# Energy Information Administration
# Spent Nuclear Fuel Data, Detailed United States

## as of December 31, 1998

Spent nuclear fuel data is collected by the Energy Information Administration (EIA) for the Office of Civilian Radioactive Waste Management (OCRWM). The spent nuclear fuel (SNF) data includes detailed characteristics of SNF generated by commercial U.S. nuclear power plants. From 1983 through 1995 this data was collected annually. Since 1996 this data has been collected every three years. The latest available detailed data covers all SNF discharged from commercial reactors before December 31, 1998, and is maintained in a database by the EIA. Summary data tables from this database may be found as indicated below. The detailed data are available on request from Jim Finucane who can be reached at 202-287-1966 or at jim.finucane@eia.doe.gov. Data on SNF discharged from commercial nuclear reactors as of December 31, 2001, is expected to be available in the latter part of 2002.

*December 31, 1998 (Next Release: June 2004)*

**Table 1. Total U.S. Commercial Spent Nuclear Fuel Discharges, 1968 - 1998**

| Reactor Type | Number of Assemblies | | |
|---|---|---|---|
| | Stored at Reactor Sites | Stored at Away-from-Reactor Facilities | Total |
| Boiling-Water Reactor | 73,538 | 2,957 | 76,495 |
| Pressurized-Water Reactor | 56,778 | 491 | 57,269 |
| High-Temperature Gas Cooled Reactor | 1,464 | 744 | 2,208 |
| **Total** | **131,780** | **4,192** | **135,972** |
| | **Metric Tonnes of Uranium (MTU)** | | |
| Boiling-Water Reactor | 13,230.3 | 554.0 | 13,784.2 |
| Pressurized-Water Reactor | 24,412.7 | 192.6 | 24,605.4 |
| High-Temperature Gas Cooled Reactor | 15.4 | 8.8 | 24.2 |
| **Total** | **37,658.3** | **755.4** | **38,413.7** |

MTU = Metric tonnes of uranium. **Notes:** A number of assemblies discharged prior to 1972, which were reprocessed, are not included in this table (no data is available for assemblies reprocessed before 1972).

Totals may not equal sum of components because of independent rounding.

**Source:** Energy Information Administration, Form RW-859, "Nuclear Fuel Data" (1998).

*December 31, 1998 (Next Release: June 2004)*

**Table 2. Annual Spent Fuel Discharges and Burnup, 1968 - 1998**

| Year | Number of Assemblies[a] | | | | Initial Uranium Content (Metric Tonnes of Uranium) | | | | Average Burnup (GWDt/MTU) All Discharged Assemblies | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | BWR | PWR | HTGR | Total | BWR | PWR | HTGR | Total | BWR | PWR | HTGR |
| 1968 | 5 | 0 | 0 | 5 | 0.6 | | | 0.6 | 1.6 | | |
| 1969 | 96 | 0 | 0 | 96 | 9.8 | | | 9.8 | 15.2 | | |
| 1970 | 29 | 99 | 0 | 128 | 5.6 | 39.0 | | 44.6 | 0.3 | 18.4 | |
| 1971 | 413 | 113 | 0 | 526 | 64.7 | 44.5 | | 109.2 | 5.8 | 23.9 | |
| 1972 | 801 | 282 | 0 | 1,083 | 145.8 | 99.9 | | 245.7 | 6.6 | 21.9 | |
| 1973 | 564 | 165 | 0 | 729 | 93.5 | 67.1 | | 160.6 | 12.4 | 23.7 | |
| 1974 | 1,290 | 574 | 0 | 1,864 | 241.6 | 207.3 | | 448.9 | 12.7 | 18.9 | |
| 1975 | 1,223 | 797 | 0 | 2,020 | 225.9 | 321.8 | | 547.7 | 16.9 | 18.1 | |
| 1976 | 1,666 | 932 | 0 | 2,598 | 298.1 | 401.4 | | 699.5 | 13.5 | 22.2 | |
| 1977 | 2,047 | 1,106 | 0 | 3,153 | 383.2 | 466.1 | | 849.3 | 16.6 | 25.1 | |
| 1978 | 2,239 | 1,665 | 0 | 3,904 | 383.6 | 698.6 | | 1,082.2 | 19.8 | 26.4 | |
| 1979 | 2,131 | 1,659 | 246 | 4,036 | 399.9 | 719.8 | 3.0 | 1,122.7 | 22.4 | 27.0 | 8.8 |
| 1980 | 3,330 | 1,456 | 0 | 4,786 | 619.8 | 618.1 | | 1,237.9 | 22.4 | 29.7 | |
| 1981 | 2,467 | 1,630 | 240 | 4,337 | 458.7 | 696.1 | 2.9 | 1,157.7 | 23.9 | 30.2 | 18.3 |
| 1982 | 1,951 | 1,491 | 0 | 3,442 | 357.2 | 640.4 | | 997.6 | 24.7 | 29.7 | |
| 1983 | 2,646 | 1,788 | 0 | 4,434 | 481.8 | 775.9 | | 1,257.7 | 26.7 | 30.1 | |
| 1984 | 2,735 | 1,933 | 240 | 4,908 | 497.9 | 839.4 | 2.7 | 1,340.0 | 25.4 | 29.5 | 33.2 |
| 1985 | 2,989 | 2,034 | 0 | 5,023 | 542.8 | 860.1 | | 1,402.9 | 23.3 | 31.8 | |
| 1986 | 2,551 | 2,254 | 0 | 4,805 | 458.3 | 978.9 | | 1,437.2 | 21.0 | 30.5 | |
| 1987 | 3,393 | 2,567 | 0 | 5,960 | 611.1 | 1,096.9 | | 1,708.0 | 22.4 | 31.3 | |
| 1988 | 2,956 | 2,583 | 0 | 5,539 | 535.6 | 1,097.6 | | 1,633.2 | 24.1 | 33.4 | |
| 1989 | 3,803 | 2,742 | 1,482 | 8,027 | 692.7 | 1,195.0 | 15.6 | 1,903.3 | 22.3 | 32.5 | 38.2 |
| 1990 | 3,487 | 3,476 | 0 | 6,963 | 633.0 | 1,501.0 | | 2,133.9 | 25.0 | 34.2 | |
| 1991 | 3,192 | 2,814 | 0 | 6,006 | 576.1 | 1,223.8 | | 1,799.9 | 28.2 | 35.3 | |
| 1992 | 3,808 | 3,629 | 0 | 7,437 | 689.9 | 1,566.7 | | 2,256.6 | 29.2 | 36.5 | |

| Table 2. Annual Spent Fuel Discharges and Burnup, 1968 - 1998 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Number of Assemblies[a] | | | | Initial Uranium Content (Metric Tonnes of Uranium) | | | | Average Burnup (GWDt/MTU) All Discharged Assemblies | | |
| | BWR | PWR | HTGR | Total | BWR | PWR | HTGR | Total | BWR | PWR | HTGR |
| 1993 | 3,883 | 3,424 | 0 | 7,307 | 700.0 | 1,487.7 | | 2,187.7 | 30.3 | 38.9 | |
| 1994 | 3,776 | 2,800 | 0 | 6,576 | 675.6 | 1,198.7 | | 1,874.3 | 33.1 | 40.0 | |
| 1995 | 4,425 | 3,808 | 0 | 8,233 | 786.7 | 1,659.9 | | 2,446.6 | 33.1 | 40.6 | |
| 1996 | 4,823 | 3,594 | 0 | 8,417 | 856.0 | 1,540.0 | | 2,396.0 | 34.9 | 38.5 | |
| 1997 | 3,896 | 3,532 | 0 | 7,428 | 681.8 | 1,561.5 | | 2,243.3 | 36.1 | 40.2 | |
| 1998 | 3,880 | 2,322 | 0 | 6,202 | 676.8 | 1,001.8 | | 1,678.6 | 36.4 | 43.3 | |
| **Total** | **76,495** | **57,269** | **2,208** | **135,972** | **13,784.2** | **24,605.4** | **24.2** | **38,413.7** | **25.1** | **33.4** | **32.2** |

[a]Some data for earlier years have been revised. When utilities reinsert assemblies which had been listed as permanently discharged in previous years, the historical totals change.

BWR = Boiling-water reactor; PWR = Pressurized-water reactor; HTGR = High-temperature gas cooled reactor. GWDt/MTU = Gigawattdays thermal per metric tonne of uranium.

**Note:** Totals may not equal sum of components because of independent rounding.

**Source:** Energy Information Administration, Form RW-859, "Nuclear Fuel Data" (1998).

| Table 3. Utility Owners of Reactors | |
|---|---|
| **Reactor Name** | **Electric Utility Name** |
| Arkansas Nuclear 1 | Entergy Arkansas, Inc |
| Arkansas Nuclear 2 | Entergy Arkansas, Inc |
| Beaver Valley 1[1] | Duquesne Light Company |
| Beaver Valley 2[1] | Duquesne Light Company |
| Big Rock Point | Consumers Energy |
| Braidwood 1 | Commonwealth Edison Company |
| Braidwood 2 | Commonwealth Edison Company |
| Browns Ferry 1 | Tennessee Valley Authority |
| Browns Ferry 2 | Tennessee Valley Authority |
| Browns Ferry 3 | Tennessee Valley Authority |
| Brunswick 1 | Carolina Power and Light Company |
| Brunswick 2 | Carolina Power and Light Company |
| Byron 1 | Commonwealth Edison Company |
| Byron 2 | Commonwealth Edison Company |
| Callaway | Ameren/UE |
| Calvert Cliffs 1[2] | Baltimore Gas and Electric Company |
| Calvert Cliffs 2[2] | Baltimore Gas and Electric Company |
| Catawba 1 | Duke Power |
| Catawba 2 | Duke Power |
| Clinton 1[3] | Illinois Power Company |
| Columbia[4] | Washington Public Power Supply System |
| Comanche Peak 1[5] | TU Electric Company |
| Comanche Peak 2[5] | TU Electric Company |
| Cook 1[6] | Indiana Michigan Power Company |
| Cook 2[6] | Indiana Michigan Power Company |
| Cooper Station | Nebraska Public Power District |
| Crystal River 3 | Florida Power Corporation |
| DavisBesse | First Energy Nuclear Operating Company |
| Diablo Canyon 1 | Pacific Gas and Electric Company |
| Diablo Canyon 2 | Pacific Gas and Electric Company |
| Dresden 1 | Commonwealth Edison Company |
| Dresden 2 | Commonwealth Edison Company |
| Dresden 3 | Commonwealth Edison Company |
| Duane Arnold[7] | IES Utilities, Inc. |
| Enrico Fermi 2 | Detroit Edison Company |
| Farley 1 | Southern Nuclear Operating Company |
| Farley 2 | Southern Nuclear Operating Company |
| Fitzpatrick | New York Power Authority |
| Fort Calhoun | Omaha Public Power District |
| Fort St. Vrain[8] | Public Service of Colorado |

| Table 3. Utility Owners of Reactors | |
|---|---|
| **Reactor Name** | **Electric Utility Name** |
| Ginna | Rochester Gas and Electric Corporation |
| Grand Gulf 1 | Entergy Operations, Inc. (System Energy Resources) |
| Haddam Neck | Northeast Utilities Service Company |
| Harris 1 | Carolina Power and Light Company |
| Hatch 1 | Southern Nuclear Operating Company |
| Hatch 2 | Southern Nuclear Operating Company |
| Hope Creek | Public Service Electric and Gas Company |
| Humboldt Bay | Pacific Gas and Electric Company |
| Indian Point 1 | Consolidated Edison Company |
| Indian Point 2 | Consolidated Edison Company |
| Indian Point 3 | New York Power Authority |
| Kewaunee[9] | Wisconsin Public Service Corporation |
| LaCrosse | Dairyland Power Cooperative |
| LaSalle County 1 | Commonwealth Edison Company |
| LaSalle County 2 | Commonwealth Edison Company |
| Limerick 1 | PECO Energy Company |
| Limerick 2 | PECO Energy Company |
| Maine Yankee | Maine Yankee Atomic Power Company |
| McGuire 1 | Duke Power |
| McGuire 2 | Duke Power |
| Millstone 1 | Northeast Utilities Service Company |
| Millstone 2 | Northeast Utilities Service Company |
| Millstone 3 | Northeast Utilities Service Company |
| Monticello[10] | Northern States Power Company |
| Nine Mile Point 1 | Niagara Mohawk Power Corporation |
| Nine Mile Point 2 | Niagara Mohawk Power Corporation |
| North Anna 1[11] | Virginia Power |
| North Anna 2[11] | Virginia Power |
| Oconee 1 | Duke Power |
| Oconee 2 | Duke Power |
| Oconee 3 | Duke Power |
| Oyster Creek[12] | GPU Nuclear Corporation |
| Palisades | Consumers Energy |
| Palo Verde 1 | Arizona Public Service Company |
| Palo Verde 2 | Arizona Public Service Company |
| Palo Verde 3 | Arizona Public Service Company |
| Peach Bottom 2 | PECO Energy Company |
| Peach Bottom 3 | PECO Energy Company |
| Perry 1 | First Energy Nuclear Operating Company |
| Pilgrim 1[13] | Boston Edison Company |
| Point Beach 1[14] | Wisconsin Electric Power Company |

| Table 3. Utility Owners of Reactors | |
|---|---|
| **Reactor Name** | **Electric Utility Name** |
| Point Beach 2[14] | Wisconsin Electric Power Company |
| Prairie Island 1[10] | Northern States Power Company |
| Prairie Island 2[10] | Northern States Power Company |
| Quad Cities 1 | Commonwealth Edison Company |
| Quad Cities 2 | Commonwealth Edison Company |
| Rancho Seco | Sacramento Municipal Utility District |
| River Bend 1 | Entergy Gulf States, Inc |
| Robinson 2 | Carolina Power and Light Company |
| Salem 1 | Public Service Electric and Gas Company |
| Salem 2 | Public Service Electric and Gas Company |
| San Onofre 1 | Southern California Edison Company |
| San Onofre 2 | Southern California Edison Company |
| San Onofre 3 | Southern California Edison Company |
| Seabrook | North Atlantic Energy Service Corporation |
| Sequoyah 1 | Tennessee Valley Authority |
| Sequoyah 2 | Tennessee Valley Authority |
| Shoreham | Long Island Power Authority |
| South Texas 1 | STP Nuclear Operating Company |
| South Texas 2 | STP Nuclear Operating Company |
| St. Lucie 1 | Florida Power and Light Company |
| St. Lucie 2 | Florida Power and Light Company |
| Summer | South Carolina Electric and Gas Company |
| Surry 1[11] | Virginia Power |
| Surry 2[11] | Virginia Power |
| Susquehanna 1[15] | PP&L, Inc. |
| Susquehanna 2[15] | PP&L, Inc. |
| Three Mile Island 1[12] | GPU Nuclear Corporation |
| Trojan | Portland General Electric Company |
| Turkey Point 3 | Florida Power and Light Company |
| Turkey Point 4 | Florida Power and Light Company |
| Vermont Yankee | Vermont Yankee Nuclear Power Corporation |
| Vogtle 1 | Southern Nuclear Operating Company |
| Vogtle 2 | Southern Nuclear Operating Company |
| Waterford 3 | Entergy Louisiana, Inc |
| Watts Bar 1 | Tennessee Valley Authority |
| Wolf Creek 1 | Wolf Creek Nuclear Operating Company |
| Yankee Rowe | Yankee Atomic Electric Company |
| Zion 1 | Commonwealth Edison Company |
| Zion 2 | Commonwealth Edison Company |

[1] FirstEnergy Nuclear Operating Co. acquired Duquesne Light Co.'s share of Beaver Valley 1 and 2.
[2] Parent company Constellation Energy Group transferred Calvert Cliffs 1 and 2 from Baltimore Gas and Electric Co. to Constellation Nuclear Group.
[3] AmerGen Energy Co. purchased Clinton 1 from Illinois Power Co.
[4] Washington Public Power Supply System was renamed Energy Northwest. The name of their only reactor (WNP) was changed to Columbia.
[5] TU Electric Co. changed its name to TXU Electric Co.
[6] American Electric Power is the holding company for six utilities including Indiana Michigan Power Co.
[7] Alliant Energy is the new name of the company that holds IES Utilities, Inc.
[8] Public Service of Colorado has been merged into Xcel Energy.
[9] Kewaunee is now operated by Nuclear Management Co.
[10] Monticello and Prairie Island 1 and 2 are now operated by Nuclear Management Co. Owner Northern States Power Co. merged with New Centuries Energy into Xcel Energy.
[11] Virginia Power changed to Dominion Virginia Power.
[12] AmerGen Energy Co. purchased Three Mile Island 1 and Oyster Creek from GPU Nuclear.
[13] Entergy Nuclear Generation Co. purchased Pilgrim 1 from Boston Edison Co. (now NSTAR).
[14] Point Beach 1 and 2 are now operated by Nuclear Management Co.
[15] Susquehanna 1 and 2 now operated by PPL Susquehanna LLC. PPL Utilities is new name for PP&L, Inc.

**Source:** Energy Information Administration, Form RW-859, "Nuclear Fuel Data" (1998).

Nuclear/Uranium Data