	Down
SEQUOYAH-1	1981/07	2021	1981/07	2015	1981/07	2010
MC GUIRE-1	1981/09	2022	1981/09	2018	1981/09	2013
SALEM-2	1981/10	2020	1981/10	2013	1981/10	2008
SEQUOYAH-2	1982/06	2022	1982/06	2015	1982/06	2010
LA SALLE-1	1982/10	2022	1983/07	2023	1982/10	2022
SUSQUEHANNA-1	1983/06	2022	1983/06	2022	1983/06	2022
SAN ONOFRE-2	1983/08	2012	1983/08	2018	1983/08	2013
ST. LUCIE-2	1983/08	2023	1983/08	2022	1983/08	2022
SUMMER	1984/01	2024	1983/07	2018	1984/01	2013
MC GUIRE-2	1984/02	2024	1983/07	2018	1984/02	2013
PALO VERDE-1	1984/03	2023	1985/07	2025	1984/12	2022
GRAND GULF-1	1984/04	2022	1984/08	2024	1984/05	2021
SAN ONOFRE-3	1984/04	2013	1983/03	2023	1984/04	2022
LA SALLE-2	1984/04	2023	1984/08	2024	1984/05	2022
WNP-2	1984/06	2013	1984/08	2024	1984/05	2024
DIABLO CANYON-1	1984/06	2024	1985/06	2024	1984/05	2023
FERMI-2	1984/06	2024	1985/10	2024	1985/07	2023
WATTS BAR-1	1984/11	2024	1985/02	2024	1984/11	2023
WATERFORD-3	1984/11	2024	1985/02	2024	1984/11	2023
SUSQUEHANNA-2	1984/11	2023	1984/11	2024	1984/08	2022
COMANCHE PEAK-1	1984/12	2024	1985/07	2024	1985/03	2024
SEABROOK-1	1984/12	2024	1987/02	2026	1987/01	2023
BYRON-1	1985/01	2018	1985/07	2024	1985/01	2024
DIABLO CANYON-2	1985/01	2025	1986/07	2025	1985/07	2025
CALLAWAY-1	1985/01	2024	1985/04	2024	1985/01	2023
SHOREHAM	1985/01	2024	1985/11	2024	1985/06	2023
WOLF CREEK	1985/02	2025	1985/11	2024	1985/08	2024
MIDLAND-2	1985/02	2026	1988/01	2027	1987/07	2025
PALO VERDE-2	1985/03	2024	1986/04	2025	1985/11	2023
LIMERICK-1	1985/04	2014	1986/07	2025	1985/10	2024
PERRY-1	1985/05	2025	1986/07	2025	1986/03	2024
CATAWBA-1	1985/06	2025	1985/10	2024	1985/07	2024
WATTS BAR-2	1985/12	2025	1988/02	2027	1987/03	2024
RIVER BEND-1	1985/12	2025	1986/10	2025	1986/02	2024
HARRIS-1	1986/03	2016	1986/10	2025	1986/02	2024

TABLE A.1. (contd)

Reactor	Utility Case		No New Orders Case		Middle Case	
	Startup	Down	Startup	Down	Startup	Down
HOPE CREEK-1	1986/03	2027	1987/07	2026	1986/12	2026
BYRON-2	1986/04	2019	1987/03	2026	1986/07	2024
BRAIDWOOD-1	1986/04	2020	1987/04	2026	1986/08	2024
PALO VERDE-3	1986/05	2026	1988/02	2027	1987/07	2025
BEAVER VALLEY-2	1986/05	2025	1987/03	2026	1986/07	2024
MILLSTONE-3	1986/05	2014	1987/01	2026	1986/07	2024
COMANCHE PEAK-2	1986/06	2025	1987/07	2026	1986/09	2024
ZIMMER-1	1986/08	2019				
NINE MILE POINT-2	1986/10	2026	1987/08	2026	1987/01	2025
CLINTON-1	1986/11	2016	1987/07	2026	1987/01	2024
SEABROOK-2	1987/03	2028			1992/01	2027
VOGTLE-1	1987/03	2027	1988/07	2027	1987/08	2026
MIDLAND-1					1988/07	2023
BRAIDWOOD-2	1987/04	2020	1990/11	2029	1989/07	2029
CATAWBA-2	1987/06	2027	1988/10	2027	1987/11	2026
SOUTH TEXAS PROJ-1	1987/06	2027	1988/12	2027	1987/12	2026
PERRY-2	1988/05	2028	1991/07	2030	1990/05	2027
WNP-3					1990/09	2031
MARBLE HILL-1	1988/06	2028				
VOGTLE-2	1988/09	2028			1991/11	2027
GRAND GULF-2	1988/12	2028			1990/06	2027
BELLEFONTE-1	1989/01	2026	1989/10	2028	1989/04	2026
SOUTH TEXAS PROJ-2	1989/06	2029			1991/08	2028
LIMERICK-2	1990/04	2015			1993/05	2034
MARBLE HILL-2	1990/06	2030				
BELLEFONTE-2	1991/01	2027	1993/02	2029	1992/04	2032
WNP-1	1991/01	2020			1992/04	2032
HARTSVILLE-A1					1993/06	2030
HARTSVILLE-A2					1996/12	2030
YELLOW CREEK-1					1996/12	2030
YELLOW CREEK-2					1997/12	2030
CARROLL COUNTY-1	2004/06	2039				
CARROLL COUNTY-2	2005/06	2040				

TABLE A.2. Startup and Shutdown Dates of Middle Case Generic Reactors

Reactor Name[a]	Fed. Reg.	Startup	Shutdown
P010201	V	2001/01	2040
P010101	IV	2001/01	2040
P010301	IV	2001/01	2040
B010101	III	2001/01	2040
B010205	V	2001/05	2041
P010410	IV	2001/10	2041
P020201	IX	2002/01	2041
P020101	II	2002/01	2041
B020101	IV	2002/01	2041
P020308	V	2002/08	2041
B020210	VI	2002/10	2042
P030101	I	2003/01	2042
P030201	IV	2003/01	2042
B030104	III	2003/04	2043
P030305	V	2003/05	2042
B040101	IV	2004/01	2043
P040201	II	2004/01	2043
P040101	IV	2004/01	2043
P040310	V	2004/10	2044
B050201	V	2005/01	2044
B050101	IV	2005/01	2044
P050301	III	2005/01	2044
P050201	X	2005/01	2044
P050101	IX	2005/01	2044
B050307	VI	2005/07	2045
P060201	IV	2006/01	2045
P060101	VII	2006/01	2045
P060305	I	2006/05	2045
B060105	V	2006/05	2046
P070501	V	2007/01	2046
P070401	IX	2007/01	2046
P070201	II	2007/01	2046
P070101	IV	2007/01	2046
P070301	III	2007/01	2046
B070101	IV	2007/01	2046

TABLE A.2. (contd)

Reactor Name[a]	Fed. Reg.	Startup	Shutdown
B070201	III	2007/01	2046
B070307	V	2007/07	2047
P070608	VI	2007/08	2046
P080601	V	2008/01	2047
P080401	II	2008/01	2047
P080301	I	2008/01	2047
P080201	III	2008/01	2047
P080101	IV	2008/01	2047
P080501	IV	2008/01	2047
B080201	X	2008/01	2047
B080101	IX	2008/01	2047
B080302	IV	2008/02	2047
P091301	I	2009/01	2048
P091201	III	2009/01	2048
P091101	VI	2009/01	2048
P091001	I	2009/01	2048
P090901	IX	2009/01	2048
P090601	VII	2009/01	2048
P090501	VI	2009/01	2048
P090401	V	2009/01	2048
P090301	IV	2009/01	2048
P090201	III	2009/01	2048
P090101	V	2009/01	2048
P090801	II	2009/01	2048
P090701	IV	2009/01	2048
B090201	V	2009/01	2048
B090301	IV	2009/01	2048
B090101	IV	2009/01	2048
B090401	II	2009/01	2048
B090501	III	2009/01	2048
B090601	IV	2009/01	2048
B090705	V	2009/05	2049
P091408	VI	2009/08	2048
P100201	X	2010/01	2049
P100101	IX	2010/01	2049
P100503	III	2010/01	2049

TABLE A.2. (contd)

Reactor Name[a]	Fed. Reg.	Startup	Shutdown
P100301	IV	2010/01	2049
P100401	V	2010/01	2049
B100101	IV	2010/01	2049
B100201	I	2010/01	2049
B100308	V	2010/08	2050
B110101	VII	2011/01	2050
B110201	IV	2011/01	2050
P110201	II	2011/01	2050
P110301	IX	2011/01	2050
P110401	IV	2011/01	2050
P110501	V	2011/01	2050
P110601	VI	2011/01	2050
P110101	IV	2011/01	2050
B110302	III	2011/02	2050
P110703	V	2011/03	2050
P120201	I	2012/01	2051
P120401	IV	2012/01	2051
P120501	V	2012/01	2051
P120101	IV	2012/01	2051
P120301	II	2012/01	2051
B120201	X	2012/01	2051
B120101	IX	2012/01	2051
B120308	III	2012/08	2052
P130301	VI	2013/01	2052
P130201	V	2013/01	2052
P130101	IV	2013/01	2052
P130401	IV	2013/01	2052
B130101	V	2013/01	2052
P130502	IV	2013/02	2052
B130203	II	2013/03	2053
P140501	I	2014/01	2053
P140401	V	2014/01	2053
P140301	IV	2014/01	2053
P140201	IX	2014/01	2053
P140101	III	2014/01	2053
B140101	IV	2014/01	2053

TABLE A.2. (contd)

Reactor Name[a]	Fed. Reg.	Startup	Shutdown
B140201	V	2014/01	2053
B140308	VI	2014/08	2054
P140609	VII	2014/09	2053
P150101	IV	2015/01	2054
P150201	III	2015/01	2054
B150103	II	2015/03	2055
P150310	IV	2015/10	2055
B160101	IV	2016/01	2055
P160301	X	2016/01	2055
P160201	IX	2016/01	2055
P160101	V	2016/01	2055
B160211	V	2016/11	2056
P170101	III	2017/01	2056
P170201	IV	2017/01	2056
B170110	I	2017/10	2057
P170311	V	2017/11	2057
P180101	VI	2018/01	2057
P180203	IV	2018/03	2057
B180106	II	2018/06	2058
B190101	V	2019/01	2058
P190201	IV	2019/01	2058
P190101	IX	2019/01	2058
P190305	III	2019/05	2058
P200201	V	2020/01	2059
P200101	IV	2020/01	2059
B200101	IV	2020/01	2059
P200309	VII	2020/09	2059
B200209	X	2020/09	2060

(a) The generic reactor name consists of four identification fields:
The first character denotes reactor type, P for PWR, B for BWR;
The next two characters are the last two digits of the startup year;
The second set of two characters denote the sequence within a year;
The last two characters denote the startup month.

TABLE A.3. Middle Case 1983 Inventory and Projected Annual Reactor Discharges

REACTOR	INV. 1983	ASSEMBLIES 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	INV. 1983	MTHM 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
ARKANSAS NUCL ONE-1	316	63	0	58	58	0	58	60	0	59	60	147	29	0	27	27	0	27	28	0	27	28
ARKANSAS NUCL ONE-2	168	0	55	51	0	51	52	0	53	52	0	72	0	23	23	0	22	2	0	23	22	0
BEAVER VALLEY-1	155	65	0	61	59	0	63	64	0	63	64	72	30	0	28	27	0	29	30	0	29	30
BEAVER VALLEY-2	0	0	0	0	0	0	53	61	0	62	66	0	0	0	0	0	0	24	28	0	29	30
BELLEFONTE-1	0	0	0	0	0	0	0	0	0	118	0	0	0	0	0	0	0	0	0	0	52	0
BELLEFONTE-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIG ROCK POINT	150	19	17	17	18	17	18	18	18	18	0	19	2	2	2	2	2	2	2	2	2	0
BRAIDWOOD-1	0	0	0	0	53	0	59	46	50	51	50	0	0	0	0	27	0	25	19	21	22	21
BRAIDWOOD-2	0	0	0	0	0	0	0	43	49	49	50	0	0	0	0	0	0	0	18	21	21	21
BROWNS FERRY-1	1053	0	227	218	0	220	0	198	186	0	193	191	0	40	38	0	39	0	35	33	0	34
BROWNS FERRY-2	888	227	0	215	210	0	198	188	0	194	194	161	40	0	39	36	0	35	33	0	34	35
BROWNS FERRY-3	996	0	215	0	201	0	193	191	0	191	195	180	0	38	0	36	0	34	34	0	34	34
BRUNSWICK-1	656	160	0	160	0	148	155	0	157	156	0	123	30	0	30	0	28	29	0	29	29	0
BRUNSWICK-2	424	160	0	162	145	0	156	157	0	156	158	79	30	0	30	27	0	29	29	0	29	30
BYRON-1	0	0	0	63	0	55	48	50	50	50	50	0	0	0	27	0	23	20	21	21	21	21
BYRON-2	0	0	0	0	0	73	53	49	50	51	50	0	0	0	0	0	31	22	21	21	22	21
CALLAWAY-1	0	0	0	58	0	74	76	0	77	78	0	0	0	0	27	0	34	33	0	33	33	0
CALVERT CLIFFS-1	476	0	66	61	0	63	63	0	63	63	0	180	0	25	23	0	25	25	0	25	25	0
CALVERT CLIFFS-2	320	65	63	0	59	63	0	63	63	0	63	127	24	25	0	23	25	0	25	25	0	25
CATAWBA-1	0	0	0	0	53	52	51	53	55	53	0	0	0	0	0	22	22	22	22	23	22	0
CATAWBA-2	0	0	0	0	0	0	72	0	54	52	54	0	0	0	0	0	0	30	0	23	22	23
CLINTON-1	0	0	0	0	0	0	234	208	0	193	202	0	0	0	0	0	0	43	38	0	35	37
COMANCHE PEAK-1	0	0	0	0	78	54	54	56	58	57	58	0	0	0	0	36	25	25	26	23	23	23
COMANCHE PEAK-2	0	0	0	0	0	58	52	56	55	60	58	0	0	0	0	0	27	24	26	25	24	23
CONNECTICUT YANKEE	493	50	45	0	45	46	45	0	47	45	46	203	21	19	0	19	19	19	0	19	19	19
COOPER	848	111	0	106	93	101	102	102	105	102	102	160	20	0	19	17	18	19	19	19	19	19
CRYSTAL RIVER-3	259	0	62	53	0	54	55	0	57	56	0	120	0	29	25	0	25	25	0	26	26	0
D C COOK-1	466	0	81	70	0	69	71	0	74	0	71	204	0	35	31	0	32	33	0	34	0	33
D C COOK-2	245	80	82	0	74	75	0	81	75	0	80	114	37	34	0	30	30	0	33	30	0	32
DAVIS-BESSE-1	140	60	0	56	56	0	55	58	0	57	58	66	28	0	26	26	0	26	27	0	27	27
DIABLO CANYON-1	0	0	59	0	53	54	54	58	0	56	55	0	0	27	0	24	25	25	27	0	26	25
DIABLO CANYON-2	0	0	0	0	80	55	0	0	61	51	56	0	0	0	0	37	25	0	0	28	23	26
DRESDEN-1	683	0	0	0	0	0	0	0	0	0	0	69	0	0	0	0	0	0	0	0	0	0
DRESDEN-2	1213	183	0	162	163	0	168	171	0	170	172	222	34	0	29	29	0	30	31	0	31	31
DRESDEN-3	1168	0	159	127	0	138	131	0	138	133	0	222	0	29	23	0	25	24	0	25	24	0
DUANE ARNOLD	576	106	0	103	100	0	103	105	0	104	105	107	19	0	19	18	0	19	19	0	19	19
FARLEY-1	196	68	65	0	62	61	0	64	64	0	64	90	31	30	0	29	28	0	30	30	0	30
FARLEY-2	116	0	67	62	0	61	63	0	64	64	0	53	0	31	29	0	28	29	0	29	29	0
FERMI-2	0	0	0	0	221	0	252	0	245	0	253	0	0	0	0	40	0	46	0	45	0	46
FITZPATRICK	816	0	180	168	0	167	173	0	175	173	0	153	0	33	31	0	30	31	0	32	31	0
FORT CALHOUN-1	265	37	39	0	38	38	0	39	39	0	39	98	13	14	0	14	14	0	14	14	0	14
GINNA	304	23	25	24	24	24	25	25	25	25	25	118	9	9	9	9	8	9	9	9	9	9
GRAND GULF-1	0	0	0	236	0	209	225	0	224	229	0	0	0	0	42	0	37	40	0	39	40	0
GRAND GULF-2	0	0	0	0	0	0	0	0	0	283	201	0	0	0	0	0	0	0	0	0	51	37
HARRIS -1	0	0	0	0	0	46	43	0	47	44	47	0	0	0	0	0	21	20	0	22	20	22
HARTSVILLE-A1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HATCH-1	740	0	111	110	117	118	121	122	122	122	122	138	0	20	20	21	21	22	22	22	22	22

TABLE A.3. (contd)

REACTOR	INV. 1983	ASSEMBLIES 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	INV. 1983	MTIHM 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
HATCH-2	520	102	121	111	118	118	121	122	122	122	122	95	19	22	20	21	21	22	22	22	22	22
HOPE CREEK-1	0	0	0	0	0	155	0	228	230	0	233	0	0	0	0	0	28	0	41	42	0	42
HUMBOLDT BAY	250	184	0	0	0	0	0	0	0	0	0	18	13	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	160	0	0	0	0	0	0	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-2	308	61	61	0	60	62	0	63	63	0	63	139	28	28	0	27	28	0	29	29	0	29
INDIAN POINT-3	216	0	74	0	60	0	65	67	0	66	0	99	0	34	0	27	0	30	31	0	30	0
KEWAUNEE	300	35	33	33	32	33	33	33	33	33	33	118	13	13	13	12	13	13	13	13	13	13
LA CROSSE	213	21	21	20	20	21	21	21	21	21	22	25	2	2	2	2	2	2	2	2	2	2
LA SALLE-1	0	0	193	0	186	176	0	184	205	0	195	0	0	35	0	34	32	0	34	37	0	36
LA SALLE-2	0	0	0	182	191	174	0	188	207	0	196	0	0	0	33	35	32	0	34	38	0	36
LIMERICK-1	0	0	0	148	0	204	208	0	232	212	0	0	0	0	27	0	40	38	0	42	39	0
LIMERICK-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAINE YANKEE	649	66	63	0	61	61	0	63	63	0	63	245	25	24	0	23	23	0	24	24	0	24
MC GUIRE-1	29	50	51	55	49	55	52	54	0	55	53	14	23	23	25	21	23	22	23	0	23	22
MC GUIRE-2	0	0	50	56	51	53	54	0	54	53	55	0	0	23	26	23	23	23	0	23	22	23
MIDLAND-1	0	0	0	0	0	0	0	0	52	0	54	0	0	0	0	0	0	0	0	24	0	25
MIDLAND-2	0	0	0	0	0	0	0	50	55	0	63	0	0	0	0	0	0	0	23	26	0	29
MILLSTONE-1	1136	172	0	178	167	0	172	0	173	0	176	215	31	0	31	29	0	30	0	31	0	31
MILLSTONE-2	376	0	73	51	59	69	0	70	66	65	0	145	0	29	21	24	29	0	28	27	26	0
MILLSTONE-3	0	0	0	0	0	57	59	52	58	57	56	0	0	0	0	0	26	27	24	27	26	26
MONTICELLO	1016	109	101	80	87	91	89	91	91	91	0	192	19	18	18	15	16	16	16	16	16	0
NINE MILE POINT-1	1044	158	0	169	0	168	0	175	0	174	0	199	29	0	30	0	30	0	31	0	31	0
NINE MILE POINT-2	0	0	0	0	0	0	0	230	233	0	212	0	0	0	0	0	0	0	41	42	0	41
NORTH ANNA-1	193	67	58	0	58	59	0	61	60	0	61	84	31	27	0	27	27	0	28	28	0	28
NORTH ANNA-2	110	59	0	58	58	0	59	61	0	60	63	51	27	0	27	27	0	27	28	0	28	28
OCONEE-1	677	0	57	56	0	57	55	0	55	0	58	315	0	26	25	0	26	25	0	25	0	27
OCONEE-2	392	0	60	0	59	58	0	60	0	60	60	182	0	28	0	27	27	0	28	0	28	28
OCONEE-3	56	70	57	0	58	0	60	60	0	60	0	26	32	26	0	27	0	28	28	0	28	0
OYSTER CREEK	980	0	167	0	166	147	0	177	0	178	0	182	0	29	0	29	26	0	31	0	31	0
PALISADES	477	0	62	0	57	58	0	60	59	0	60	194	0	24	0	22	23	0	23	23	0	23
PALO VERDE-1	0	0	0	0	83	63	55	57	58	56	57	0	0	0	0	35	25	22	24	25	24	25
PALO VERDE-2	0	0	0	0	0	88	62	57	57	56	56	0	0	0	0	0	37	25	23	24	24	24
PALO VERDE-3	0	0	0	0	0	89	64	57	57	57	58	0	0	0	0	0	29	25	23	24	25	25
PEACH BOTTOM-2	1170	264	0	252	0	213	0	220	221	0	222	213	48	0	46	0	39	0	40	40	0	40
PEACH BOTTOM-3	1212	0	255	0	211	209	0	223	223	0	223	221	0	46	0	38	38	0	41	41	0	41
PERRY-1	0	0	0	0	0	203	240	0	252	255	0	0	0	0	0	0	37	44	0	46	46	0
PERRY-2	0	0	0	0	0	0	0	0	0	159	248	0	0	0	0	0	0	0	0	29	45	
PILGRIM-1	1004	0	0	170	158	0	167	0	168	0	165	190	0	0	30	28	0	30	0	30	0	29
POINT BEACH-1	236	0	35	30	30	31	32	32	32	32	32	94	0	14	12	12	12	11	11	11	11	11
POINT BEACH-2	244	39	28	26	28	27	28	28	28	28	28	98	16	11	10	11	10	10	10	10	10	10
PRAIRIE ISLAND-1	300	19	35	35	33	35	34	36	36	34	36	120	8	14	14	13	14	14	14	14	14	14
PRAIRIE ISLAND-2	281	35	35	33	35	0	35	36	35	35	35	112	14	14	13	14	0	14	14	14	14	14
QUAD CITIES-1	1013	183	165	0	182	155	0	154	153	0	153	192	37	29	0	32	27	0	27	27	0	27
QUAD CITIES-2	1119	0	159	140	0	145	145	0	143	146	0	213	0	28	25	0	26	26	0	25	26	0
RANCHO SECO-1	260	51	49	0	44	48	51	50	0	49	49	121	24	23	0	20	22	24	23	0	23	23
RIVER BEND-1	0	0	0	0	0	116	140	130	127	141	129	132	0	0	0	0	21	26	23	23	25	24
ROBINSON-2	157	60	0	46	41	42	0	45	46	45	46	68	26	0	20	18	20	0	19	20	19	20
SALEM-1	212	81	73	0	71	66	0	64	66	0	64	97	37	34	0	33	30	0	30	30	0	30

TABLE A.3. (contd)

REACTOR	INV.	ASSEMBLIES										INV.	MTIHM								
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
SALEM-2	72	0	80	65	53	0	62	77	0	73	75	33	0	37	30	45	0	43	35	0	34	34
SAN ONOFRE-1	94	0	0	38	0	40	0	46	0	46	0	35	0	0	14	0	15	0	17	0	17	0
SAN ONOFRE-2	0	57	0	76	67	0	70	0	69	0	71	0	24	0	28	28	0	30	0	29	0	30
SAN ONOFRE-3	0	0	55	70	0	63	0	74	0	68	0	0	0	23	28	0	26	0	32	0	29	0
SEABROOK-1	0	0	0	0	0	56	54	56	55	57	56	0	0	0	0	0	24	23	24	23	24	24
SEABROOK-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEQUOYAH-1	140	0	63	72	0	72	0	73	73	0	74	62	0	28	27	0	32	0	32	32	0	33
SEQUOYAH-2	68	66	67	0	65	0	74	73	0	73	74	31	30	30	0	29	0	33	32	0	32	33
SHOREHAM	0	0	0	0	0	248	158	0	135	142	0	0	0	0	0	0	46	29	0	25	26	0
SOUTH TEXAS PROJ-1	0	0	0	0	0	0	63	60	50	55	56	0	0	0	0	0	0	34	32	27	30	30
SOUTH TEXAS PROJ-2	0	0	0	0	0	0	0	0	0	49	58	0	0	0	0	0	0	0	0	0	26	31
ST. LUCIE-1	364	0	0	85	65	0	72	70	0	73	71	140	0	0	32	23	0	26	26	0	27	26
ST. LUCIE-2	0	0	0	79	69	0	67	75	0	68	77	0	0	0	30	25	0	25	29	0	26	29
SUMMER	0	0	0	0	56	58	0	61	62	0	64	0	0	0	0	25	26	0	27	27	0	28
SURRY-1	398	51	0	49	36	0	68	58	0	63	54	180	23	0	22	16	0	31	26	0	24	25
SURRY-2	227	0	54	52	0	51	53	0	53	54	0	104	0	25	24	0	23	24	0	24	25	0
SUSQUEHANNA-1	0	161	206	0	202	210	0	221	218	0	220	0	29	38	0	37	38	0	39	38	0	39
SUSQUEHANNA-2	0	0	0	225	195	0	211	216	0	219	221	0	0	0	41	36	0	39	38	0	39	39
THREE MILE ISLAND-1	208	0	45	64	0	63	66	0	68	66	0	97	21	21	30	0	29	31	0	31	31	0
TROJAN	260	50	38	42	41	40	42	42	42	42	42	120	23	18	19	19	18	19	19	19	19	19
TURKEY POINT-3	368	0	55	48	0	54	49	0	56	49	0	167	0	25	22	0	25	22	0	26	22	0
TURKEY POINT-4	314	60	58	0	53	55	0	55	57	0	55	143	27	26	0	24	25	0	25	26	0	25
VERMONT YANKEE	1098	97	83	0	98	71	80	81	80	90	81	200	18	15	0	16	13	15	15	15	15	15
VOGTLE-1	0	0	0	0	0	0	57	55	55	55	57	0	0	0	0	0	0	26	25	25	25	26
VOGTLE-2	0	0	0	0	0	0	0	0	0	0	58	0	0	0	0	0	0	0	0	0	0	27
WATERFORD-3	0	0	0	63	67	49	67	0	62	67	62	0	0	0	27	27	20	28	0	26	29	26
WATTS BAR-1	0	0	0	57	0	60	63	0	69	73	0	0	0	0	26	0	27	28	0	31	32	0
WATTS BAR-2	0	0	0	0	0	0	58	60	0	63	70	0	0	0	0	0	0	26	27	0	28	31
WNP-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-2	0	0	151	143	144	138	157	147	146	146	148	0	0	27	26	26	24	28	27	27	27	27
WNP-3	0	0	0	0	0	0	0	0	0	74	69	0	0	0	0	0	0	0	0	0	31	27
WOLF CREEK	0	0	0	0	0	55	59	0	62	63	0	0	0	0	0	0	25	27	0	29	29	0
YANKEE	265	38	32	0	33	31	0	35	32	35	0	63	9	7	0	8	7	0	8	7	8	0
YELLOW CREEK-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ZION-1	437	47	50	40	42	42	42	42	42	42	43	200	21	23	18	19	19	19	19	19	19	20
ZION-2	154	57	50	42	40	41	42	42	42	42	42	164	26	23	19	18	19	19	19	19	19	19
BRUNSWICK-1 PWR POOL	160	0	0	0	0	0	0	0	0	0	0	71	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 PWR POOL	144	0	0	0	0	0	0	0	0	0	0	66	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	251	0	0	0	0	0	0	0	0	0	0	145	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	459	0	0	0	0	0	0	0	0	0	0	177	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-BWR	418	0	0	0	0	0	0	0	0	0	0	96	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	235	0	0	0	0	0	0	0	0	0	0	93	0	0	0	0	0	0	0	0	0	0
BWR GENERIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PWR GENERIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE A.3. (contd)

REACTOR	ASSEMBLIES										MTIHM									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
ARKANSAS NUCL ONE-1	0	60	61	0	62	63	0	63	62	0	0	28	28	0	29	29	0	29	29	0
ARKANSAS NUCL ONE-2	53	54	0	54	55	0	56	56	0	55	23	23	0	23	23	0	24	24	0	23
BEAVER VALLEY-1	0	64	65	0	66	68	0	68	66	0	0	30	30	0	30	31	0	31	30	0
BEAVER VALLEY-2	0	65	0	65	66	0	68	68	0	66	0	31	0	30	30	0	31	31	0	30
BELLEFONTE-1	78	83	88	0	88	0	89	89	0	87	34	37	39	0	39	0	39	39	0	38
BELLEFONTE-2	82	72	0	87	0	88	90	0	88	87	28	31	0	38	0	39	40	0	39	38
BIG ROCK POINT	18	18	18	18	19	19	84	0	0	0	2	2	2	2	2	2	11	0	0	0
BRAIDWOOD-1	51	51	51	52	53	53	53	53	52	52	22	22	22	22	22	22	22	22	22	22
BRAIDWOOD-2	51	51	52	52	53	53	53	53	52	52	22	22	22	22	22	22	22	22	22	22
BROWNS FERRY-1	197	0	197	199	0	203	204	0	202	199	35	0	35	35	0	36	36	0	35	35
BROWNS FERRY-2	0	198	194	0	205	199	0	207	196	0	0	35	34	0	36	35	0	36	34	0
BROWNS FERRY-3	0	194	197	0	200	203	0	204	200	0	0	34	35	0	35	36	0	36	35	0
BRUNSWICK-1	158	160	0	162	165	0	166	166	0	163	30	30	0	30	31	0	31	31	0	30
BRUNSWICK-2	0	159	162	0	165	166	0	166	163	0	0	30	30	0	31	31	0	31	30	0
BYRON-1	51	50	51	52	52	53	53	53	52	52	22	21	22	22	22	22	22	22	22	22
BYRON-2	51	51	51	52	53	53	53	53	52	52	22	22	22	22	22	22	22	22	22	22
CALLAWAY-1	78	79	0	80	82	0	82	82	0	81	33	33	0	34	35	0	35	35	0	34
CALVERT CLIFFS-1	65	65	0	65	67	0	67	67	0	66	25	25	0	25	26	0	26	26	0	26
CALVERT CLIFFS-2	65	0	65	66	0	67	67	0	67	65	25	0	25	26	0	26	26	0	26	25
CATAWBA-1	54	57	54	55	58	57	57	0	57	54	23	24	23	23	25	24	24	0	24	23
CATAWBA-2	54	57	53	58	57	0	57	58	55	58	23	24	22	25	24	0	24	25	23	25
CLINTON-1	0	200	204	0	208	210	0	211	207	0	0	37	37	0	38	38	0	39	38	0
COMANCHE PEAK-1	58	57	58	58	59	60	60	60	59	58	23	23	23	23	24	24	24	24	24	23
COMANCHE PEAK-2	59	58	58	59	59	60	60	59	59	58	24	23	23	24	24	24	24	24	24	23
CONNECTICUT YANKEE	0	43	50	49	0	49	49	49	0	48	0	17	20	20	0	20	20	20	0	20
COOPER	103	102	102	102	106	105	104	104	103	102	19	19	18	19	19	19	19	19	19	19
CRYSTAL RIVER-3	57	57	0	58	59	0	59	59	0	58	26	26	0	27	27	0	27	27	0	27
D C COOK-1	72	0	72	72	0	74	75	0	74	73	33	0	33	33	0	34	34	0	34	33
D C COOK-2	77	0	80	81	0	82	82	0	81	80	31	0	32	33	0	33	33	0	33	32
DAVIS-BESSE-1	0	56	45	0	44	45	0	45	44	0	0	26	21	0	21	21	0	21	21	0
DIABLO CANYON-1	58	56	58	0	59	59	59	60	58	0	27	26	27	0	27	27	27	28	27	0
DIABLO CANYON-2	57	0	58	57	61	58	60	0	59	57	26	0	27	26	28	27	28	0	27	26
DRESDEN-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRESDEN-2	0	173	176	0	179	181	0	181	178	0	0	31	32	0	32	33	0	33	32	0
DRESDEN-3	141	142	0	144	147	0	148	147	0	145	26	26	0	27	27	0	27	27	0	27
DUANE ARNOLD	0	106	108	0	110	111	0	111	109	0	0	19	20	0	20	20	0	20	20	0
FARLEY-1	64	0	65	66	0	67	68	0	66	66	30	0	30	30	0	31	31	0	30	30
FARLEY-2	64	65	0	65	66	0	67	67	0	66	29	30	0	30	30	0	31	31	0	30
FERMI-2	0	259	257	0	268	0	266	0	268	258	0	47	47	0	49	0	48	0	49	47
FITZPATRICK	176	177	0	180	189	177	0	187	182	0	32	32	0	33	34	32	0	34	33	0
FORT CALHOUN-1	39	0	40	40	0	41	41	0	41	40	14	0	14	14	0	15	15	0	15	14
GINNA	25	25	26	26	26	26	26	26	26	26	9	9	9	9	9	9	9	9	9	9
GRAND GULF-1	231	234	0	237	242	0	244	243	0	239	41	41	0	42	43	0	43	43	0	42
GRAND GULF-2	179	192	191	193	198	199	200	200	197	195	33	35	35	35	36	37	37	37	36	36
HARRIS-1	46	0	47	47	48	48	0	49	48	47	21	0	22	22	22	22	0	23	22	22
HARTSVILLE-A1	156	217	0	216	245	0	225	233	0	231	28	43	0	39	45	0	41	42	0	42
HARTSVILLE-A2	0	0	0	166	0	224	216	0	244	222	0	0	0	30	0	48	39	0	44	40
HATCH-1	124	123	126	126	128	129	130	130	128	127	23	22	23	23	23	23	24	24	23	23

TABLE A.3. (contd)

REACTOR	ASSEMBLIES										MTIHM								
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
HATCH-2	124	124	126	127	128	129	130	129	128	126	23	23	23	23	23	23	24	23	23	23
HOPE CREEK-1	241	0	244	246	0	250	252	0	249	245	44	0	44	45	0	45	46	0	45	45
HUMBOLDT BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-2	64	0	65	66	0	67	67	0	66	65	29	0	30	30	0	31	31	0	30	30
INDIAN POINT-3	67	68	0	69	0	70	70	0	72	0	31	31	0	32	0	32	32	0	33	0
KEWAUNEE	34	34	34	34	34	36	36	36	34	34	13	13	13	13	13	14	14	14	13	13
LA CROSSE	22	22	22	22	23	23	23	22	22	22	2	2	2	2	3	3	3	2	2	2
LA SALLE-1	198	0	202	203	0	206	207	0	205	202	36	0	37	37	0	38	38	0	37	37
LA SALLE-2	201	0	201	203	0	207	208	0	204	201	36	0	37	37	0	38	38	0	37	37
LIMERICK-1	223	226	0	224	231	0	233	232	0	228	41	41	0	41	42	0	42	42	0	41
LIMERICK-2	172	0	224	213	0	242	233	0	230	230	31	0	41	39	0	44	42	0	42	42
MAINE YANKEE	64	0	65	65	0	67	67	0	66	65	24	0	24	24	0	25	25	0	25	24
MC GUIRE-1	58	57	54	55	58	57	0	58	57	57	23	24	23	23	25	24	0	25	24	24
MC GUIRE-2	52	58	54	57	0	57	57	59	54	57	22	25	23	24	0	24	24	25	23	24
MIDLAND-1	63	0	61	57	0	59	0	60	58	0	29	0	28	27	0	27	0	28	27	0
MIDLAND-2	0	57	58	0	59	59	0	59	0	58	0	26	27	0	27	27	0	27	0	27
MILLSTONE-1	175	0	180	0	181	0	187	0	182	181	31	0	32	0	32	0	33	0	32	32
MILLSTONE-2	65	65	66	0	66	67	68	0	66	65	26	26	26	0	27	27	27	0	27	26
MILLSTONE-3	0	56	59	57	60	59	0	60	59	63	0	26	27	26	28	27	0	28	27	29
MONTICELLO	93	93	94	85	0	118	87	97	95	95	16	16	17	15	0	21	15	17	17	17
NINE MILE POINT-1	175	0	178	0	182	0	185	0	184	0	31	0	31	0	32	0	33	0	32	0
NINE MILE POINT-2	0	247	0	235	246	0	248	0	245	0	0	42	0	43	44	0	45	0	44	0
NORTH ANNA-1	61	0	62	63	0	64	64	0	64	63	28	0	29	29	0	29	29	0	29	29
NORTH ANNA-2	0	61	62	0	63	65	0	64	64	0	0	28	29	0	29	30	0	29	29	0
OCONEE-1	57	0	58	59	0	59	0	62	58	0	26	0	27	27	0	27	0	29	27	0
OCONEE-2	0	60	62	0	63	0	66	0	62	62	0	28	29	0	29	0	31	0	29	29
OCONEE-3	61	61	0	62	0	63	0	65	63	0	28	28	0	29	0	29	0	30	29	0
OYSTER CREEK	198	0	177	182	0	184	0	135	182	0	35	0	31	32	0	32	0	33	32	0
PALISADES	60	0	61	62	0	63	63	0	62	62	23	0	24	24	0	24	24	0	24	24
PALO VERDE-1	58	58	58	59	59	60	60	60	59	59	25	25	25	26	26	26	26	26	26	26
PALO VERDE-2	58	57	58	58	59	60	60	60	59	58	25	25	25	26	26	26	26	26	26	26
PALO VERDE-3	57	58	58	59	60	60	60	59	59	58	25	25	25	26	26	26	26	26	26	26
PEACH BOTTOM-2	223	0	228	231	0	236	237	0	234	231	41	0	42	42	0	43	43	0	43	42
PEACH BOTTOM-3	225	0	229	232	0	236	237	0	234	231	41	0	42	42	0	43	43	0	43	42
PERRY-1	260	262	0	267	271	0	271	272	0	268	47	48	0	49	49	0	49	50	0	49
PERRY-2	0	256	265	0	270	273	0	274	269	0	0	47	48	0	49	50	0	50	49	0
PILGRIM-1	0	171	172	0	177	0	180	0	174	0	0	30	30	0	31	0	32	0	31	0
POINT BEACH-1	32	32	33	33	33	34	34	34	33	33	11	11	12	12	12	12	12	12	12	12
POINT BEACH-2	29	29	29	29	30	30	30	30	29	29	10	10	10	10	11	11	11	11	10	10
PRAIRIE ISLAND-1	36	36	36	37	37	37	38	37	37	36	14	14	14	15	15	15	15	15	15	14
PRAIRIE ISLAND-2	36	36	36	36	37	37	37	37	37	37	14	14	14	14	15	15	15	15	15	15
QUAD CITIES-1	155	0	157	159	0	162	163	0	161	159	27	0	28	28	0	29	29	0	28	28
QUAD CITIES-2	148	146	0	151	154	0	155	151	0	152	26	26	0	27	27	0	27	27	0	27
RANCHO SECO-1	50	50	0	51	52	52	52	0	52	51	23	23	0	24	24	24	24	0	24	24
RIVER BEND-1	138	134	138	137	139	144	141	141	139	137	24	24	25	24	25	25	25	25	25	24
ROBINSON-2	0	46	47	47	48	0	48	48	48	47	0	20	20	20	21	0	21	21	21	20
SALEM-1	70	0	68	69	0	70	71	0	70	69	32	0	31	32	0	32	33	0	32	32

TABLE A.3. (contd)

REACTOR	ASSEMBLIES										MTIHM									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
SALEM-2	0	75	77	0	77	79	0	79	77	0	0	34	35	0	35	36	0	36	35	0
SAN ONOFRE-1	46	0	47	0	49	0	49	0	48	0	17	0	17	0	18	0	18	0	18	0
SAN ONOFRE-2	0	71	0	72	0	74	0	74	0	80	0	30	0	30	0	31	0	31	0	34
SAN ONOFRE-3	70	0	72	73	0	74	0	74	0	73	29	0	30	31	0	31	0	31	0	31
SEABROOK-1	57	57	58	58	59	59	60	59	59	58	24	24	25	25	25	25	25	25	25	25
SEABROOK-2	65	54	57	58	59	59	59	60	59	58	28	23	24	25	25	25	25	25	25	25
SEQUOYAH-1	74	0	75	76	0	79	0	77	77	0	33	0	33	34	0	35	0	34	34	0
SEQUOYAH-2	0	75	0	76	76	0	79	78	0	76	0	33	0	34	34	0	35	35	0	34
SHOREHAM	159	160	0	162	165	0	166	166	0	163	29	29	0	30	30	0	30	30	0	30
SOUTH TEXAS PROJ-1	53	54	55	56	57	57	58	57	56	56	29	29	30	30	31	31	31	31	30	30
SOUTH TEXAS PROJ-2	53	56	57	58	58	57	58	57	56	56	29	30	31	30	31	31	31	31	30	30
ST. LUCIE-1	0	74	72	0	77	74	0	78	73	0	0	27	26	0	28	27	0	28	27	0
ST. LUCIE-2	0	67	79	0	70	81	0	71	80	0	0	25	30	0	27	31	0	27	30	0
SUMMER	64	0	65	65	0	67	67	0	66	65	28	0	29	29	0	30	30	0	29	29
SURRY-1	0	55	56	0	55	57	0	57	56	0	0	25	26	0	25	26	0	26	26	0
SURRY-2	54	55	0	55	56	0	57	56	0	55	25	25	0	25	25	0	26	26	0	25
SUSQUEHANNA-1	222	0	226	228	0	233	233	0	229	227	39	0	40	40	0	41	41	0	40	40
SUSQUEHANNA-2	0	223	226	0	231	233	0	233	229	0	0	39	40	0	41	41	0	41	40	0
THREE MILE ISLAND-1	67	68	0	69	70	0	71	70	0	69	31	31	0	32	32	0	33	32	0	32
TROJAN	43	43	43	44	44	45	45	45	44	44	20	20	20	20	20	21	21	21	20	21
TURKEY POINT-3	56	51	0	57	52	0	59	52	0	58	26	23	0	26	24	0	27	24	0	27
TURKEY POINT-4	58	0	56	60	0	58	61	0	57	59	27	0	26	28	0	27	28	0	26	27
VERMONT YANKEE	81	82	83	83	85	85	85	85	84	83	15	15	15	15	16	16	16	16	15	15
VOGTLE-1	57	57	58	58	59	59	60	59	59	58	26	26	27	27	27	27	28	27	27	27
VOGTLE-2	55	57	58	59	59	59	60	59	58	58	25	26	27	27	27	27	28	27	27	27
WATERFORD-3	64	0	66	64	68	67	67	0	67	64	27	0	28	27	29	29	28	0	28	27
WATTS BAR-1	74	75	0	76	77	0	77	0	78	76	33	33	0	34	34	0	34	0	35	34
WATTS BAR-2	0	73	76	0	77	78	0	78	0	77	0	32	34	0	34	35	0	35	0	34
WNP-1	59	61	57	58	60	60	60	59	59	58	27	23	26	26	27	27	27	27	27	26
WNP-2	148	150	151	152	155	155	156	154	153	151	27	27	27	28	28	28	28	28	28	27
WNP-3	64	67	69	69	70	70	71	71	70	69	27	29	30	30	30	30	31	31	30	30
WOLF CREEK	64	64	0	65	66	0	67	67	0	65	30	30	0	30	30	0	31	31	0	30
YANKEE	32	36	0	36	76	0	0	0	0	0	7	8	0	8	18	0	0	0	0	0
YELLOW CREEK-1	0	0	0	0	63	0	81	81	0	80	0	0	0	0	29	0	37	36	0	34
YELLOW CREEK-2	0	0	0	0	0	64	0	81	81	0	0	0	0	0	0	30	0	37	36	0
ZION-1	43	43	43	44	45	45	45	44	44	43	20	20	20	20	21	21	21	20	20	20
ZION-2	43	43	43	44	44	45	45	45	44	44	20	20	20	20	20	21	21	21	20	20
BRUNSWICK-1 PWR POOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 PWR POOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-BWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BWR GENERIC	0	0	0	0	0	0	0	188	349	752	0	0	0	0	0	0	0	34	64	146
PWR GENERIC	0	0	0	0	0	0	0	0	189	187	0	0	0	0	0	0	0	0	87	86

TABLE A.3. (contd)

REACTOR	ASSEMBLIES										MTIHM									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
ARKANSAS NUCL ONE-1	61	61	0	61	61	0	177	0	0	0	28	28	0	28	28	0	82	0	0	0
ARKANSAS NUCL ONE-2	54	0	54	54	0	53	52	0	52	177	23	0	23	23	0	23	22	0	22	75
BEAVER VALLEY-1	65	65	0	65	64	0	64	157	0	0	30	30	0	30	30	0	30	72	0	0
BEAVER VALLEY-2	65	0	65	65	0	64	63	0	63	64	30	0	30	30	0	30	29	0	29	30
BELLEFONTE-1	87	0	86	0	86	84	0	84	84	0	38	0	38	0	38	37	0	37	37	0
BELLEFONTE-2	0	87	0	86	85	0	84	84	0	84	0	38	0	38	38	0	37	37	0	37
BIG ROCK POINT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRAIDWOOD-1	52	52	51	51	51	50	50	50	50	50	22	22	22	22	22	21	21	21	21	21
BRAIDWOOD-2	52	51	51	51	51	50	50	50	50	50	22	22	22	22	22	21	21	21	21	21
BROWNS FERRY-1	0	201	200	0	764	0	0	0	0	0	0	35	35	0	134	0	0	0	0	0
BROWNS FERRY-2	201	194	0	200	200	764	0	0	0	0	35	34	0	35	35	134	0	0	0	0
BROWNS FERRY-3	198	198	0	196	196	0	764	0	0	0	35	35	0	35	35	0	135	0	0	0
BRUNSWICK-1	162	0	161	160	0	159	159	560	0	0	30	0	30	30	0	30	30	105	0	0
BRUNSWICK-2	162	162	0	161	159	0	159	560	0	0	30	30	0	30	30	0	30	105	0	0
BYRON-1	52	52	51	51	51	51	50	50	50	50	22	22	22	22	22	22	21	21	21	21
BYRON-2	52	52	51	51	51	50	50	50	50	50	22	22	22	22	22	21	21	21	21	21
CALLAWAY-1	80	0	80	80	0	78	77	0	77	77	34	0	34	34	0	33	33	0	33	33
CALVERT CLIFFS-1	65	0	65	65	0	65	217	0	0	0	25	0	25	25	0	25	84	0	0	0
CALVERT CLIFFS-2	0	65	65	0	65	65	217	0	0	0	0	25	25	0	25	25	84	0	0	0
CATAWBA-1	58	53	57	54	55	53	0	53	53	57	25	22	24	23	23	22	0	22	22	24
CATAWBA-2	54	57	55	0	55	54	53	55	52	55	23	24	23	0	23	23	22	23	22	23
CLINTON-1	205	205	0	203	202	0	198	198	0	199	37	37	0	37	37	0	36	36	0	36
COMANCHE PEAK-1	58	58	58	58	58	57	56	56	56	56	23	23	23	23	23	23	23	23	23	23
COMANCHE PEAK-2	58	58	58	57	57	57	56	56	57	56	23	23	23	23	23	23	23	23	23	23
CONNECTICUT YANKEE	48	157	0	0	0	0	0	0	0	0	20	65	0	0	0	0	0	0	0	0
COOPER	101	101	101	101	101	548	0	0	0	0	18	18	18	18	18	100	0	0	0	0
CRYSTAL RIVER-3	58	0	58	57	0	177	0	0	0	0	27	0	27	26	0	82	0	0	0	0
D C COOK-1	0	73	72	0	72	72	193	0	0	0	33	33	0	33	33	89	0	0	0	0
D C COOK-2	0	80	80	0	79	79	193	0	0	0	32	32	0	32	32	78	0	0	0	0
DAVIS-BESSE-1	44	44	0	43	43	0	42	42	0	177	21	21	0	20	20	0	20	20	0	83
DIABLO CANYON-1	58	59	57	57	0	57	56	55	55	57	27	27	26	26	0	26	26	26	26	26
DIABLO CANYON-2	59	56	58	0	57	56	57	55	57	0	27	26	27	0	26	26	26	26	26	0
DRESDEN-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRESDEN-2	176	176	0	224	0	0	0	0	0	0	32	32	0	130	0	0	0	0	0	0
DRESDEN-3	144	0	144	224	0	0	0	0	0	0	27	0	27	133	0	0	0	0	0	0
DUANE ARNOLD	108	108	0	107	106	0	106	368	0	0	20	20	0	20	19	0	19	67	0	0
FARLEY-1	0	65	65	0	65	64	0	64	64	0	0	30	30	0	30	30	0	30	30	0
FARLEY-2	65	0	65	65	0	64	63	0	63	157	30	0	30	30	0	29	29	0	29	72
FERMI-2	0	263	0	260	0	255	251	0	255	0	0	48	0	47	0	46	46	0	46	0
FITZPATRICK	180	180	0	178	177	0	177	560	0	0	33	33	0	32	32	0	32	102	0	0
FORT CALHOUN-1	0	40	40	0	40	133	0	0	0	0	0	14	14	0	14	47	0	0	0	0
GINNA	26	26	26	121	0	0	0	0	0	0	9	9	9	42	0	0	0	0	0	0
GRAND GULF-1	237	0	237	235	0	233	229	0	229	230	42	0	42	41	0	41	40	0	40	41
GRAND GULF-2	194	194	193	193	192	190	187	187	188	189	36	36	35	35	35	35	34	34	35	35
HARRIS -1	47	0	47	47	46	46	0	46	46	46	22	0	22	22	21	21	0	21	21	21
HARTSVILLE-A1	224	0	225	224	0	222	218	0	219	219	41	0	41	41	0	40	40	0	40	40
HARTSVILLE-A2	0	227	229	0	221	220	0	219	220	0	0	41	42	0	40	40	0	40	40	0
HATCH-1	126	126	125	125	124	124	560	0	0	0	23	23	23	23	23	23	102	0	0	0

TABLE A.3. (contd)

REACTOR	ASSEMBLIES										WITHIN									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
HATCH-2	126	126	125	125	124	123	121	122	122	560	23	23	23	23	23	22	22	22	22	102
HOPE CREEK-1	0	245	241	0	242	238	0	236	237	0	0	45	44	0	44	43	0	43	43	0
HUMBOLDT BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-2	0	65	65	193	0	0	0	0	0	0	0	30	30	88	0	0	0	0	0	0
INDIAN POINT-3	68	67	0	70	66	0	193	0	0	0	31	31	0	32	30	0	85	0	0	0
KEWAUNEE	34	34	34	34	34	121	0	0	0	0	13	13	13	13	13	46	0	0	0	0
LA CROSSE	72	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0
LA SALLE-1	0	202	200	0	199	196	0	194	195	0	0	37	36	0	36	36	0	35	36	0
LA SALLE-2	0	201	200	0	199	195	0	194	195	0	0	37	36	0	36	36	0	35	36	0
LIMERICK-1	226	0	226	224	0	222	218	0	219	220	41	0	41	41	0	40	40	0	40	40
LIMERICK-2	0	224	225	0	224	220	0	219	220	0	0	41	41	0	41	40	0	40	40	0
MAINE YANKEE	0	65	65	0	65	217	0	0	0	0	0	24	24	0	24	81	0	0	0	0
MC GUIRE-1	54	58	54	54	55	0	53	55	53	53	23	25	23	23	23	0	22	23	22	22
MC GUIRE-2	55	55	55	0	54	55	52	55	52	52	23	23	23	0	23	23	22	23	22	22
MIDLAND-1	58	0	58	57	0	56	0	56	56	0	27	0	27	27	0	26	0	26	26	0
MIDLAND-2	58	0	58	57	0	57	56	0	56	0	27	0	27	27	0	27	26	0	26	0
MILLSTONE-1	0	180	0	580	0	0	0	0	0	0	0	32	0	102	0	0	0	0	0	0
MILLSTONE-2	66	0	65	64	65	0	65	217	0	0	26	0	26	26	26	0	26	87	0	0
MILLSTONE-3	48	62	58	57	57	0	56	56	56	56	22	29	27	26	26	0	26	26	26	26
MONTICELLO	95	94	93	0	484	0	0	0	0	0	17	17	16	0	86	0	0	0	0	0
NINE MILE POINT-1	180	0	532	0	0	0	0	0	0	0	32	0	94	0	0	0	0	0	0	0
NINE MILE POINT-2	241	241	0	239	0	236	0	232	233	0	43	43	0	43	0	42	0	42	42	0
NORTH ANNA-1	0	62	61	0	62	60	0	60	157	0	0	29	28	0	29	28	0	28	72	0
NORTH ANNA-2	62	62	0	61	62	0	60	60	157	0	29	29	0	28	29	0	28	28	72	0
OCONEE-1	58	0	58	58	0	177	0	0	0	0	27	0	27	27	0	82	0	0	0	0
OCONEE-2	0	62	0	62	177	0	0	0	0	0	0	29	0	29	82	0	0	0	1	0
OCONEE-3	63	61	0	61	0	177	0	0	0	0	29	28	0	28	0	82	0	0	0	0
OYSTER CREEK	682	560	0	0	0	0	0	0	0	0	32	99	0	0	0	0	0	0	0	0
PALISADES	0	61	61	0	204	0	0	0	0	0	0	24	24	0	79	0	0	0	0	0
PALO VERDE-1	58	58	58	58	58	57	56	56	57	57	25	25	25	25	25	25	24	24	25	25
PALO VERDE-2	58	59	58	58	58	58	56	56	57	57	25	26	25	25	25	25	24	24	25	25
PALO VERDE-3	59	58	58	58	58	56	56	56	57	57	26	25	25	25	25	24	24	24	25	25
PEACH BOTTOM-2	0	230	229	0	229	764	0	0	0	0	0	42	42	0	42	139	0	0	0	0
PEACH BOTTOM-3	0	230	229	0	229	764	0	0	0	0	0	42	42	0	42	139	0	0	0	0
PERRY-1	264	0	265	264	0	261	257	0	257	268	48	0	48	48	0	48	47	0	47	47
PERRY-2	259	272	0	263	260	0	257	257	0	259	47	45	0	48	47	0	47	47	0	47
PILGRIM-1	174	173	0	172	0	580	0	0	0	0	31	31	0	30	0	103	0	0	0	0
PT BEACH-1	33	33	33	33	121	0	0	0	0	0	12	12	12	12	43	0	0	0	0	0
PT BEACH-2	29	29	29	29	29	121	0	0	0	0	10	10	10	10	10	43	0	0	0	0
PRAIRIE ISLAND-1	36	36	36	36	36	121	0	0	0	0	14	14	14	14	14	48	0	0	0	0
PRAIRIE ISLAND-2	36	36	36	36	36	121	0	0	0	0	14	14	14	14	14	48	0	0	0	0
QUAD CITIES-1	0	158	158	0	724	0	0	0	0	0	0	28	28	0	128	0	0	0	0	0
QUAD CITIES-2	151	0	148	724	0	0	0	0	0	0	27	0	26	128	0	0	0	0	0	0
RANCHO SECO-1	51	51	0	51	51	177	0	0	0	0	24	24	0	24	24	82	0	0	0	0
RIVER BEND-1	140	137	136	136	138	134	132	132	136	133	24	24	24	24	24	24	23	23	24	24
ROBINSON-2	0	47	47	157	0	0	0	0	0	0	0	20	20	68	0	0	0	0	0	0
SALEM-1	0	69	68	0	68	193	0	0	0	0	0	32	31	0	31	89	0	0	0	0

TABLE A.3. (contd)

REACTOR	ASSEMBLIES									MTIHM								
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
SALEM-2	77	77	0	75	75	0	193	0	0	0	35	35	0	34	34	0	89	0	0	0
SAN ONOFRE-1	68	157	0	0	0	0	0	0	0	0	18	58	0	0	0	0	0	0	0	0
SAN ONOFRE-2	59	0	79	0	71	0	70	0	70	0	25	0	33	0	30	0	29	0	29	0
SAN ONOFRE-3	0	72	0	72	0	71	0	70	0	70	0	30	0	30	0	30	0	29	0	29
SEABROOK-1	58	58	58	57	57	56	56	56	56	56	25	25	25	24	24	24	24	24	24	24
SEABROOK-2	58	58	58	57	57	57	56	56	56	56	25	25	25	24	24	24	24	24	24	24
SEQUOYAH-1	76	76	0	75	75	0	75	0	193	0	34	34	0	33	33	0	33	0	86	0
SEQUOYAH-2	76	0	75	0	75	74	0	193	0	0	34	0	33	0	33	33	0	86	0	0
SHOREHAM	162	0	162	161	0	159	156	0	156	157	30	0	30	30	0	29	29	0	29	29
SOUTH TEXAS PROJ-1	56	56	56	55	55	54	54	54	54	54	30	30	30	30	30	29	29	29	29	29
SOUTH TEXAS PROJ-2	56	56	56	55	55	54	54	54	54	54	30	30	30	30	30	29	29	29	29	29
ST. LUCIE-1	76	72	0	75	70	0	70	217	0	0	28	26	0	27	26	0	26	79	0	0
ST. LUCIE-2	69	79	0	68	78	0	66	77	0	67	26	30	0	26	30	0	25	29	0	25
SUMMER	0	65	65	0	64	63	0	63	63	0	0	29	29	0	28	28	0	28	28	0
SURRY-1	55	56	0	55	55	0	157	0	0	0	25	26	0	25	25	0	72	0	0	0
SURRY-2	56	0	55	55	0	157	0	0	0	0	26	0	25	25	0	72	0	0	0	0
SUSQUEHANNA-1	0	227	225	0	223	219	0	219	220	0	0	40	40	0	39	39	0	39	39	0
SUSQUEHANNA-2	226	226	0	225	223	0	218	219	0	220	40	40	0	40	39	0	38	39	0	39
THREE MILE ISLAND-1	69	0	68	68	0	177	0	0	0	0	32	0	31	31	0	82	0	0	0	0
TROJAN	44	44	43	43	43	42	42	42	193	0	20	20	20	20	20	19	19	19	89	0
TURKEY POINT-3	51	0	59	59	0	157	0	0	0	0	23	0	27	27	0	72	0	0	0	0
TURKEY POINT-4	0	57	59	0	157	0	0	0	0	0	0	26	27	0	72	0	0	0	0	0
VERMONT YANKEE	83	83	83	83	368	0	0	0	0	0	15	15	15	15	67	0	0	0	0	0
VOGTLE-1	58	58	58	57	57	56	56	56	56	56	27	27	27	26	26	26	26	26	26	26
VOGTLE-2	58	58	58	57	57	56	56	56	56	56	27	27	27	26	26	26	26	26	26	26
WATERFORD-3	67	64	65	0	65	62	65	62	63	0	28	27	28	0	28	26	28	26	27	0
WATTS BAR-1	0	76	75	0	75	74	0	73	0	74	0	34	33	0	33	33	0	32	0	33
WATTS BAR-2	75	0	76	75	0	74	73	0	73	0	33	0	34	33	0	33	32	0	32	0
WNP-1	58	58	58	57	57	56	56	56	56	56	26	26	26	26	26	26	26	26	26	26
WNP-2	151	151	150	150	149	146	146	146	147	146	27	27	27	27	27	27	27	27	27	27
WNP-3	69	69	68	68	68	67	66	66	66	67	30	30	29	29	29	29	28	28	28	29
WOLF CREEK	65	0	65	64	0	64	63	0	63	63	30	0	30	30	0	30	29	0	29	29
YANKEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-1	81	0	80	80	0	78	77	0	77	77	36	0	34	34	0	33	33	0	33	33
YELLOW CREEK-2	80	81	0	80	79	0	77	77	0	77	34	34	0	34	33	0	33	33	0	33
ZION-1	44	43	43	43	43	193	0	0	0	0	20	20	20	20	20	88	0	0	0	0
ZION-2	43	44	43	43	43	193	0	0	0	0	20	20	20	20	20	88	0	0	0	0
BRUNSWICK-1 PWR POOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 PWR POOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
WEST VALLEY-BWR	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BWR GENERIC	927	1226	1221	2353	2220	3113	3765	5381	4280	4908	175	230	228	444	408	582	703	1017	794	911
PWR GENERIC	426	742	722	752	1467	1431	2009	2361	3048	2933	197	337	328	333	660	635	900	1038	1356	1283

TABLE A.3. (contd)

REACTOR	ASSEMBLIES							MTIHM						
	2014	2015	2016	2017	2018	2019	2020	2014	2015	2016	2017	2018	2019	2020
ARKANSAS NUCL ONE-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARKANSAS NUCL ONE-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAVER VALLEY-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAVER VALLEY-2	0	64	64	0	64	64	0	0	30	30	0	30	30	0
BELLEFONTE-1	84	84	0	85	0	85	85	37	37	0	37	0	37	37
BELLEFONTE-2	84	0	84	0	85	85	0	37	0	37	0	38	38	0
BIG ROCK POINT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRAIDWOOD-1	50	50	50	50	51	51	51	21	21	21	21	22	22	22
BRAIDWOOD-2	50	50	50	51	51	51	51	21	21	21	22	22	22	22
BROWNS FERRY-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BROWNS FERRY-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BYRON-1	50	50	50	50	51	51	51	21	21	21	21	22	22	22
BYRON-2	50	50	50	50	51	51	51	21	21	21	21	22	22	22
CALLAWAY-1	0	77	78	0	78	78	0	0	33	33	0	33	33	0
CALVERT CLIFFS-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CALVERT CLIFFS-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CATAWBA-1	52	53	55	54	54	0	54	22	22	23	23	23	0	23
CATAWBA-2	52	55	0	54	55	54	54	22	23	0	23	23	23	23
CLINTON-1	198	0	200	201	0	201	202	36	0	37	37	0	37	37
COMANCHE PEAK-1	56	56	57	57	57	57	57	23	23	23	23	23	23	23
COMANCHE PEAK-2	56	57	57	57	57	57	57	23	23	23	23	23	23	23
CONNECTICUT YANKEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COOPER	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRYSTAL RIVER-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D C COOK-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D C COOK-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DAVIS-BESSE-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIABLO CANYON-1	0	56	57	56	56	57	0	0	26	26	26	26	26	0
DIABLO CANYON-2	56	55	58	55	57	0	57	26	25	27	25	26	0	26
DRESDEN-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRESDEN-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRESDEN-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUANE ARNOLD	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FARLEY-1	157	0	0	0	0	0	0	72	0	0	0	0	0	0
FARLEY-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FERMI-2	253	253	0	250	0	260	0	46	46	0	45	0	47	0
FITZPATRICK	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FORT CALHOUN-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GINNA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND GULF-1	0	230	231	0	232	233	0	0	41	41	0	41	41	0
GRAND GULF-2	188	188	189	190	190	191	191	35	35	35	35	35	35	35
HARRIS -1	46	0	46	46	46	46	0	21	0	21	21	21	21	0
HARTSVILLE-A1	0	220	221	0	222	222	0	0	40	40	0	40	40	0
HARTSVILLE-A2	219	220	0	221	222	0	223	40	40	0	40	40	0	41
HATCH-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE A.3. (contd)

REACTOR	ASSEMBLIES							MTIHM					
	2014	2015	2016	2017	2018	2019	2020	2014	2015	2016	2017	2018	2019	2020
HATCH-2	0	0	0	0	0	0	0	0	0	0	0	0	0	
HOPE CREEK-1	237	237	0	239	240	0	240	43	43	0	43	44	0	44
HUMBOLDT BAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN POINT-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KEWAUNEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA CROSSE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LA SALLE-1	195	196	0	197	197	0	198	36	36	0	36	36	0	36
LA SALLE-2	195	196	0	197	197	0	198	36	36	0	36	36	0	36
LIMERICK-1	0	220	221	0	222	222	0	0	40	40	0	40	40	0
LIMERICK-2	219	217	0	221	222	0	223	40	39	0	40	40	0	41
MAINE YANKEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MC GUIRE-1	193	0	0	0	0	0	0	32	0	0	0	0	0	0
MC GUIRE-2	193	0	0	0	0	0	0	32	0	0	0	0	0	0
MIDLAND-1	56	0	56	57	0	57	0	26	0	26	27	0	27	0
MIDLAND-2	56	56	0	57	57	0	57	26	26	0	27	27	0	27
MILLSTONE-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MILLSTONE-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MILLSTONE-3	56	56	0	57	57	57	57	26	26	0	26	26	26	26
MONTICELLO	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NINE MILE POINT-2	233	0	235	0	236	236	0	42	0	42	0	42	42	0
NORTH ANNA-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NORTH ANNA-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OCONEE-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OCONEE-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OCONEE-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OYSTER CREEK	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALISADES	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PALO VERDE-1	57	57	57	57	58	58	58	25	25	25	25	25	25	25
PALO VERDE-2	56	57	57	57	58	58	58	24	25	25	25	25	25	25
PALO VERDE-3	57	57	57	58	58	58	58	25	25	25	25	25	25	25
PEACH BOTTOM-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEACH BOTTOM-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERRY-1	0	259	261	0	261	261	0	0	47	48	0	48	48	0
PERRY-2	258	0	259	261	0	261	262	47	0	47	48	0	48	48
PILGRIM-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
POINT BEACH-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
POINT BEACH-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRAIRIE ISLAND-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PRAIRIE ISLAND-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QUAD CITIES-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
QUAD CITIES-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RANCHO SECO-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RIVER BEND-1	132	133	137	134	134	134	138	23	24	24	24	24	24	24
ROBINSON-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SALEM-1	0	0	0	0	0	0	0	0	0	0	0	0	0	

TABLE A.3. (contd)

REACTOR	ASSEMBLIES							MTIHM						
	2014	2015	2016	2017	2018	2019	2020	2014	2015	2016	2017	2018	2019	2020
SALEM-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN ONOFRE-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN ONOFRE-2	217	0	0	0	0	0	0	91	0	0	0	0	0	0
SAN ONOFRE-3	0	70	0	71	0	71	71	0	29	0	30	0	30	30
SEABROOK-1	56	56	57	57	57	57	57	24	24	24	24	24	24	24
SEABROOK-2	56	56	56	57	57	57	57	24	24	24	24	24	24	24
SEQUOYAH-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEQUOYAH-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHOREHAM	0	157	158	0	159	159	0	0	29	29	0	29	29	0
SOUTH TEXAS PROJ-1	54	54	55	55	55	55	55	29	29	30	30	30	30	30
SOUTH TEXAS PROJ-2	54	54	55	55	55	55	55	29	29	30	30	30	30	30
ST. LUCIE-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ST. LUCIE-2	77	0	67	78	0	67	78	29	0	25	30	0	25	30
SUMMER	157	0	0	0	0	0	0	69	0	0	0	0	0	0
SURRY-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SURRY-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUSQUEHANNA-1	219	220	0	221	222	0	223	39	39	0	39	39	0	39
SUSQUEHANNA-2	219	0	221	222	0	222	223	39	0	39	39	0	39	39
THREE MILE ISLAND-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TROJAN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TURKEY POINT-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TURKEY POINT-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VERMONT YANKEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOGTLE-1	56	56	56	57	57	57	57	26	26	26	26	26	26	26
VOGTLE 2	56	56	57	57	57	57	26	26	26	26	26	26	26	
WATERFORD-3	64	62	65	63	64	0	65	27	26	28	27	27	0	28
WATTS BAR-1	73	0	74	74	0	74	0	32	0	33	33	0	33	0
WATTS BAR-2	73	74	0	74	74	0	75	32	33	0	33	33	0	33
WNP-1	56	56	56	57	57	57	57	26	26	26	26	26	26	26
WNP-2	146	147	148	148	148	148	149	27	27	27	27	27	27	27
WNP-3	66	67	67	67	67	67	68	28	29	29	29	29	29	29
WOLF CREEK	0	63	64	0	64	64	0	0	29	30	0	30	30	0
YANKEE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-1	0	77	78	0	78	78	0	0	33	33	0	33	33	0
YELLOW CREEK-2	77	0	78	78	0	78	78	33	0	33	33	0	33	33
ZION-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ZION-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-1 PWR POOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRUNSWICK-2 PWR POOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-BWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MORRIS-PWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-BWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY-PWR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BWR GENERIC	6295	4652	6160	6318	5872	6090	7517	1161	856	1136	1153	1038	1112	1375
PWR GENERIC	3314	3856	3611	4146	4265	4168	4508	1441	1668	1555	1787	1821	1786	1922

TABLE A.3. (contd)

TOTALS

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
PWR ASSEMBLY	14114	1630	2310	2031	2526	3052	3092	3196	3212	3557	3594
PWR MTIHM	5953	709	1002	876	1099	1316	1371	1380	1388	1547	1568
BWR ASSEMBLY	23157	2417	2531	3602	3499	4104	4128	4265	4764	4298	4864
BWR MTIHM	4189	416	453	647	628	743	743	766	858	774	878
TOTAL ASSEMBLY	37271	4047	4841	5633	6025	7156	7220	7461	7976	7855	8458
TOTAL MTIHM	10142	1125	1455	1523	1727	2059	2114	2146	2246	2321	2447

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
PWR ASSEMBLY	3832	3676	3831	4048	3735	4043	3955	3813	4163	4319
PWR MTIHM	1663	1604	1664	1763	1623	1765	1725	1676	1820	1888
BWR ASSEMBLY	5064	4950	5455	5285	5412	5240	6004	4819	6558	5965
BWR MTIHM	910	895	980	954	975	946	1078	870	1180	1088
TOTAL ASSEMBLY	8896	8626	9286	9333	9147	9283	9959	8632	10721	10284
TOTAL MTIHM	2573	2499	2644	2717	2598	2711	2803	2546	3000	2975

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
PWR ASSEMBLY	4410	4777	4672	4828	5606	6769	6114	5423	6034	5411
PWR MTIHM	1941	2080	2053	2119	2442	2971	2688	2368	2687	2376
BWR ASSEMBLY	6077	7521	6465	9490	9677	10285	8278	10203	7728	7698
BWR MTIHM	1098	1359	1175	1731	1567	1878	1519	1898	1418	1416
TOTAL ASSEMBLY	10487	12298	11137	14318	14283	17054	14392	15626	13762	13109
TOTAL MTIHM	3040	3439	3228	3850	4009	4848	4207	4266	4105	3792

	2014	2015	2016	2017	2018	2019	2020
PWR ASSEMBLY	6073	5697	5479	6054	6108	6137	6192
PWR MTIHM	2650	2480	2379	2628	2639	2653	2661
BWR ASSEMBLY	9206	7745	8641	9020	8776	8840	9987
BWR MTIHM	1687	1416	1584	1643	1600	1609	1821
TOTAL ASSEMBLY	15279	13442	14120	15074	14884	14977	16179
TOTAL MTIHM	4337	3897	3963	4270	4239	4262	4482

TABLE A.4. Middle Case 1983 and Projected Inventories

REACTOR	ASSEMBLIES INV. 1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	MTIHM INV. 1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
ARKANSAS NUCL ONE-1	316	379	379	437	495	495	553	613	613	672	732	147	176	176	203	229	229	256	284	284	311	339
ARKANSAS NUCL ONE-2	168	168	223	274	201	325	377	377	430	482	482	72	72	95	117	117	139	161	161	183	205	205
BEAVER VALLEY-1	155	220	220	281	340	340	403	467	467	530	594	71	101	101	129	157	157	186	215	215	244	274
BEAVER VALLEY-2	0	0	0	0	0	0	53	114	114	176	242	0	0	0	0	0	0	24	53	53	81	112
BELLEFONTE-1	0	0	0	0	0	0	0	0	0	118	118	0	0	0	0	0	0	0	0	0	52	52
BELLEFONTE-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIG ROCK POINT	150	169	186	203	221	238	256	274	292	310	310	19	22	24	26	28	31	33	35	38	40	40
BRAIDWOOD-1	0	0	0	0	63	63	122	168	218	269	319	0	0	0	0	27	27	52	71	92	114	135
BRAIDWOOD-2	0	0	0	0	0	0	0	43	92	141	191	0	0	0	0	0	0	0	18	39	60	81
BROWNS FERRY-1	1053	1053	1280	1498	1498	1718	1718	1916	2102	2102	2295	191	191	231	269	269	308	308	343	376	376	410
BROWNS FERRY-2	888	1115	1115	1330	1540	1540	1738	1926	1926	2120	2314	161	201	201	239	275	275	310	343	343	377	411
BROWNS FERRY-3	996	996	1211	1211	1412	1412	1605	1796	1796	1987	2182	180	180	218	218	253	253	287	321	321	355	389
BRUNSWICK-1	656	816	816	976	976	1124	1279	1279	1436	1592	1592	123	153	153	183	183	210	239	239	269	298	298
BRUNSWICK-2	424	584	584	746	891	891	1047	1204	1204	1360	1518	79	109	109	140	167	167	196	225	225	254	284
BYRON-1	0	0	0	63	63	118	166	216	266	316	366	0	0	0	27	27	50	70	91	112	134	155
BYRON-2	0	0	0	0	0	73	126	175	225	276	326	0	0	0	0	0	31	53	74	95	117	138
CALLAWAY-1	0	0	0	58	58	132	208	208	285	363	363	0	0	0	27	27	61	94	94	127	160	160
CALVERT CLIFFS-1	476	476	542	603	603	666	729	729	792	855	855	180	180	206	229	229	254	278	278	303	327	327
CALVERT CLIFFS-2	320	385	448	448	507	570	570	633	696	696	759	122	146	170	170	193	217	217	242	266	266	291
CATAWBA-1	0	0	0	0	53	105	156	209	264	317	317	0	0	0	0	22	44	66	89	112	134	134
CATAWBA-2	0	0	0	0	0	0	72	72	126	178	232	0	0	0	0	0	0	30	30	53	75	98
CLINTON-1	0	0	0	0	0	0	234	442	442	635	837	0	0	0	0	0	0	43	81	81	116	153
COMANCHE PEAK-1	0	0	0	0	78	132	186	242	300	357	415	0	0	0	0	36	61	86	112	135	158	181
COMANCHE PEAK-2	0	0	0	0	0	58	110	166	221	281	339	0	0	0	0	0	27	51	77	102	126	149
CONNECTICUT YANKEE	493	543	588	588	633	679	724	724	771	816	862	203	224	242	242	261	280	298	298	318	336	355
COOPER	848	959	959	1065	1158	1259	1361	1463	1568	1670	1772	160	181	181	200	217	235	254	273	292	310	329
CRYSTAL RIVER-3	259	259	321	374	374	428	483	483	540	596	596	120	120	149	174	174	199	225	225	251	277	277
D C COOK-1	466	466	547	617	617	686	757	757	831	831	902	204	204	239	270	270	302	334	334	368	368	401
D C COOK-2	245	325	407	407	481	556	556	637	712	712	792	114	150	185	185	215	245	245	278	308	308	340
DAVIS-BESSE-1	140	200	200	256	312	312	367	425	425	482	540	66	94	94	121	147	147	173	200	200	226	254
DIABLO CANYON-1	0	0	59	59	112	166	220	278	278	334	389	0	0	27	27	51	76	101	128	128	153	179
DIABLO CANYON-2	0	0	0	0	80	135	135	135	196	247	303	0	0	0	0	37	62	62	62	90	113	139
DRESDEN-1	683	683	683	683	683	683	683	683	683	683	683	69	69	69	69	69	69	69	69	69	69	69
DRESDEN-2	1213	1396	1396	1558	1721	1721	1889	2060	2060	2230	2402	222	256	256	285	314	314	344	375	375	406	437
DRESDEN-3	1168	1168	1327	1454	1454	1592	1723	1723	1861	1994	1994	222	222	251	275	275	300	324	324	350	374	374
DUANE ARNOLD	576	682	582	785	885	885	988	1093	1093	1197	1302	107	127	127	146	164	164	183	202	202	221	240
FARLEY-1	196	264	329	329	391	452	452	516	580	580	644	90	121	151	151	180	208	208	238	267	267	297
FARLEY-2	116	116	183	245	245	306	369	369	433	497	497	53	53	84	113	113	141	170	170	199	228	228
FERMI-2	0	0	0	0	221	221	473	473	718	718	971	0	0	0	0	40	40	86	86	131	131	177
FITZPATRICK	816	816	996	1164	1164	1331	1504	1504	1679	1852	1852	153	153	186	216	216	247	278	278	310	342	342
FORT CALHOUN-1	265	302	341	341	379	417	417	456	495	495	534	98	111	125	125	138	152	152	166	179	179	193
GINNA	304	327	352	376	400	424	449	474	499	524	549	118	126	136	145	154	162	171	180	188	197	206
GRAND GULF-1	0	0	0	236	236	445	670	670	894	1123	1123	0	0	0	42	42	79	118	118	158	198	198
GRAND GULF-2	0	0	0	0	0	0	0	0	0	283	484	0	0	0	0	0	0	0	0	0	51	88
HARRIS -1	0	0	0	0	0	46	89	89	136	180	227	0	0	0	0	0	21	41	41	63	83	104
HARTSVILLE-A1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HARTSVILLE-A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HATCH-1	740	740	851	961	1078	1196	1317	1439	1561	1683	1805	138	138	158	178	199	221	243	265	287	309	332

TABLE A.4. (contd)

REACTOR	INV. 1983	ASSEMBLIES 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	INV. 1983	MTIHM 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
HATCH-2	520	622	743	854	972	1090	1211	1333	1455	1577	1699	95	113	135	156	177	199	221	243	265	287	309
HOPE CREEK-1	0	0	0	0	0	155	155	383	613	613	846	0	0	0	0	0	28	28	70	112	112	154
HUMBOLDT BAY	250	434	434	434	434	434	434	434	434	434	434	18	31	31	31	31	31	31	31	31	31	31
INDIAN POINT-1	160	160	160	160	160	160	160	160	160	160	160	31	31	31	31	31	31	31	31	31	31	31
INDIAN POINT-2	308	369	430	430	490	552	552	615	678	678	741	139	167	194	194	222	250	250	279	307	307	336
INDIAN POINT-3	216	216	290	290	350	350	415	482	482	548	548	99	99	132	132	160	160	190	220	220	251	251
KEWAUNEE	300	335	368	401	433	466	499	532	565	598	631	118	131	144	156	169	181	194	207	219	232	245
LA CROSSE	213	234	255	275	295	316	337	358	379	400	422	25	27	30	32	34	36	38	41	43	45	48
LA SALLE-1	0	0	193	193	379	565	565	739	944	944	1139	0	0	35	35	69	102	102	135	172	172	208
LA SALLE-2	0	0	0	182	373	547	547	735	942	942	1138	0	0	0	33	68	100	100	134	172	172	208
LIMERICK-1	0	0	0	148	148	352	560	560	792	1004	1004	0	0	0	27	27	67	105	105	147	186	186
LIMERICK-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAINE YANKEE	649	715	778	778	839	900	900	963	1026	1026	1089	245	270	293	293	316	339	339	363	386	386	410
MC GUIRE-1	29	79	130	185	234	289	341	395	395	450	503	14	37	60	85	106	130	152	175	175	198	220
MC GUIRE-2	0	0	50	106	157	210	264	264	318	371	426	0	0	23	49	72	95	118	118	141	163	186
MIDLAND-1	0	0	0	0	0	0	0	0	52	52	106	0	0	0	0	0	0	0	0	24	24	49
MIDLAND-2	0	0	0	0	0	0	0	50	105	105	168	0	0	0	0	0	0	0	23	49	49	78
MILLSTONE-1	1136	1308	1308	1486	1653	1653	1825	1825	1998	1998	2174	215	246	246	277	306	306	337	337	367	367	398
MILLSTONE-2	376	376	449	500	559	628	628	698	764	829	829	145	145	175	195	219	247	247	275	302	328	328
MILLSTONE-3	0	0	0	0	0	57	116	168	226	283	339	0	0	0	0	0	26	54	78	104	131	156
MONTICELLO	1016	1125	1226	1306	1393	1484	1573	1664	1755	1846	1846	192	211	229	243	258	274	290	306	322	338	338
NINE MILE POINT-1	1044	1202	1202	1371	1371	1539	1539	1714	1714	1888	1888	199	227	227	257	257	287	287	318	318	349	349
NINE MILE POINT-2	0	0	0	0	0	0	0	230	463	463	675	0	0	0	0	0	0	0	41	84	84	125
NORTH ANNA-1	183	250	308	308	366	425	425	486	546	546	607	84	115	142	142	168	195	195	223	251	251	279
NORTH ANNA-2	110	169	169	227	285	285	344	405	405	465	526	51	78	78	104	131	131	158	186	186	214	242
OCONEE-1	677	677	734	789	789	846	901	901	956	956	1014	315	315	341	367	367	393	419	419	444	444	471
OCONEE-2	392	392	452	452	511	569	569	629	629	689	749	182	182	210	210	237	264	264	292	292	320	347
OCONEE-3	56	126	183	183	241	241	301	361	361	421	421	26	59	85	85	112	112	140	167	167	195	195
OYSTER CREEK	980	980	1147	1147	1313	1480	1480	1637	1637	1815	1815	182	182	211	211	240	266	266	297	297	329	329
PALISADES	477	477	539	539	596	654	654	714	773	773	833	194	194	218	218	240	262	262	286	309	309	332
PALO VERDE-1	0	0	0	0	83	146	201	258	316	372	429	0	0	0	0	35	60	82	106	131	156	181
PALO VERDE-2	0	0	0	0	0	88	150	207	264	320	376	0	0	0	0	0	37	61	84	109	133	157
PALO VERDE-3	0	0	0	0	0	69	133	190	247	304	362	0	0	0	0	0	29	55	78	102	127	152
PEACH BOTTOM-2	1170	1434	1434	1686	1686	1899	1899	2119	2340	2340	2562	213	261	261	307	307	346	346	386	426	426	466
PEACH BOTTOM-3	1212	1212	1467	1467	1678	1887	1887	2110	2333	2333	2556	221	221	267	267	305	343	343	384	425	425	465
PERRY-1	0	0	0	0	0	203	443	443	695	950	950	0	0	0	0	0	37	81	81	127	173	173
PERRY-2	0	0	0	0	0	0	0	0	0	159	405	0	0	0	0	0	0	0	0	0	29	74
PILGRIM-1	1004	1004	1004	1174	1332	1332	1499	1499	1667	1667	1832	190	190	190	220	248	248	277	277	307	307	336
POINT BEACH-1	236	236	271	301	331	362	394	426	458	490	522	94	94	108	120	132	144	156	167	178	189	201
POINT BEACH-2	244	283	311	337	365	392	421	449	477	505	534	98	113	124	135	146	155	166	175	185	195	206
PRAIRIE ISLAND-1	300	319	354	389	422	457	491	527	561	597	633	120	128	142	156	169	183	196	211	225	239	253
PRAIRIE ISLAND-2	281	316	351	384	419	419	454	490	525	560	595	112	126	140	154	168	168	182	196	210	224	238
QUAD CITIES-1	1013	1196	1361	1361	1543	1698	1698	1852	2005	2005	2158	192	224	253	253	285	313	313	340	367	367	394
QUAD CITIES-2	1119	1119	1278	1418	1418	1563	1708	1708	1851	1997	1997	213	213	241	266	266	291	317	317	342	368	368
RANCHO SECO-1	260	311	360	360	404	452	503	553	553	602	651	121	144	167	167	187	210	233	256	256	279	302
RIVER BEND-1	0	0	0	0	116	256	386	513	654	783	915	0	0	0	0	21	47	70	93	118	142	166
ROBINSON-2	157	217	217	263	304	351	351	396	442	487	533	68	93	93	113	131	151	151	170	190	210	229
SALEM-1	212	293	366	366	437	503	503	567	633	633	697	97	134	168	168	201	231	231	261	292	292	321

TABLE A.4. (contd)

REACTOR	INV. 1983	ASSEMBLIES 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	INV. 1983	MTIHM 1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
SALEM-2	72	72	152	217	280	280	342	419	419	492	567	33	33	70	99	144	144	188	223	223	257	291
SAN ONOFRE-1	94	94	94	132	132	172	172	218	218	264	264	35	35	35	49	49	64	64	81	81	98	98
SAN ONOFRE-2	0	57	57	127	194	194	264	264	333	333	404	0	24	24	52	80	80	110	110	139	139	169
SAN ONOFRE-3	0	0	55	125	125	188	188	262	262	330	330	0	0	23	51	51	78	78	109	109	138	138
SEABROOK-1	0	0	0	0	0	56	110	166	221	278	334	0	0	0	0	0	24	47	70	94	118	141
SEABROOK-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEQUOYAH-1	140	140	203	275	275	347	347	420	493	493	567	62	62	90	118	118	150	150	182	214	214	247
SEQUOYAH-2	68	134	201	201	266	266	340	413	413	486	560	31	61	90	90	119	119	152	185	185	217	250
SHOREHAM	0	0	0	0	0	248	406	406	541	683	683	0	0	0	0	0	46	74	74	99	125	125
SOUTH TEXAS PROJ-1	0	0	0	0	0	0	63	123	173	228	284	0	0	0	0	0	0	34	66	93	123	153
SOUTH TEXAS PROJ-2	0	0	0	0	0	0	0	0	0	49	107	0	0	0	0	0	0	0	0	0	26	58
ST. LUCIE-1	364	364	364	449	514	514	586	656	656	729	800	140	140	140	172	195	195	221	247	247	274	299
ST. LUCIE-2	0	0	0	79	148	148	215	290	290	358	435	0	0	0	30	56	56	81	110	110	135	165
SUMMER	0	0	0	0	56	114	114	175	237	237	301	0	0	0	0	25	51	51	78	105	105	133
SURRY-1	398	449	449	498	534	534	602	660	660	713	767	180	204	204	226	242	242	274	300	300	324	349
SURRY-2	227	227	281	333	333	384	437	437	490	544	544	104	104	128	152	152	175	199	199	224	248	248
SUSQUEHANNA-1	0	161	367	367	569	779	779	1000	1218	1218	1438	0	29	67	67	104	142	142	181	220	220	259
SUSQUEHANNA-2	0	0	0	225	420	420	631	847	847	1066	1287	0	0	0	41	77	77	116	154	154	193	232
THREE MILE ISLAND-1	208	208	253	317	317	380	446	446	514	580	580	97	97	117	147	147	176	207	207	238	269	269
TROJAN	260	310	348	390	431	471	513	555	597	639	681	120	143	161	180	199	217	237	256	275	295	314
TURKEY POINT-3	368	368	423	471	471	525	574	574	630	679	679	167	167	192	214	214	239	261	261	287	309	309
TURKEY POINT-4	314	374	432	432	485	540	540	595	652	652	707	143	170	197	197	221	246	246	271	298	298	323
VERMONT YANKEE	1098	1195	1278	1278	1366	1437	1517	1598	1678	1758	1839	200	218	233	233	249	262	277	292	306	321	336
VOGTLE-1	0	0	0	0	0	0	57	112	167	222	279	0	0	0	0	0	0	26	52	77	102	129
VOGTLE-2	0	0	0	0	0	0	0	0	0	0	58	0	0	0	0	0	0	0	0	0	0	27
WATERFORD-3	0	0	0	63	130	179	246	246	308	375	437	0	0	0	27	54	74	102	102	129	157	184
WATTS BAR-1	0	0	0	57	57	117	180	180	249	322	322	0	0	0	26	26	53	81	81	112	144	144
WATTS BAR-2	0	0	0	0	0	0	58	118	118	181	251	0	0	0	0	0	0	26	53	53	81	112
WNP-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WNP-2	0	0	151	294	438	576	733	880	1026	1172	1320	0	0	27	53	78	103	130	157	184	210	237
WNP-3	0	0	0	0	0	0	0	0	0	74	143	0	0	0	0	0	0	0	0	0	31	58
WOLF CREEK	0	0	0	0	0	55	114	114	176	239	239	0	0	0	0	0	25	53	53	81	110	110
YANKEE	265	303	335	335	368	399	399	434	466	501	501	63	72	79	79	87	94	94	103	110	118	118
YELLOW CREEK-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YELLOW CREEK-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ZION-1	437	484	534	574	616	658	700	742	784	826	869	200	221	244	262	282	301	320	339	358	378	397
ZION-2	359	416	466	508	548	589	631	673	715	757	799	164	190	213	232	251	269	289	308	327	346	365
BRUNSWICK-1 PWR POOL	160	160	160	160	160	160	160	160	160	160	160	71	71	71	71	71	71	71	71	71	71	71
BRUNSWICK-2 PWR POOL	144	144	144	144	144	144	144	144	144	144	144	66	66	66	66	66	66	66	66	66	66	66
MORRIS-BWR	753	753	753	753	753	753	753	753	753	753	753	145	145	145	145	145	145	145	145	145	145	145
MORRIS-PWR	459	459	459	459	459	459	459	459	459	459	459	177	177	177	177	177	177	177	177	177	177	177
WEST VALLEY-BWR	418	418	418	418	418	418	418	418	418	418	418	66	66	66	66	66	66	66	66	66	66	66
WEST VALLEY-PWR	235	235	235	235	235	235	235	235	235	235	235	93	93	93	93	93	93	93	93	93	93	93
BWR GENERIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PWR GENERIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE A.4. (contd)

REACTOR	ASSEMBLIES									MTIHM									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
ARKANSAS NUCL ONE-1	732	792	853	853	915	978	978	1041	1103	1103	339	367	395	395	424	453	453	482	511	511
ARKANSAS NUCL ONE-2	535	589	589	643	698	698	754	810	810	865	228	251	251	274	298	298	322	345	345	369
BEAVER VALLEY-1	594	658	723	723	789	857	857	925	991	991	274	303	333	333	364	395	395	427	457	457
BEAVER VALLEY-2	242	307	307	372	438	438	506	574	574	640	112	142	142	172	202	202	234	265	265	296
BELLEFONTE-1	196	279	367	367	455	455	544	633	633	720	85	122	161	161	200	200	239	278	278	317
BELLEFONTE-2	62	134	134	221	221	309	399	399	487	574	28	59	59	97	97	136	176	176	215	253
BIG ROCK POINT	328	346	364	382	401	420	504	504	504	504	42	45	47	49	52	54	65	65	65	65
BRAIDWOOD-1	370	421	472	524	577	630	683	736	788	840	156	178	200	222	244	266	289	311	333	355
BRAIDWOOD-2	242	293	345	397	450	503	556	609	661	713	102	124	146	168	190	213	235	257	279	301
BROWNS FERRY-1	2492	2492	2689	2888	2888	3091	3295	3295	3497	3696	444	444	479	514	514	549	585	585	621	656
BROWNS FERRY-2	2314	2512	2706	2706	2911	3110	3110	3317	3513	3513	411	446	480	480	516	551	551	587	622	622
BROWNS FERRY-3	2182	2376	2573	2573	2773	2976	2976	3180	3380	3380	389	423	458	458	494	529	529	565	601	601
BRUNSWICK-1	1750	1910	1910	2072	2237	2237	2403	2569	2569	2732	327	357	357	388	418	418	449	480	480	511
BRUNSWICK-2	1518	1677	1839	1839	2004	2170	2170	2336	2499	2499	284	314	344	344	375	406	406	437	467	467
BYRON-1	417	467	518	570	622	675	728	781	833	885	176	197	219	241	263	285	308	330	352	374
BYRON-2	377	428	479	531	584	637	690	743	795	847	159	181	203	225	247	269	292	314	336	358
CALLAWAY-1	441	520	520	600	682	682	764	846	846	927	193	226	226	260	295	295	329	364	364	398
CALVERT CLIFFS-1	920	985	985	1050	1117	1117	1184	1251	1251	1317	353	378	378	403	429	429	455	481	481	507
CALVERT CLIFFS-2	824	824	889	955	955	1022	1089	1089	1156	1221	316	316	342	367	367	393	419	419	446	471
CATAWBA-1	371	428	482	537	596	653	710	710	767	821	157	181	204	227	252	277	301	301	325	348
CATAWBA-2	286	343	396	454	511	511	568	626	681	739	121	145	68	192	216	216	241	265	288	313
CLINTON-1	837	1037	1241	1241	1449	1659	1659	1870	2077	2077	153	190	227	227	265	303	303	342	380	380
COMANCHE PEAK-1	473	530	588	646	705	765	825	885	944	1002	205	228	251	274	298	322	347	371	395	418
COMANCHE PEAK-2	398	456	514	573	632	692	752	811	870	928	173	197	220	244	268	292	316	340	364	387
CONNECTICUT YANKEE	862	905	955	1004	1004	1053	1102	1151	1151	1199	355	372	391	412	412	432	452	472	472	492
COOPER	1875	1977	2079	2181	2287	2392	2496	2600	2703	2805	348	366	385	404	423	442	461	480	499	518
CRYSTAL RIVER-3	653	710	710	768	827	827	886	945	945	1003	303	330	330	357	384	384	411	439	439	466
D C COOK-1	974	974	1046	1118	1118	1192	1267	1267	1341	1414	434	434	467	500	500	534	568	568	602	636
D C COOK-2	869	869	949	1030	1030	1112	1194	1194	1275	1355	372	372	404	437	437	470	504	504	537	569
DAVIS-BESSE-1	540	596	641	641	685	730	730	775	819	819	254	280	301	301	322	343	343	364	384	384
DIABLO CANYON-1	447	503	561	561	620	679	738	798	856	856	205	231	257	257	285	312	339	366	393	393
DIABLO CANYON-2	360	360	418	475	536	594	654	654	713	770	165	165	192	218	246	273	300	300	327	353
DRESDEN-1	683	683	683	683	683	683	683	683	683	683	69	69	69	69	69	69	69	69	69	69
DRESDEN-2	2402	2575	2751	2751	2930	3111	3111	3292	3470	3470	437	468	499	499	532	564	564	597	629	629
DRESDEN-3	2135	2277	2277	2421	2568	2568	2716	2863	2863	3008	400	426	426	453	480	480	507	534	534	561
DUANE ARNOLD	1302	1408	1516	1516	1626	1737	1737	1848	1957	1957	240	260	279	279	299	320	320	340	360	360
FARLEY-1	708	708	773	839	839	906	974	974	1040	1106	326	326	356	387	387	417	449	449	479	510
FARLEY-2	561	626	626	691	757	757	824	891	891	957	258	288	288	318	348	348	379	410	410	440
FERMI-2	971	1230	1487	1487	1755	1755	2021	2021	2289	2547	177	224	271	271	319	319	368	368	416	463
FITZPATRICK	2028	2205	2205	2385	2574	2751	2751	2938	3120	3120	374	406	406	439	473	505	505	539	572	572
FORT CALHOUN-1	573	573	613	653	653	694	735	735	776	816	207	207	222	236	236	250	265	265	280	294
GINNA	574	599	625	651	677	703	729	755	781	807	215	223	233	242	251	260	269	278	287	296
GRAND GULF-1	1354	1588	1588	1825	2067	2067	2311	2554	2554	2793	239	280	280	322	364	364	407	450	450	492
GRAND GULF-2	663	855	1046	1239	1437	1636	1836	2036	2233	2428	121	156	192	227	263	300	337	373	410	446
HARRIS -1	273	273	320	367	415	463	463	512	560	607	126	126	147	169	191	213	213	236	258	279
HARTSVILLE-A1	156	373	373	589	834	834	1059	1292	1292	1523	28	71	71	111	155	155	196	239	239	281
HARTSVILLE-A2	0	0	0	166	166	390	606	606	850	1072	0	0	0	30	30	75	114	114	158	199
HATCH-1	1929	2052	2178	2304	2432	2561	2691	2821	2949	3076	354	377	399	422	446	469	493	517	540	563

TABLE A.4. (contd)

REACTOR	ASSEMBLIES 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	MTIHM 1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
HATCH-2	1823	1947	2073	2200	2328	2457	2587	2716	2844	2970	332	355	378	401	424	448	471	495	518	541
HOPE CREEK-1	1087	1087	1331	1577	1577	1827	2079	2079	2328	2573	198	198	242	287	287	332	378	378	424	468
HUMBOLDT BAY	434	434	434	434	434	434	434	434	434	434	31	31	31	31	31	31	31	31	31	31
INDIAN POINT-1	160	160	160	160	160	160	160	160	160	160	31	31	31	31	31	31	31	31	31	31
INDIAN POINT-2	805	805	870	936	936	1003	1070	1070	1136	1201	365	365	395	425	425	455	486	486	516	546
INDIAN POINT-3	615	683	683	752	752	822	892	892	964	964	281	312	312	344	344	376	408	408	441	441
KEWAUNEE	665	699	733	767	801	837	873	909	943	977	258	271	284	297	310	324	337	351	364	377
LA CROSSE	444	466	488	510	533	556	579	601	623	645	50	52	55	57	60	62	65	67	70	72
LA SALLE-1	1337	1337	1539	1742	1742	1948	2155	2155	2360	2562	244	244	281	318	318	355	393	393	430	467
LA SALLE-2	1339	1339	1540	1743	1743	1950	2158	2158	2362	2563	244	244	281	318	318	356	394	394	431	467
LIMERICK-1	1227	1453	1453	1677	1908	1908	2141	2373	2373	2601	227	268	268	308	351	351	393	435	435	477
LIMERICK-2	172	172	396	609	609	851	1084	1084	1314	1544	31	31	72	111	111	155	197	197	239	281
MAINE YANKEE	1153	1153	1218	1283	1283	1350	1417	1417	1483	1548	434	434	458	483	483	508	533	533	558	582
MC GUIRE-1	557	614	668	723	781	838	838	896	953	1010	243	267	290	313	338	362	362	387	411	435
MC GUIRE-2	478	536	590	647	647	704	761	820	874	931	208	233	256	280	280	304	328	353	376	400
MIDLAND-1	169	169	230	287	287	346	346	406	464	464	79	79	107	133	133	161	161	189	216	216
MIDLAND-2	168	225	283	283	342	401	401	460	460	518	78	105	132	132	159	187	187	214	214	241
MILLSTONE-1	2349	2349	2529	2529	2710	2710	2897	2897	3079	3260	429	429	461	461	493	493	526	526	558	590
MILLSTONE-2	894	959	1025	1025	1091	1158	1226	1226	1292	1357	355	381	407	407	434	461	488	488	515	541
MILLSTONE-3	339	395	454	511	571	630	630	690	749	812	156	182	210	236	264	291	291	318	346	375
MONTICELLO	1939	2032	2126	2211	2211	2327	2414	2511	2606	2701	355	371	388	403	403	424	439	456	473	490
NINE MILE POINT-1	2063	2063	2241	2241	2423	2423	2608	2608	2792	2792	380	380	411	411	443	443	476	476	508	508
NINE MILE POINT-2	675	922	922	1157	1403	1403	1651	1651	1896	1896	125	167	167	211	255	255	299	299	343	343
NORTH ANNA-1	668	668	730	793	793	857	921	921	985	1048	307	307	336	365	365	394	424	424	453	482
NORTH ANNA-2	526	587	649	649	712	777	777	841	905	905	242	270	298	298	327	357	357	387	416	416
OCONEE-1	1071	071	1129	1188	1188	1247	1247	1309	1367	1367	498	498	524	552	552	579	579	608	635	635
OCONEE-2	749	809	871	871	934	934	1000	1000	1062	1124	347	375	404	404	433	433	464	464	492	521
OCONEE-3	482	543	543	605	605	668	668	733	796	796	224	252	252	281	281	310	310	340	369	369
OYSTER CREEK	2013	2013	2190	2372	2372	2556	2556	2741	2923	2923	364	364	395	427	427	459	459	492	524	524
PALISADES	393	893	954	1016	1016	1079	1142	1142	1204	1266	355	355	379	403	403	427	452	452	476	500
PALO VERDE-1	487	545	603	662	721	781	841	901	960	1019	206	231	256	282	308	334	360	387	412	438
PALO VERDE-2	434	491	549	607	666	726	786	846	905	964	183	207	233	258	284	310	336	362	388	414
PALO VERDE-3	419	477	535	594	654	714	774	833	892	950	177	202	227	253	279	305	332	357	383	408
PEACH BOTTOM-2	2785	2785	3013	3244	3244	3480	3717	3717	3951	4182	507	507	549	591	591	634	677	677	719	761
PEACH BOTTOM-3	2781	2781	3010	3242	3242	3478	3715	3715	3949	4180	506	506	548	590	590	633	676	676	719	761
PERRY-1	1210	1472	1472	1739	2010	2010	2281	2553	2553	2821	221	269	269	317	367	367	416	466	466	515
PERRY-2	405	661	926	926	1196	1469	1469	1743	2012	2012	74	121	169	169	218	268	268	318	367	367
PILGRIM-1	1832	2003	2175	2175	2352	2352	2532	2532	2706	2706	336	367	397	397	429	429	460	460	491	491
POINT BEACH-1	554	586	619	652	685	719	753	787	820	853	212	223	235	247	258	270	282	294	306	317
POINT BEACH-2	563	592	621	650	680	710	740	770	799	828	216	226	236	247	257	268	278	289	299	310
PRAIRIE ISLAND-1	669	705	741	778	815	852	890	927	964	1000	268	282	296	311	326	341	356	371	386	400
PRAIRIE ISLAND-2	631	667	703	739	776	813	850	887	924	961	252	267	281	296	310	325	340	355	370	384
QUAD CITIES-1	2313	2313	2470	2629	2629	2791	2954	2954	3115	3274	421	421	449	477	477	505	534	534	563	591
QUAD CITIES-2	2145	2291	2291	2442	2596	2596	2751	2902	2902	3054	394	420	420	446	473	473	501	527	527	554
RANCHO SECO-1	701	751	751	802	854	906	958	958	1010	1061	325	348	348	372	396	420	445	445	469	492
RIVER BEND-1	1053	1187	1325	1462	1601	1745	1886	2027	2166	2303	189	213	238	262	287	312	337	362	387	411
ROBINSON-2	533	579	626	673	721	721	769	817	865	912	229	249	269	290	310	310	331	351	372	392
SALEM-1	767	767	835	904	904	974	1045	1045	1115	1184	353	353	385	417	417	449	482	482	514	546

TABLE A.4. (contd)

REACTOR	ASSEMBLIES									MTIHM								
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
SALEM-2	567	642	719	719	796	875	875	954	1031	1031	291	325	361	361	397	433	433	469	505	505
SAN ONOFRE-1	310	310	357	357	406	406	455	455	503	503	115	115	132	132	150	150	168	168	186	186
SAN ONOFRE-2	404	475	475	547	547	621	621	695	695	775	169	199	199	229	229	260	260	291	291	324
SAN ONOFRE-3	400	400	472	545	545	619	619	693	693	766	167	167	197	228	228	259	259	290	290	321
SEABROOK-1	391	448	506	564	623	682	742	801	860	918	164	190	214	239	264	289	314	339	364	389
SEABROOK-2	65	119	176	234	293	352	411	471	530	588	28	50	75	99	124	149	174	199	224	249
SEQUOYAH-1	641	641	716	792	792	871	871	948	1025	1025	280	280	313	347	347	382	382	417	451	451
SEQUOYAH-2	560	635	635	711	787	787	866	944	944	1020	250	283	283	317	351	351	386	421	421	454
SHOREHAM	842	1002	1002	1164	1329	1329	1495	1661	1661	1824	155	184	184	214	244	244	274	305	305	335
SOUTH TEXAS PROJ-1	337	391	446	502	559	616	674	731	787	843	181	211	240	270	301	332	363	394	424	454
SOUTH TEXAS PROJ-2	160	216	273	329	387	444	502	559	615	671	86	116	147	177	208	239	270	301	331	361
ST. LUCIE-1	800	874	946	946	1023	1097	1097	1175	1248	1248	299	326	353	353	381	408	408	436	463	463
ST. LUCIE-2	435	502	581	581	651	732	732	803	883	883	165	190	220	220	247	278	278	305	335	335
SUMMER	365	365	430	495	495	562	629	629	695	760	162	162	190	219	219	248	278	278	307	336
SURRY-1	767	822	878	878	933	990	990	1047	1103	1103	349	373	399	399	424	450	450	476	502	502
SURRY-2	598	653	653	708	764	764	821	877	877	932	273	298	298	323	349	349	375	400	400	425
SUSQUEHANNA-1	1660	1660	1886	2114	2114	2347	2580	2580	2809	3036	298	298	338	378	378	419	460	460	501	541
SUSQUEHANNA-2	1287	1510	1736	1736	1967	2200	2200	2433	2662	2662	232	271	311	311	352	393	393	434	475	475
THREE MILE ISLAND-1	647	715	715	784	854	854	925	995	995	1066	300	331	331	363	396	396	429	461	461	493
TROJAN	724	767	810	854	898	943	988	1033	1077	1121	334	354	374	394	414	435	456	476	497	517
TURKEY POINT-3	735	786	786	843	895	895	954	1006	1006	1064	335	358	358	384	408	408	435	459	459	486
TURKEY POINT-4	765	765	821	881	881	939	1000	1000	1057	1116	349	349	375	403	403	429	457	457	483	511
VERMONT YANKEE	1920	2002	2085	2168	2253	2338	2423	2508	2592	2675	351	365	381	396	411	427	442	458	473	488
VOGTLE-1	336	393	451	509	568	627	687	746	805	863	155	181	208	235	262	289	317	344	371	398
VOGTLE-2	113	170	228	287	346	405	465	524	582	640	52	78	105	132	159	187	214	242	268	295
WATERFORD-3	501	501	567	631	699	766	833	833	900	964	211	211	239	266	295	324	352	352	381	408
WATTS BAR-1	396	471	471	547	624	624	701	701	779	855	177	210	210	244	278	278	312	312	347	381
WATTS BAR-2	251	324	400	400	477	555	555	633	633	710	112	145	179	179	213	247	247	282	282	316
WNP-1	59	110	167	225	285	345	405	464	523	581	27	50	76	103	130	157	185	212	239	264
WNP-2	1468	1618	1769	1921	2076	2231	2387	2541	2694	2845	264	291	318	346	374	402	431	459	486	514
WNP-3	207	274	343	412	482	552	623	694	764	833	85	114	144	173	204	234	264	295	325	355
WOLF CREEK	303	367	367	432	498	498	565	632	632	697	140	169	169	199	230	230	261	292	292	322
YANKEE	533	569	569	605	681	681	681	681	681	681	126	134	134	143	160	160	160	160	160	160
YELLOW CREEK-1	0	0	0	0	63	63	144	225	225	305	0	0	0	0	29	29	66	102	102	136
YELLOW CREEK-2	0	0	0	0	0	64	64	145	226	226	0	0	0	0	0	30	30	67	102	102
ZION-1	912	955	998	1042	1087	1132	1177	1221	1265	1308	417	437	456	476	497	517	538	558	578	598
ZION-2	842	885	928	972	1016	1061	1106	1151	1195	1239	385	405	424	444	464	485	506	526	546	566
BRUNSWICK-1 PWR POOL	160	160	160	160	160	160	160	160	160	160	71	71	71	71	71	71	71	71	71	71
BRUNSWICK-2 PWR POOL	144	144	144	144	144	144	144	144	144	144	66	66	66	66	66	66	66	66	66	66
MORRIS-BWR	753	753	753	753	753	753	753	753	753	753	145	145	145	145	145	145	145	145	145	145
MORRIS-PWR	459	459	459	459	459	459	459	459	459	459	177	177	177	177	177	177	177	177	177	177
WEST VALLEY-BWR	418	418	418	418	418	418	418	418	418	418	66	66	66	66	66	66	66	66	66	66
WEST VALLEY-PWR	235	235	235	235	235	235	235	235	235	235	93	93	93	93	93	93	93	93	93	93
BWR GENERIC	0	0	0	0	0	0	0	188	537	1289	0	0	0	0	0	0	0	34	98	244
PWR GENERIC	0	0	0	0	0	0	0	0	189	376	0	0	0	0	0	0	0	0	87	173

TABLE A.4. (contd)

	ASSEMBLIES										MTIHM									
REACTOR	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
ARKANSAS NUCL ONE-1	1164	225	1225	1286	1347	1347	1524	1524	1524	1524	539	568	568	596	624	624	706	706	706	706
ARKANSAS NUCL ONE-2	919	919	973	1027	1027	1080	1132	1132	1184	1361	392	392	415	438	438	461	483	483	505	580
BEAVER VALLEY-1	1056	1121	1121	1186	1250	1250	1314	1471	1471	147	487	517	517	547	577	577	606	679	679	679
BEAVER VALLEY-2	705	705	770	835	835	899	962	962	1025	1089	326	326	356	85	385	415	444	444	473	503
BELLEFONTE-1	807	807	893	893	979	1063	1063	1147	1231	1231	355	355	393	393	431	468	468	505	542	542
BELLEFONTE-2	574	661	661	747	832	832	916	1000	1000	1084	253	292	292	330	367	367	404	441	441	478
BIG ROCK POINT	504	504	504	504	504	504	504	504	504	504	65	65	65	65	65	65	65	65	65	65
BRAIDWOOD-1	892	944	995	1046	1097	1147	1197	1247	1297	1347	377	399	421	442	464	485	506	527	548	569
BRAIDWOOD-2	765	816	867	918	969	1019	1069	1119	1169	1219	323	345	367	388	410	431	452	473	494	515
BROWNS FERRY-1	3696	3897	4097	4097	4861	4861	4861	4861	4861	4861	656	691	726	726	860	860	860	860	860	860
BROWNS FERRY-2	3714	3908	3908	4108	4308	5072	5072	5072	5072	5072	657	691	691	726	761	895	895	895	895	895
BROWNS FERRY-3	3578	3776	3776	3972	4168	4168	4932	4932	4932	4932	636	671	671	705	740	740	875	875	875	875
BRUNSWICK-1	2894	2894	3055	3215	3215	3374	3533	4093	4093	4093	541	541	571	601	601	631	661	765	765	765
BRUNSWICK-2	2661	2823	2823	2984	3143	3143	3302	3862	3862	3862	498	528	528	558	588	588	618	722	722	722
BYRON-1	937	989	1040	1091	1142	1193	1243	1293	1343	1393	396	418	440	461	483	504	526	547	568	589
BYRON-2	899	951	1002	1053	1104	1154	1204	1254	1304	1354	380	402	424	445	467	488	509	530	551	572
CALLAWAY-1	1007	1007	1087	1167	1167	1245	1322	1322	1399	1476	432	432	466	500	500	533	565	565	598	631
CALVERT CLIFFS-1	1382	1382	1447	1512	1512	1577	1794	1794	1794	1794	532	532	558	583	583	608	693	693	693	693
CALVERT CLIFFS-2	1221	1286	1351	1351	1416	1481	1698	1698	1698	1698	471	496	521	521	547	572	657	657	657	657
CATAWBA-1	879	932	989	1043	1098	1151	1151	1204	1257	1314	372	395	419	442	465	488	488	510	532	557
CATAWBA-2	793	850	905	905	960	1014	1067	1122	1174	1229	336	360	383	383	407	430	452	475	497	521
CLINTON-1	2282	2487	2487	2690	2892	2892	3090	3288	3288	3487	417	455	455	492	529	529	565	601	601	638
COMANCHE PEAK-1	1060	1118	1176	1234	1292	1349	1405	1461	1517	1573	441	465	488	511	535	558	580	603	626	648
COMANCHE PEAK-2	986	1044	1102	1159	1216	1273	1329	1385	1442	1498	410	434	457	480	503	526	549	571	594	617
CONNECTICUT YANKEE	1247	1404	1404	1404	1404	1404	1404	1404	1404	1404	512	576	576	576	576	576	576	576	576	576
COOPER	2906	1007	3108	3209	3310	3858	3858	3858	3858	3858	536	555	573	592	610	711	711	711	711	711
CRYSTAL RIVER-3	1061	1061	1119	1176	1176	1353	1353	1353	1353	1353	492	492	519	546	546	628	628	628	628	628
D C COOK-1	1414	1487	1559	1559	1631	1703	1896	1896	1896	1896	638	669	702	702	735	768	857	857	857	857
D C COOK-2	1355	1435	1515	1515	1594	1673	1866	1866	1866	1866	569	602	634	634	666	698	776	776	776	776
DAVIS-BESSE-1	863	907	907	950	993	993	1035	1077	1077	1254	405	425	425	446	466	466	485	505	505	588
DIABLO CANYON-1	914	973	1030	1087	1087	1144	1200	1255	1310	1367	420	447	473	499	499	525	551	576	601	628
DIABLO CANYON-2	829	886	943	943	1000	1056	1113	1168	1225	1225	381	406	433	433	459	485	511	536	562	562
DRESDEN-1	683	683	683	683	683	683	683	683	683	683	69	69	69	69	69	69	69	69	69	69
DRESDEN-2	3646	3822	3822	4546	4546	4546	4546	4546	4546	4546	660	692	692	822	822	822	822	822	822	822
DRESDEN-3	3152	3152	3296	4020	4020	4020	4020	4020	4020	4020	587	587	614	747	747	747	747	747	747	747
DUANE ARNOLD	2065	2173	2173	2280	2386	2386	2492	2860	2860	2860	380	399	399	419	438	438	458	525	525	525
FARLEY-1	1106	1171	1236	1236	1301	1365	1365	1429	1493	1493	510	540	570	570	600	629	629	659	688	688
FARLEY-2	1022	1022	1087	1152	1152	1216	1279	1279	1342	1499	470	470	500	530	530	559	588	588	617	689
FERMI-2	2547	2810	2810	3070	3070	3325	3576	3576	3831	3831	463	511	511	558	558	605	650	650	697	697
FITZPATRICK	3300	3480	3480	3658	3835	3835	4012	4572	4572	4572	605	638	638	670	703	703	735	837	837	837
FORT CALHOUN-1	816	856	896	896	936	1069	1069	1069	1069	1069	294	308	323	323	337	384	384	384	384	384
ZINNA	833	859	885	1006	1006	1006	1006	1006	1006	1006	305	314	324	366	366	366	366	366	366	366
GRAND GULF-1	3030	3030	3267	3502	3502	3735	3964	3964	4193	4423	534	534	576	617	617	658	698	698	739	779
GRAND GULF-2	2622	2816	3009	3202	3394	3584	3771	3958	4146	4335	481	517	552	588	623	658	692	727	761	796
HARRIS -1	654	654	701	748	794	840	840	886	932	978	301	301	322	344	365	386	386	408	429	450
HARTSVILLE-A1	1747	1747	1972	2196	2196	2418	2636	2636	2855	3074	321	321	362	403	403	444	483	483	523	563
HARTSVILLE-A2	1072	1299	1528	1528	1749	1969	1969	2188	2408	2408	199	240	282	282	322	362	362	402	442	442
HATCH-1	3202	3328	3453	3578	3702	3826	4386	4386	4386	4386	586	609	632	654	677	700	802	802	802	802

TABLE A.4. (contd)

REACTOR	ASSEMBLIES										MTIHM									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
HATCH-2	3096	3222	3347	3472	3596	3719	3840	3962	4084	4644	564	597	610	632	655	677	699	722	744	846
HOPE CREEK-1	2573	2818	3061	3061	3303	3541	3541	3777	4014	4014	468	513	557	557	601	644	644	687	730	730
HUMBOLDT BAY	434	434	434	434	434	434	434	434	434	434	31	31	31	31	31	31	31	31	31	31
INDIAN POINT-1	160	160	160	160	160	160	160	160	160	160	31	31	31	31	31	31	31	31	31	31
INDIAN POINT-2	1201	1266	1331	1524	1524	1524	1524	1524	1524	1524	546	575	605	693	693	693	693	693	693	693
INDIAN POINT-3	1032	1099	1099	1169	1235	1235	1428	1428	1428	1428	472	503	503	535	565	565	651	651	651	651
KEWAUNEE	1011	1045	1079	1113	1147	1268	1268	1268	1268	1268	390	403	416	430	443	489	489	489	489	489
LA CROSSE	717	717	717	717	717	717	717	717	717	717	80	80	80	80	80	80	80	80	80	80
LA SALLE-1	2562	2764	2964	2964	3163	3359	3359	3553	3748	3748	467	504	540	540	577	612	612	648	683	683
LA SALLE-2	2563	2764	2964	2964	3163	3358	3358	3552	3747	3747	467	504	540	540	577	612	612	647	683	683
LIMERICK-1	2827	2827	3053	3277	3277	3499	3717	3717	3936	4156	518	518	559	600	600	640	680	680	720	760
LIMERICK-2	1544	1768	1993	1993	2217	2437	2437	2656	2876	2876	281	322	363	363	403	443	443	483	523	523
MAINE YANKEE	1548	1613	1678	1678	1743	1960	1960	1960	1960	1960	582	606	631	631	655	737	737	737	737	737
MC GUIRE-1	1064	1122	1176	1230	1285	1285	1338	1393	1446	1499	458	482	505	528	552	552	574	597	620	642
MC GUIRE-2	986	1041	1096	1096	1150	1205	1257	1312	1364	1416	424	447	470	470	493	516	538	562	584	606
MIDLAND-1	522	522	580	637	637	693	693	748	805	805	243	243	270	296	296	323	323	349	375	375
MIDLAND-2	576	576	634	691	691	748	804	804	860	860	268	268	295	322	322	348	374	374	400	400
MILLSTONE-1	3260	3440	3440	4020	4020	4020	4020	4020	4020	4020	590	622	622	724	724	724	724	724	724	724
MILLSTONE-2	1423	1423	1488	1552	1617	1617	1682	1899	1899	1899	568	568	594	620	646	646	672	759	759	759
MILLSTONE-3	860	922	980	1037	1094	1094	1150	1206	1262	1318	397	426	452	479	505	505	531	557	582	608
MONTICELLO	2796	2890	2983	2983	3467	3467	3467	3467	3467	3467	507	523	540	540	625	625	625	625	625	625
NINE MILE POINT-1	2972	2972	3504	3504	3504	3504	3504	3504	3504	3504	540	540	634	634	634	634	634	634	634	634
NINE MILE POINT-2	2137	2378	2378	2617	2617	2853	2853	3085	3318	3318	387	430	430	473	473	515	515	557	599	599
NORTH ANNA-1	1048	1110	1171	1171	1233	1293	1293	1353	1510	1510	482	511	539	539	567	595	595	622	695	695
NORTH ANNA-2	967	1029	1029	1090	1152	1152	1212	1272	1429	1429	445	473	473	501	530	530	557	585	657	657
OCONEE-1	1425	1425	1483	1541	1541	1718	1718	1718	1718	1718	662	662	689	715	715	798	798	798	798	798
OCONEE-2	1124	1186	1186	1248	1425	1425	1425	1425	1425	1425	521	550	550	579	661	661	661	661	661	661
OCONEE-3	859	920	920	981	981	1158	1158	1158	1158	1158	398	427	427	455	455	537	537	537	537	537
OYSTER CREEK	3105	3665	3665	3665	3665	3665	3665	3665	3665	3665	556	655	655	655	655	655	655	655	655	655
PALISADES	1266	1327	1388	1388	1592	1592	1592	1592	1592	1592	500	524	547	547	627	627	627	627	627	627
PALO VERDE-1	1077	1135	1193	1251	1309	1368	1422	1478	1535	1592	463	489	514	539	564	589	614	638	663	688
PALO VERDE-2	1022	1081	1139	1197	1255	1313	1369	1425	1482	1539	439	465	490	515	541	566	590	615	640	665
PALO VERDE-3	1009	1067	1125	1183	1241	1297	1353	1409	1466	1523	434	459	485	510	535	560	584	609	633	658
PEACH BOTTOM-2	4182	4412	4641	4641	4870	5634	5634	5634	5634	5634	761	803	845	845	887	1026	1026	1026	1026	1026
PEACH BOTTOM-3	4180	4410	4639	4639	4868	5632	5632	5632	5632	5632	761	803	844	844	886	1025	1025	1025	1025	1025
PERRY-1	3085	3085	3350	3614	3614	3875	4132	4132	4389	4647	563	563	611	659	659	707	754	754	800	848
PERRY-2	2271	2543	2543	2806	3066	3066	3323	3580	3580	3839	414	459	459	507	555	555	601	648	648	696
PILGRIM-1	2690	3053	3053	3225	3225	3805	3805	3805	3805	3805	522	553	553	583	583	686	686	686	686	686
POINT BEACH-1	886	919	952	985	1106	1106	1106	1106	1106	1106	329	341	352	364	407	407	407	407	407	407
POINT BEACH-2	857	886	915	944	973	1094	1094	1094	1094	1094	320	330	340	351	361	404	404	404	404	404
PRAIRIE ISLAND-1	1036	1072	1108	1144	1180	1301	1301	1301	1301	1301	414	429	443	458	472	520	520	520	520	520
PRAIRIE ISLAND-2	997	1033	1069	1105	1141	1262	1262	1262	1262	1262	399	413	428	442	456	505	505	505	505	505
QUAD CITIES-1	2274	3432	3590	3590	4314	4314	4314	4314	4314	4314	591	618	646	646	774	774	774	774	774	774
QUAD CITIES-2	3205	3205	3353	4077	4077	4077	4077	4077	4077	4077	581	581	607	734	734	734	734	734	734	734
RANCHO SECO-1	1112	1163	1163	1214	1265	1442	1442	1442	1442	1442	516	540	540	563	587	669	669	669	669	669
RIVER BEND-1	2443	2580	2716	2852	2990	3124	3256	3388	3524	3657	435	460	484	508	532	556	579	602	626	650
ROBINSON-2	912	959	1006	1163	1163	1163	1163	1163	1163	1163	392	413	433	500	500	500	500	500	500	500
SALEM-1	1184	1253	1321	1321	1389	1582	1582	1582	1582	1582	546	578	609	609	641	730	730	730	730	730

TABLE A.4. (contd)

REACTOR	ASSEMBLIES 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	MTIHM 2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
SALEM-2	1108	1185	1185	1260	1335	1335	1528	1528	1528	1528	540	575	575	610	644	644	733	733	733	733
SAN ONOFRE-1	551	708	708	708	708	708	708	708	708	708	204	262	262	262	262	262	262	262	262	262
SAN ONOFRE-2	834	834	913	913	984	984	1054	1054	1124	1124	349	349	382	382	412	412	441	441	470	470
SAN ONOFRE-3	766	838	838	910	910	981	981	1051	1051	1121	321	351	351	381	381	411	411	440	440	469
SEABROOK-1	976	1034	1092	1149	1206	1262	1318	1374	1430	1486	413	438	462	487	511	534	558	582	606	629
SEABROOK-2	646	704	762	819	876	933	989	1045	1101	1157	274	298	323	347	371	395	419	442	466	490
SEQUOYAH-1	1101	1177	1177	1252	1327	1327	1402	1402	1595	1595	485	518	518	552	585	585	618	618	704	704
SEQUOYAH-2	1096	1096	1171	1171	1246	1320	1320	1513	1513	1513	488	488	521	521	555	588	588	673	673	673
SHOREHAM	1986	1986	2148	2309	2309	2468	2624	2624	2780	2937	364	364	394	424	424	453	481	481	510	539
SOUTH TEXAS PROJ-1	899	955	1011	1066	1121	1175	1229	1283	1337	1391	484	514	544	574	604	633	662	691	720	749
SOUTH TEXAS PROJ-2	727	783	839	894	949	1003	1057	1111	1165	1219	391	422	452	481	511	540	569	598	627	656
ST. LUCIE-1	1324	1396	1396	1471	1541	1541	1611	1828	1828	1828	490	517	517	544	569	569	595	674	674	674
ST. LUCIE-2	952	1031	1031	1099	1177	1177	1243	1320	1320	1387	362	392	392	418	447	447	472	502	502	527
SUMMER	760	825	890	890	954	1017	1017	1080	1143	1143	336	364	393	393	421	449	449	476	504	504
SURRY-1	1158	1214	1214	1269	1324	1324	1481	1481	1481	1481	527	552	552	577	602	602	674	674	674	674
SURRY-2	988	988	1043	1098	1098	1255	1255	1255	1255	1255	451	451	476	501	501	572	572	572	572	572
SUSQUEHANNA-1	3036	3263	3488	3488	3711	3930	3930	4149	4369	4369	541	581	621	621	660	699	699	737	776	776
SUSQUEHANNA-2	2888	3114	3114	3339	3562	3562	3780	3999	3999	4219	515	554	554	594	634	634	672	711	711	750
THREE MILE ISLAND-1	1133	1133	1201	1269	1269	1446	1446	1446	1446	1446	525	525	556	588	588	670	670	670	670	670
TROJAN	1165	1209	1252	1295	1338	1380	1422	1464	1657	1657	537	557	577	597	617	636	656	675	764	764
TURKEY POINT-3	1115	1115	1174	1233	1233	1390	1390	1390	1390	1390	509	509	536	563	563	636	636	636	636	636
TURKEY POINT-4	1116	1173	1232	1232	1389	1389	1389	1389	1389	1389	511	537	564	564	636	636	636	636	636	636
VERMONT YANKEE	2758	2841	2924	3007	3375	3375	3375	3375	3375	3375	504	519	534	549	616	616	616	616	616	616
VOGTLE-1	921	979	1037	1094	1151	1207	1263	1319	1375	1431	425	451	478	504	531	556	582	608	634	660
VOGTLE-2	698	756	814	871	928	984	1040	1096	1152	1208	322	348	375	401	428	454	479	505	531	557
WATERFORD-3	1031	1095	1160	1160	1225	1287	1352	1414	1477	1477	436	464	491	491	519	545	573	599	626	626
WATTS BAR-1	856	931	1006	1006	1081	1155	1155	1228	1228	1302	381	415	448	448	481	514	514	546	546	579
WATTS BAR-2	785	785	861	936	936	1010	1083	1083	1156	1156	350	350	383	417	417	450	482	482	514	514
WNP-1	639	697	755	812	869	925	981	1037	1093	1149	291	318	344	370	396	422	447	473	499	524
WNP-2	2996	3147	3297	3447	3596	3742	3888	4034	4181	4327	541	569	596	623	650	677	703	730	756	783
WNP-3	902	971	1039	1107	1175	1242	1308	1374	1440	1507	385	415	444	473	503	532	560	589	617	646
WOLF CREEK	762	762	827	891	891	955	1018	1018	1081	1144	352	352	382	411	411	441	470	470	499	528
YANKEE	681	681	681	681	681	681	681	681	681	681	160	160	160	160	160	160	160	160	160	160
YELLOW CREEK-1	386	386	466	546	546	624	701	701	778	855	170	170	204	238	238	271	303	303	336	368
YELLOW CREEK-2	306	387	387	467	546	546	623	700	700	777	136	171	171	204	238	238	270	303	303	336
ZION-1	1352	1395	1438	1481	1524	1717	1717	1717	1717	1717	618	638	657	677	697	785	785	785	785	785
ZION-2	1282	1326	1369	1412	1455	1648	1648	1648	1648	1648	586	606	626	646	665	753	753	753	753	753
BRUNSWICK-1 PWR POOL	160	160	160	160	160	160	160	160	160	160	71	71	71	71	71	71	71	71	71	71
BRUNSWICK-2 PWR POOL	144	144	144	144	144	144	144	144	144	144	66	66	66	66	66	66	66	66	66	66
MORRIS-BWR	753	753	753	753	753	753	753	753	753	753	145	145	145	145	145	145	145	145	145	145
MORRIS-PWR	459	459	459	459	459	459	459	459	459	459	177	177	177	177	177	177	177	177	177	177
WEST VALLEY-BWR	418	418	418	418	418	418	418	418	418	418	66	66	66	66	66	66	66	66	66	66
WEST VALLEY-PWR	235	235	235	235	235	235	235	235	235	235	93	93	93	93	93	93	93	93	93	93
BWR GENERIC	2216	3442	4663	7016	9236	12349	16114	21495	25775	30683	419	649	877	1321	1729	2310	3013	4030	4824	5735
PWR GENERIC	802	1544	2266	3018	4485	5916	7925	10286	13334	16267	370	707	1035	1367	2018	2653	3553	4591	5946	7230

TABLE A.4. (contd)

REACTOR	ASSEMBLIES							MTIHM						
	2014	2015	2016	2017	2018	2019	2020	2014	2015	2016	2017	2018	2019	2020
ARKANSAS NUCL ONE-1	1524	1524	1524	1524	1524	1524	1524	706	706	706	706	706	706	706
ARKANSAS NUCL ONE-2	1361	1361	1361	1361	1361	1361	1361	580	580	580	580	580	580	580
BEAVER VALLEY-1	1471	1471	1471	1471	1471	1471	1471	679	679	679	679	679	679	679
BEAVER VALLEY-2	1089	1153	1217	1217	1281	1345	1345	503	532	562	562	591	621	621
BELLEFONTE-1	1315	1399	1399	1484	1484	1569	1654	579	616	616	653	653	691	728
BELLEFONTE-2	1168	1168	1252	1252	1337	1422	1422	516	516	553	553	590	628	628
BIG ROCK POINT	504	504	504	504	504	504	504	65	65	65	65	65	65	65
BRAIDWOOD-1	1397	1447	1497	1547	1598	1649	1700	591	612	633	654	676	697	719
BRAIDWOOD-2	1269	1319	1369	1420	1471	1522	1573	537	558	579	600	622	644	665
BROWNS FERRY-1	4861	4861	4861	4861	4861	4861	4861	860	860	860	860	860	860	860
BROWNS FERRY-2	5072	5072	5072	5072	5072	5072	5072	895	895	895	895	895	895	895
BROWNS FERRY-3	4932	4932	4932	4932	4932	4932	4932	875	875	875	875	875	875	875
BRUNSWICK-1	4093	4093	4093	4093	4093	4093	4093	765	765	765	765	765	765	765
BRUNSWICK-2	3862	3862	3862	3862	3862	3862	3862	722	722	722	722	722	722	722
BYRON-1	1443	1493	1543	1593	1644	1695	1746	610	631	652	674	695	717	738
BYRON-2	1404	1454	1504	1554	1605	1656	1707	594	615	636	657	679	700	722
CALLAWAY-1	1476	1553	1631	1631	1709	1787	1787	631	663	696	696	729	762	762
CALVERT CLIFFS-1	1794	1794	1794	1794	1794	1794	1794	693	693	693	693	693	693	693
CALVERT CLIFFS-2	1698	1698	1698	1698	1698	1698	1698	657	657	657	657	657	657	657
CATAWBA-1	1366	1419	1474	1528	1582	1582	1636	579	601	624	647	670	670	693
CATAWBA-2	1281	1336	1336	1390	1445	1499	1553	543	566	566	589	612	635	658
CLINTON-1	3885	3885	3885	4086	4086	4287	4489	674	674	711	747	747	784	821
COMANCHE PEAK-1	1629	1685	1742	1799	1856	1913	1970	671	693	716	739	762	785	808
COMANCHE PEAK-2	1554	1611	1668	1725	1782	1839	1896	639	662	685	708	731	754	777
CONNECTICUT YANKEE	1404	1404	1404	1404	1404	1404	1404	576	576	576	576	576	576	576
COOPER	3858	3858	3858	3858	3858	3858	3858	711	711	711	711	711	711	711
CRYSTAL RIVER-3	1353	1353	1353	1353	1353	1353	1353	628	628	628	628	628	628	628
D C COOK-1	1896	1896	1896	1896	1896	1896	1896	857	857	857	857	857	857	857
D C COOK-2	1866	1866	1866	1866	1866	1866	1866	776	776	776	776	776	776	776
DAVIS-BESSE-1	1254	1254	1254	1254	1254	1254	1254	588	588	588	588	588	588	588
DIABLO CANYON-1	1367	1423	1480	1536	1592	1649	1649	628	653	679	705	731	757	757
DIABLO CANYON-2	1281	1336	1394	1449	1506	1506	1563	588	613	640	665	691	691	718
DRESDEN-1	683	683	683	683	683	683	683	69	69	69	69	69	69	69
DRESDEN-2	4546	4546	4546	4546	4546	4546	4546	822	822	822	822	822	822	822
DRESDEN-3	4020	4020	4020	4020	4020	4020	4020	747	747	747	747	747	747	747
DUANE ARNOLD	2860	2860	2860	2860	2860	2860	2860	525	525	525	525	525	525	525
FARLEY-1	1650	1650	1650	1650	1650	1650	1650	761	761	761	761	761	761	761
FARLEY-2	1499	1499	1499	1499	1499	1499	1499	689	689	689	689	689	689	689
FERMI-2	4084	4337	4337	4587	4587	4847	4847	743	789	789	834	834	882	882
FITZPATRICK	4572	4572	4572	4572	4572	4572	4572	837	837	837	837	837	837	837
FORT CALHOUN-1	1069	1069	1069	1069	1069	1069	1069	384	384	384	384	384	384	384
GINNA	1006	1006	1006	1006	1006	1006	1006	366	366	366	366	366	366	366
GRAND GULF-1	4423	4653	4884	4884	5116	5349	5349	779	820	860	860	901	942	942
GRAND GULF-2	4523	4711	4900	5090	5280	5471	5662	831	865	900	935	970	1005	1040
HARRIS -1	1024	1024	1070	1116	1162	1208	1208	471	471	492	513	535	556	556
HARTSVILLE-A1	3074	3294	3515	3515	3737	3959	3959	563	603	643	643	684	724	724
HARTSVILLE-A2	2627	2847	2847	3068	3290	3290	3513	482	522	522	562	602	602	643
HATCH-1	4386	4386	4386	4386	4386	4386	4386	802	802	802	802	802	802	802

TABLE A.4. (contd)

	ASSEMBLIES							MTIHM						
REACTOR	2014	2015	2016	2017	2018	2019	2020	2014	2015	2016	2017	2018	2019	2020
HATCH-2	4644	4644	4644	4644	4644	4644	4644	846	846	846	846	846	846	846
HOPE CREEK-1	425	4488	4488	4727	4967	4967	5207	774	817	817	860	904	904	948
HUMBOLDT BAY	434	434	434	434	434	434	434	31	31	31	31	31	31	31
INDIAN POINT-1	160	160	160	160	160	160	160	31	31	31	31	31	31	31
INDIAN POINT-2	1524	1524	1524	1524	1524	1524	1524	693	693	693	693	693	693	693
INDIAN POINT-3	1428	1428	1428	1428	1428	1428	1428	651	651	651	651	651	651	651
KEWAUNEE	1268	1268	1268	1268	1268	1268	1268	489	489	489	489	489	489	489
LA CROSSE	717	717	717	717	717	717	717	80	80	80	80	80	80	80
LA SALLE-1	3943	4139	4139	4336	4533	4533	4731	719	754	754	790	826	826	862
LA SALLE-2	3942	4138	4138	4335	4532	4532	4730	719	754	754	790	826	826	862
LIMERICK-1	4156	4376	4597	4597	4819	5041	5041	760	800	840	840	880	921	921
LIMERICK-2	3095	3312	3312	3533	3755	3755	3978	563	603	603	643	683	683	724
MAINE YANKEE	1960	1960	1960	1960	1960	1960	1960	737	737	737	737	737	737	737
MC GUIRE-1	1692	1692	1692	1692	1692	1692	1692	724	724	724	724	724	724	724
MC GUIRE-2	1609	1609	1609	1609	1609	1609	1609	688	688	688	688	688	688	688
MIDLAND-1	861	861	917	974	974	1031	1031	401	401	427	453	453	480	480
MIDLAND-2	916	972	972	1029	1086	1086	1143	426	452	452	479	506	506	532
MILLSTONE-1	4020	4020	4020	4020	4020	4020	4020	724	724	724	724	724	724	724
MILLSTONE-2	1899	1899	1899	1899	1899	1899	1899	759	759	759	759	759	759	759
MILLSTONE-3	1376	1430	1430	1487	1544	1601	1658	634	660	660	686	713	739	765
MONTICELLO	3467	3467	3467	3467	3467	3467	3467	625	625	625	625	625	625	625
NINE MILE POINT-1	3504	3504	3504	3504	3504	3504	3504	634	634	634	634	634	634	634
NINE MILE POINT-2	3551	3551	3786	3786	4022	4258	4258	640	640	683	683	725	767	767
NORTH ANNA-1	1510	1510	1510	1510	1510	1510	1510	695	695	695	695	695	695	695
NORTH ANNA-2	1429	1429	1429	1429	1429	1429	1429	657	657	657	657	657	657	657
OCONEE-1	1718	1718	1718	1718	1718	1718	1718	798	798	798	798	798	798	798
OCONEE-2	1425	1425	1425	1425	1425	1425	1425	661	661	661	661	661	661	661
OCONEE-3	1158	1158	1158	1158	1158	1158	1158	537	537	537	537	537	537	537
OYSTER CREEK	3665	3665	3665	3665	3665	3665	3665	655	655	655	655	655	655	655
PALISADES	1592	1592	1592	1592	1592	1592	1592	627	627	627	627	627	627	627
PALO VERDE-1	1649	1706	1763	1820	1878	1936	1994	713	738	763	787	813	838	863
PALO VERDE-2	1595	1652	1709	1766	1824	1882	1940	689	714	739	764	789	814	840
PALO VERDE-3	1580	1637	1694	1752	1810	1868	1926	683	708	733	758	784	809	834
PEACH BOTTOM-2	5634	5634	5634	5634	5634	5634	5634	1026	1026	1026	1026	1026	1026	1026
PEACH BOTTOM-3	5632	5632	5632	5632	5632	5632	5632	1025	1025	1025	1025	1025	1025	1025
PERRY-1	4647	4906	5167	5167	5428	5689	5689	848	895	942	942	990	1038	1038
PERRY-2	4097	4097	4356	4617	4617	4878	5140	743	743	790	838	838	885	933
PILGRIM-1	3805	3805	3805	3805	3805	3805	3805	686	686	686	686	686	686	686
POINT BEACH-1	1106	1106	1106	1106	1106	1106	1106	407	407	407	407	407	407	407
POINT BEACH-2	1094	1094	1094	1094	1094	1094	1094	404	404	404	404	404	404	404
PRAIRIE ISLAND-1	1301	1301	1301	1301	1301	1301	1301	520	520	520	520	520	520	520
PRAIRIE ISLAND-2	1262	1262	1262	1262	1262	1262	1262	505	505	505	505	505	505	505
QUAD CITIES-1	4314	4314	4314	4314	4314	4314	4314	774	774	774	774	774	774	774
QUAD CITIES-2	4077	4077	4077	4077	4077	4077	4077	734	734	734	734	734	734	734
RANCHO SECO-1	1442	1442	1442	1442	1442	1442	1442	669	669	669	669	669	669	669
RIVER BEND-1	3789	3922	4059	4193	4327	4461	4599	673	697	720	744	768	792	816
ROBINSON-2	1163	1163	1163	1163	1163	1163	1163	500	500	500	500	500	500	500
SALEM-1	1582	1582	1582	1582	1582	1582	1582	730	730	730	730	730	730	730

TABLE A.4. (contd)

	ASSEMBLIES							MTIHM						
REACTOR	2014	2015	2016	2017	2018	2019	2020	2014	2015	2016	2017	2018	2019	2020
SALEM-2	1528	1528	1528	1528	1528	1528	1528	733	733	733	733	733	733	733
SAN ONOFRE-1	708	708	708	708	708	708	708	262	262	262	262	262	262	262
SAN ONOFRE-2	1341	1341	1341	1341	1341	1341	1341	561	561	561	561	561	561	561
SAN ONOFRE-3	1121	1191	1191	1262	1262	1333	1404	469	498	498	528	528	558	588
SEABROOK-1	1542	1598	1655	1712	1769	1826	1883	653	677	701	725	749	773	797
SEABROOK-2	1213	1269	1325	1382	1439	1496	1553	514	537	561	585	609	633	658
SEQUOYAH-1	1595	1595	1595	1595	1595	1595	1595	704	704	704	704	704	704	704
SEQUOYAH-2	1513	1513	1513	1513	1513	1513	1513	673	673	673	673	673	673	673
SHOREHAM	2937	3094	3252	3252	3411	3570	3570	539	567	596	596	626	655	655
SOUTH TEXAS PROJ-1	1445	1499	1554	1609	1664	1719	1774	778	807	837	866	896	925	955
SOUTH TEXAS PROJ-2	1273	1327	1382	1437	1492	1547	1602	685	714	744	774	803	833	862
ST. LUCIE-1	1828	1828	1828	1828	1828	1828	1828	674	674	674	674	674	674	674
ST. LUCIE-2	1464	1464	1531	1609	1609	1676	1754	556	556	582	612	612	637	667
SUMMER	1300	1300	1300	1300	1300	1300	1300	573	573	573	573	573	573	573
SURRY-1	1481	1481	1481	1481	1481	1481	1481	674	674	674	674	674	674	674
SURRY-2	1255	1255	1255	1255	1255	1255	1255	572	572	572	572	572	572	572
SUSQUEHANNA-1	4588	4808	4808	5029	5251	5251	5474	815	854	854	893	932	932	971
SUSQUEHANNA-2	4438	4438	4659	4881	4881	5103	5326	788	788	827	866	866	906	945
THREE MILE ISLAND-1	1446	1446	1446	1446	1446	1446	1446	670	670	670	670	670	670	670
TROJAN	1657	1657	1657	1657	1657	1657	1657	764	764	764	764	764	764	764
TURKEY POINT-3	1390	1390	1390	1390	1390	1390	1390	636	636	636	636	636	636	636
TURKEY POINT-4	1389	1389	1389	1389	1389	1389	1389	636	636	636	636	636	636	636
VERMONT YANKEE	3375	3375	3375	3375	3375	3375	3375	616	616	616	616	616	616	616
VOGTLE-1	1487	1543	1599	1656	1713	1770	1827	685	711	737	763	790	816	842
VOGTLE-2	1264	1320	1377	1434	1491	1548	1605	583	608	635	661	687	714	740
WATERFORD-3	1541	1603	1668	1731	1795	1795	1860	653	680	707	734	761	761	789
WATTS BAR-1	1375	1375	1449	1523	1523	1597	1597	612	612	645	678	678	710	710
WATTS BAR-2	1229	1303	1303	1377	1451	1451	1526	547	580	580	613	646	646	679
WNP-1	1205	1261	1317	1374	1431	1488	1545	550	575	601	627	653	679	705
WNP-2	4473	4620	4768	4916	5064	5212	5361	809	836	863	890	917	944	971
WNP-3	1573	1640	1707	1774	1841	1908	1976	674	703	732	761	790	819	848
WOLF CREEK	1144	1207	1271	1271	1335	1399	1399	528	557	586	586	616	645	645
YANKEE	681	681	681	681	681	681	681	160	160	160	160	160	160	160
YELLOW CREEK-1	855	932	1010	1010	1088	1166	1166	368	401	434	434	467	500	500
YELLOW CREEK-2	854	854	932	1010	1010	1088	1166	368	368	401	434	434	467	500
ZION-1	1717	1717	1717	1717	1717	1717	1717	785	785	785	785	785	785	785
ZION-2	1648	1648	1648	1648	1648	1648	1648	753	753	753	753	753	753	753
BRUNSWICK-1 PWR POOL	160	160	160	160	160	160	160	71	71	71	71	71	71	71
BRUNSWICK-2 PWR POOL	144	144	144	144	144	144	144	66	66	66	66	66	66	66
MORRIS-BWR	753	753	753	753	753	753	753	145	145	145	145	145	145	145
MORRIS-PWR	459	459	459	459	459	459	459	177	177	177	177	177	177	177
WEST VALLEY-BWR	418	418	418	418	418	418	418	66	66	66	66	66	66	66
WEST VALLEY-PWR	235	235	235	235	235	235	235	93	93	93	93	93	93	93
BWR GENERIC	36978	41630	47790	54108	59780	65870	73387	6896	7751	8887	10041	11079	12190	13565
PWR GENERIC	19581	23437	27048	31194	35459	39627	44133	8671	10337	10493	12280	14101	15886	17808

TABLE A.4. (contd)

TOTALS

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
PWR ASSEMBLY	14114	15744	18054	20085	22611	25663	28755	31951	35163	38720	42314
PWR MTIHM	5953	6661	7663	8539	9638	10954	12325	13705	15093	16640	18209
BWR ASSEMBLY	23157	25574	28105	31707	35206	39310	43438	47703	52467	56765	61629
BWR MTIHM	4189	4605	5058	5705	6333	7076	7819	8585	9443	10217	11095
TOTAL ASSEMBLY	37271	41318	46159	51792	57817	64973	72193	79654	87630	95485	103943
TOTAL MTHIM	10142	11267	12722	14244	15972	18030	20145	22290	24537	26857	29304

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
PWR ASSEMBLY	46146	49822	53653	57701	61436	65479	69434	73247	77410	81729
PWR MTIHM	19872	21476	23140	24903	26526	28291	30015	31692	33512	35399
BWR ASSEMBLY	86693	91643	97098	82383	87795	93035	99039	103858	110416	116381
BWR MTIHM	12005	12900	13880	14835	15810	16756	17834	18704	19884	20972
TOTAL ASSEMBLY	112839	121465	130751	140084	149231	158514	168473	177105	187826	198110
TOTAL MTIHM	31877	34376	37020	39737	42336	45046	47849	50395	53396	56371

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
PWR ASSEMBLY	86139	90916	95588	100416	105022	112791	118905	124328	130362	135773
PWR MTIHM	37341	39421	41474	43593	46035	49006	51693	54061	56749	59125
BWR ASSEMBLY	122458	129979	136444	145934	154611	164896	173174	183377	191105	198803
BWR MTIHM	22070	23429	24604	26335	27902	29779	31299	33197	34615	36031
TOTAL ASSEMBLY	208597	220895	232032	246350	260633	277687	292079	307705	321467	334576
TOTAL MTIHM	59411	62850	66078	69928	73937	78785	82992	87258	91363	95156

	2014	2015	2016	2017	2018	2019	2020
PWR ASSEMBLY	141846	147543	153022	159076	165184	171321	177513
PWR MTIHM	61774	64255	66633	69261	71900	74533	77213
BWR ASSEMBLY	208009	215754	224395	233415	242191	251031	261018
BWR MTIHM	37718	39135	40719	42361	43961	45571	47392
TOTAL ASSEMBLY	349855	363297	377417	392491	407375	422352	438531
TOTAL MTIHM	99493	103389	107352	111622	115861	120123	124605

TABLE A.5. Middle Case Maximum At-Reactor Capacity - Projected Annual Storage Requirements

POOL	ASSEMBLIES											MTIHM										
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MILLSTONE-2	50	59	89		70	66	65		65	65	66		20	24	28		28	27	26		26	26	26	0
PALISADES		2	58		60	59		60	60		61	62		1	23		23	23		23	23		24	24
TURKEY POINT-4		6	55		55	57		55	58		56	60		3	25		25	26		25	27		26	28
ST. LUCIE-1		3		72	70		73	71		74	72			1		26	26		27	26		27	26	0
MILLSTONE-1		49		172		173		176	175		180			9		30		31		31	31		32	0
TURKEY POINT-3			46	49		56	49		56	51		57			21	22		26	22		26	23			26
SURRY-1&2			31	121	58	53	107	54	54	110	56	55			14	55	26	24	49	25	25	50	26	25
OCONEE-3				53	60		60		61	61		62				25	28		28		28	28		29
ROBINSON-2					9	46	45	46		46	47	47					4	20	19	20		20	20	20
BRUNSWICK-2					59		156	158		159	162						11		29	30		30	30	0
LA SALLE-1&2					78	412		391	399		403	406					14	75		71	72		74	74
PRAIRIE ISLAND-1&2					21	71	69	71	72	72	72	73					8	28	28	28	29	29	29	29
PEACH BOTTOM-2					67	221		222	223		228	231					12	40		40	41		42	42
PEACH BOTTOM-3					58	223		223	225		229	232					11	41		41	41		42	42
BRUNSWICK-1						59	156		158	160		162						11	29		30	30		30
LA CROSSE						11	21	22	22	22	22	22						1	2	2	2	2	2	2
OCONEE-1&2						50	60	118	57	60	120	59						23	28	55	26	28	56	27
MONTICELLO						2	91		93	93	94	85							16		16	16	17	15
GINNA						25	25	25	25	25	26	26						9	9	9	9	9	9	9
FITZPATRICK							168		176	177		180							31		32	32		33
CALVERT CLIFFS-1&2								1	130	65	65	131									51	25	25	51
PILGRIM-1								92		171	172									16		30	30	0
INDIAN POINT-2									18		65	66									8		30	30
OYSTER CREEK									197		177	182									35		31	32
COOPER									57	102	102	102									10	19	18	19
SEQUOYAH-1&2									8	75	75	152									4	33	33	68
ARKANSAS NUCL ONE-1										1	61												28	0
BYRON-1&2										38	102	104										16	43	44
INDIAN POINT-3										36		69										16		32
DAVIS-BESSE-1										38	45											18	21	0
POINT BEACH-1&2										20	62	62										7	22	22
ZION-1&2											40	88											18	40
BEAVER VALLEY-1											47												22	0
FORT CALHOUN-1											18	40											6	14
BRAIDWOOD-1&2												64												27
D C COOK-1&2												71												31
MAINE YANKEE												24												9
VERMONT YANKEE												36												7
WNP-2												27												5
PWR TOTAL	50	70	259	295	403	483	553	501	664	837	1156	1372	20	28	11	128	169	206	235	211	281	356	490	585
BWR TOTAL		49		172	262	1101	592	1284	1725	884	1769	1665		9		30	48	199	107	232	310	160	319	301
TOTAL	50	119	259	467	665	1584	1145	1785	2389	1721	2925	3037	20	37	11	159	217	405	343	443	591	516	809	886

TABLE A.6. Middle Case Maximum At-Reactor Capacity - Projected Cumulative Storage Requirements

	ASSEMBLIES												MTIHM											
POOL	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MILLSTONE-2	50	109	178	178	248	314	379	379	444	509	575	575	20	44	72	72	100	127	153	153	180	206	232	232
PALISADES		2	60	60	120	179	179	239	299	299	360	422		1	23	23	47	69	59	93	116	116	140	164
TURKEY POINT-4		6	61	61	116	173	173	228	286	286	342	402		3	28	28	53	79	79	105	131	131	157	185
ST. LUCIE-1		3	3	75	145	145	218	289	289	363	435	435		1	1	27	53	53	80	105	105	132	159	159
MILLSTONE-1		49	49	221	221	394	394	570	745	745	925	925		9	9	39	39	70	70	101	131	131	163	163
TURKEY POINT-3			46	95	95	151	200	200	256	307	307	364			21	44	44	69	92	92	118	141	141	167
SURRY-1&2			31	152	210	263	370	424	478	588	644	699			14	69	96	120	169	193	218	268	293	318
OCONEE-3				53	113	113	173	173	234	295	295	357				25	52	52	80	80	109	137	137	166
ROBINSON-2					9	55	100	146	146	192	239	286					4	24	43	63	63	83	103	123
BRUNSWICK-2					59	59	215	373	373	532	694	694					11	11	40	70	70	99	130	130
LA SALLE-1&2					78	490	490	881	1280	1280	1683	2089					14	99	89	160	232	232	306	380
PRAIRIE ISLAND-1&2					21	92	161	232	304	376	448	521					8	37	64	93	122	150	179	208
PEACH BOTTOM-2					67	288	288	510	733	733	961	1192					12	52	52	93	134	134	175	217
PEACH BOTTOM-3					58	281	281	504	729	729	958	1190					11	51	51	92	133	133	174	217
BRUNSWICK-1						59	215	215	373	533	533	695						11	40	40	70	100	100	130
LA CROSSE						11	32	54	76	98	120	142						1	3	6	8	11	13	15
OCONEE-1&2						50	110	228	285	345	465	524						23	51	106	132	160	216	243
MONTICELLO						2	93	93	186	279	373	458							16	16	33	49	66	81
GINNA						25	50	75	100	125	151	177						9	18	26	35	44	53	62
FITZPATRICK							168	168	344	521	521	701							31	31	63	95	95	128
CALVERT CLIFFS-1&2								1	131	196	261	392									51	76	102	153
PILGRIM-1								92	92	263	435	436								16	16	47	77	77
INDIAN POINT-2									18	18	83	149									8	8	38	58
OYSTER CREEK									197	197	374	556									35	35	66	98
COOPER									97	159	261	363									10	29	48	66
SEQUOYAH-1&2									8	83	158	310									4	37	70	134
ARKANSAS NUCL ONE-1										1	62	62											29	29
BYRON-1&2										38	140	244										16	59	103
INDIAN POINT-3										36	36	105										16	16	48
DAVIS-BESSE-1										18	83	83										19	39	39
POINT BEACH-1&2										20	82	144										7	29	51
ZION-1&2											40	128											18	59
BEAVER VALLEY-1											47	47											22	22
FORT CALHOUN-1											18	58											6	21
WATERFORD-1&2												64												27
D C COOK-1&2												71												31
MAINE YANKEE												24												9
VERMONT YANKEE												36												7
WNP-2												27												5
PWR TOTAL	50	120	379	674	1077	1560	2113	2614	3278	4115	5271		20	49	160	288	457	663	898	1110	1391	1747	2237	2822
BWR TOTAL		49	49	221	483	1584	2176	3460	5185	6069	7838	9503		9	9	39	87	286	393	625	935	1094	1413	1714
TOTAL	50	169	428	895	1560	3144	4289	6074	8463	10184	13109	16146	20	57	168	327	544	949	1292	1734	2326	2841	3650	4536

TABLE A.7. Middle Case Maximum At-Reactor Capacity - Plus Transshipment - Projected Annual Storage Requirements

POOL	ASSEMBLIES												MTIHM											
	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MILLSTONE-1		49		172		173		176	175		180			9		30		31		31	31		32	0
PRAIRIE ISLAND-1&2					21	71	69	71	72	72	72	73					8	28	29	28	29	29	29	29
BRUNSWICK-1						118	156		158	160		162						22	29		30	30		30
BRUNSWICK-2							156	158		159	162								29	30		30	30	0
LA CROSSE						11	21	22	22	22	22	22						1	2	2	2	2	2	2
MONTICELLO						2	91		93	93	94	95							16		16	16	17	15
GINNA						25	25	25	25	25	26	26						9	9	9	9	9	9	9
ST. LUCIE-1							22	71		74	72								3	26		27	26	0
TURKEY POINT-3									56	51		57									26	23		26
TURKEY POINT-4								55	58		56	60								25	27		26	28
ST. LUCIE-2							68	77		67	79								26	29		25	30	0
FITZPATRICK							168		176	177		180							31		32	32		33
CALVERT CLIFFS-1&2								1	130	65	65	131									51	25	25	51
PILGRIM-1								92		171	172									16		30	30	0
INDIAN POINT-2									18		65	66									8		30	30
OYSTER CREEK									197		177	182									35		31	32
COOPER									57	102	102	102									10	19	18	19
SURRY-1&2									31	110	56	55									14	50	26	25
NORTH ANNA-1&2									61	61	124	63									28	28	57	29
INDIAN POINT-3										36		69										16		32
DAVIS-BESSE-1										38	85											18	21	0
POINT BEACH-1&2										20	62	62										7	22	22
BYRON-1&2											37	104											16	44
ZION-1&2												88												40
BRAIDWOOD-1&2											103	104											44	44
FORT CALHOUN-1											18	40											6	14
PALISADES												52												24
MIDLAND-1&2												57												27
D C COOK-1&2												71												31
MAINE YANKEE												24												9
PEACH BOTTOM-3												35												6
LIMERICK-1												224												41
LIMERICK-2												213												39
VERMONT YANKEE												36												7
WNP-2												27												5
PWR TOTAL					21	96	184	300	451	619	880	1212					8	37	70	118	191	258	366	513
BWR TOTAL		49		172		304	592	448	878	884	909	1268		9		30		54	107	79	156	160	161	229
TOTAL		49		172	21	400	776	748	1329	1503	1789	2480		9		30	8	91	177	197	347	417	527	742

TABLE A.8. Middle Case Maximum At-Reactor Capacity - Plus Transshipment - Projected Cumulative Storage Requirements

	ASSEMBLIES											MTIHM										
POOL	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
MILLSTONE-1		49	49	221	221	394	394	570	745	745	925	925		9	9	39	39	70	70	101	131	131	163	163
PRAIRIE ISLAND-1&2					21	92	161	232	304	376	448	521					8	37	64	93	122	150	179	208
BRUNSWICK-1						118	274	274	432	592	592	754						22	51	51	81	111	111	141
BRUNSWICK-2							156	314	314	473	635	635							29	59	59	88	119	119
LA CROSSE						11	32	54	76	98	120	142						1	3	6	8	11	13	15
MONTICELLO						2	93	93	186	279	373	458							16	16	33	49	66	81
GINNA						25	50	75	100	125	151	177						9	18	26	35	44	53	62
ST. LUCIE-1							22	93	93	167	239	239							8	34	34	61	87	87
TURKEY POINT-3									56	107	107	164									26	49	49	75
TURKEY POINT-4								55	113	113	169	229								25	52	52	78	105
ST. LUCIE-2							68	145	145	212	291	291							26	55	55	81	111	111
FITZPATRICK							168	168	344	521	521	701							31	31	63	95	95	128
CALVERT CLIFFS-1&2								1	131	196	261	392									51	76	102	153
PILGRIM-1								92	92	263	435	435								16	16	47	77	77
INDIAN POINT-2									18	18	83	149									8	8	38	68
OYSTER CREEK									197	197	374	556									35	35	66	98
COOPER									57	159	261	363									10	29	48	66
SURRY-1&2									31	141	197	252									14	64	89	115
NORTH ANNA-1&2									61	122	246	309									28	56	113	142
INDIAN POINT-3										36	36	105										16	16	48
DAVIS-BESSE-1										38	83	83										18	39	39
POINT BEACH-1&2										20	82	144										7	29	51
BYRON-1&2											37	141											16	60
ZION-1&2												88												40
BRAIDWOOD-1&2											103	207											44	88
FORT CALHOUN-1											18	58											6	21
PALISADES												62												24
MIDLAND-1&2												57												27
D C COOK-1&2												71												31
MAINE YANKEE												24												9
PEACH BOTTOM-3												35												6
LIMERICK-1												274												41
LIMERICK-2												213												39
VERMONT YANKEE												36												7
WNP-2												27												5
PWR TOTAL					21	117	301	601	1052	1671	2551	3763					8	46	116	234	425	682	1049	1562
BWR TOTAL		49	49	221	221	525	1117	1565	2443	2327	4236	5504		9	9	39	39	93	200	280	436	596	757	986
TOTAL		49	49	221	242	642	1418	2166	3495	4998	6787	9267		9	9	39	47	139	316	514	861	1278	1806	254

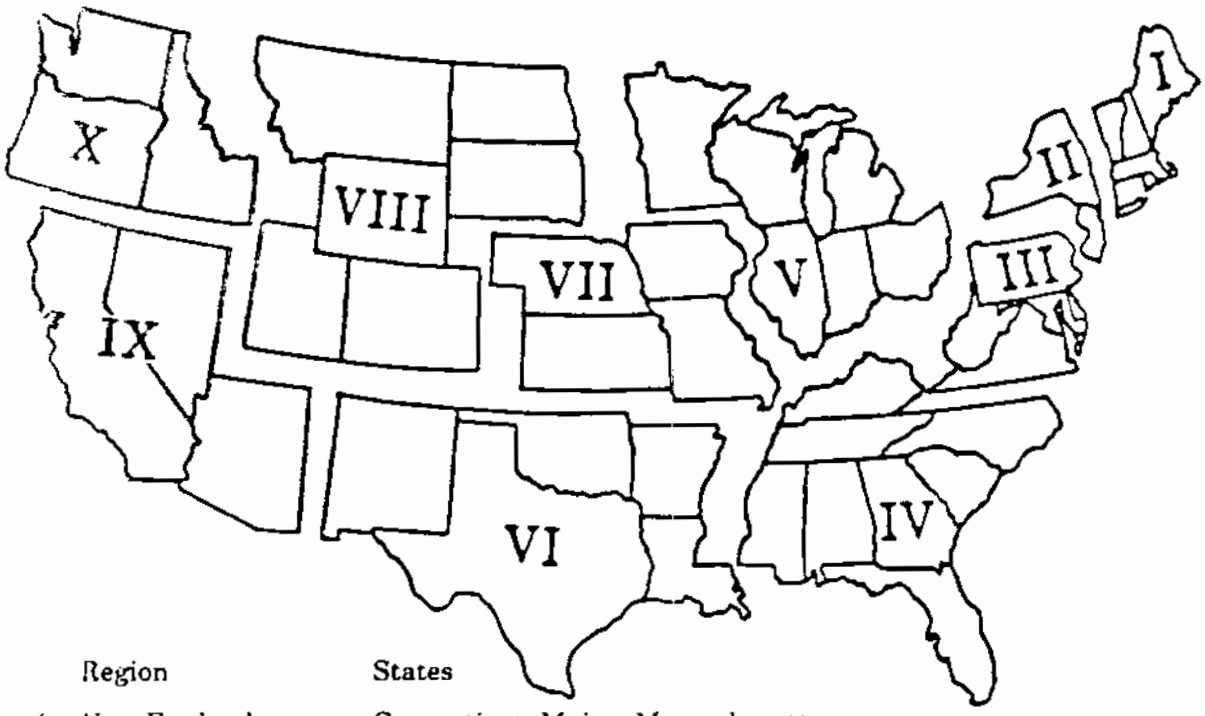
APPENDIX B

MAP OF FEDERAL ENERGY REGIONS

APPENDIX B

MAP OF FEDERAL ENERGY REGIONS

The following map of the federal regions (Figure 3.1) shows the geographical location of the generic reactor sites. Each generic reactor is located at a designated reactor site within the region. The reactor site selected is located as nearly as possible to the centroid of the region. It is not predicted that all of the generic reactors will be located at the within-region site. This method of allocation merely assures some site diversity for logistics study purposes.



	Region	States
I	New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
II	New York New Jersey	New Jersey, New York
III	Middle Atlantic	Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
IV	South Atlantic	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee
V	Midwest	Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
VI	Southwest	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
VII	Central	Iowa, Kansas, Missouri, Nebraska
VIII	North Central	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
IX	West	Arizona, California, Hawaii, Nevada
X	Northwest	Alaska, Idaho, Oregon, Washington

FIGURE B.1. Federal Energy Regions

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