

Appendix F

Spent Fuel Projections

Each table provides the following information for each year out to the projected end of life for all plants involved:

- the projected annual spent fuel discharges;
- the projected cumulative spent fuel inventories; and
- the projected annual and cumulative requirements for additional storage capacity outside of the reactor basin, based on the "maximum at-reactor capacity" case. (See U.S. Department of Energy, *Spent Fuel Storage Requirements, DOE-RL-83-1*. These data are based on inventories and projections as of Sept. 30, 1982.)

All results are given both in number of assemblies and in metric tons of uranium. The inventories as of Dec. 31, 1982, are given in the first line of table F-1. (No such inventories exist for the light-water-reactors that are not currently operating.)

The cumulative inventories given in tables F-1 and F-2 do not include spent fuel that is currently stored at the West Valley and GE-Morris facilities. A breakdown of this fuel is as follows:

	<i>West Valley</i>		<i>GE-Morris</i>	
	<i>MTU</i>	<i>Assemblies</i>	<i>MTU</i>	<i>Assemblies</i>
Boiling-water reactor	75.1	515	141.6	753
Pressurized-water reactor. <u>93.4</u>	<u>235</u>		177.3	459
Totals	168.5	750	318.9	1,212
Aggregate totals:			487.4	1,962

The cumulative inventories also do not include any corrections for possible future shipments of spent fuel to or from nonreactor destinations, because there are no accurate projections of such shipments. Any such shipments would reduce requirements for additional spent fuel storage at reactor sites.

The assumed storage capacity of existing basins does not reflect potential technical measures that can increase the pool capacity, including burnup credit reracking and rod consolidation.

Table F= I.—Spent Fuel Storage Projections: Total Currently Operating Light-Water Reactors

Year	Annual discharge		Cumulative inventory		Annual storage ^a requirements		Cumulative storage requirements	
	Tonnes	Assemblies	Tonnes	Assemblies	Tonnes	Assemblies	Tonnes	Assemblies
1982	—	—	8,507	31,260	0	0	0	0
1983	1,301	4,595	9,808	35,855	0	0	0	0
1984	1,427	4,903	11,234	40,758	13	28	13	28
1985	1,391	4,804	12,624	45,346	0	0	13	28
1986	1,380	4,693	14,004	50,255	:	227	112	255
1987	1,556	5,616	15,560	55,871	174	402	286	657
1988	1,487	5,120	17,047	60,991	201	675	487	1,332
1989	1,316	4,582	18,363	65,573	297	947	784	2,279
1990	1,611	5,664	19,984	71,437	520	2,072	1,304	4,351
1991	1,415	4,990	20,390	76,427	408	1,461	1,712	5,812
1992	1,359	4,699	22,749	81,126	596	2,120	2,308	7,932
1993	1,575	5,710	24,324	86,836	676	2,503	2,984	10,435
1994	1,401	4,837	25,726	91,673	641	2,204	3,625	12,639
1995	1,371	4,839	27,097	96,512	766	2,567	4,391	15,206
1996	1,618	5,814	28,715	102,326	1,050	3,745	5,441	18,951
1997	1,368	4,745	30,103	107,071	941	3,062	6,383	22,013
1998	1,336	4,754	31,439	111,825	1,051	3,828	7,434	25,841
1999	1,717	6,010	33,156	117,835	1,461	5,232	8,916	31,073
2000	1,397	4,664	34,553	122,699	1,203	4,140	10,118	35,213
2001	1,302	4,674	35,856	127,373	1,191	4,282	11,308	39,495
2002	1,632	5,817	37,489	133,190	1,548	5,586	12,857	45,081
2003	1,371	4,735	38,859	137,925	1,273	4,523	14,130	49,604
2004	1,455	5,228	40,315	143,153	1,260	4,443	15,391	54,047
2005	1,564	5,541	41,880	148,694	1,498	5,397	16,889	59,444
2006	1,651	6,233	43,531	154,927	1,191	4,088	18,080	63,532
2007	1,679	5,783	45,209	160,710	1,262	4,567	19,342	68,099
2008	2,245	8,278	47,454	168,988	1,104	3,579	20,446	71,678
2009	1,152	3,486	48,607	172,492	806	2,676	21,312	74,354
2010	W6	3,195	49,512	175,669	638	2,332	21,889	76,686
2011	958	3,592	50,741	179,261	641	2,207	22,531	78,893
2012	752	2,475	51,223	181,736	397	1,454	22,927	80,347
2013	567	2,342	51,789	184,078	436	1,701	23,163	82,048
2014	714	2,640	52,504	186,718	572	2,313	23,936	84,361
2015	506	1,907	53,011	188,625	282	950	24,218	85,311
2016	614	2,264	53,624	190,889	355	1,354	24,572	86,647
2017	561	2,239	54,188	193,128	262	1,121	24,853	87,786
2018	270	690	54,454	193,318	181	497	25,015	88,283
2019	189	761	54,643	194,579	87	201	25,102	88,484
2020	129	326	54,773	194,905	57	133	25,160	88,617
2021	214		54,967	195,408	136	326	25,296	88,943
2022	168	x	55,155	195,794	0	0	25,296	88,943
2023	0	0	55,155	195,794	0	0	25,296	88,943

^aStorage required outside of existing reactor basins.

Table F-2.—Spent Fuel Storage Projections: Total Light-Water Reactors With Construction Permits

Year	Annual discharge		Cumulative inventory		Annual storage ^a requirements		Cumulative storage requirements	
	Tonnes	Assemblies	Tonnes	Assemblies	Tonnes	Assemblies	Tonnes	Assemblies
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	193	708	193	708	0	0	0	0
1985	515	1,809	708	2,517	0	0	0	0
1986	831	3,032	1,539	5,549	0	0	0	0
1987	936	3,365	2,475	8,914	0	0	0	0
1988	1,265	4,266	3,740	13,180	0	0	0	0
1989	1,256	4,066	4,996	17,246	46	252	46	252
1990	1,627	5,419	6,623	22,665	0	0	46	252
1991	1,517	5,177	8,140	27,842	74	311	120	570
1992	1,478	4,887	9,618	32,729	46	252	166	822
1993	1,508	5,269	11,126	37,998	64	150	230	972
1994	1,511	4,978	12,637	42,976	151	498	381	1,470
1995	1,549	5,256	14,186	48,232	253	827	635	2,297
1996	1,522	5,139	15,708	53,371	348	1,399	982	3,696
1997	1,525	5,169	17,233	58,540	343	1,214	1,325	4,910
1998	1,608	5,393	18,841	63,933	485	1,944	1,810	6,854
1999	1,502	4,920	20,343	68,853	501	1,669	2,311	8,723
2000	1,519	5,332	21,862	74,165	620	2,615	2,931	11,338
2001	1,478	4,765	23,340	78,950		2,214	3,515	13,552
2002	1,594	5,464	24,934	84,414		3,207	4,382	16,759
2003	1,581	5,473	26,515	89,887	933	3,472	5,316	20,231
2004	1,479	4,773	27,994	94,660	952	3,264	6,268	23,495
2005	1,569	5,395	29,563	100,055	1,159	4,104	7,427	27,599
2006	1,481	4,917	31,044	104,972	1,141	3,898	8,568	31,497
2007	1,608	5,384	36,252	110,356	1,339	4,539	9,907	36,036
2008	1,466	5,040	34,138	115,396	1,279	4,426	11,185	40,462
2009	1,504	5,144	35,642	120,540	1,345	4,709	12,530	45,171
2010	1,609	5,398	37,251	125,938	1,406	4,789	13,936	49,960
2011	1,501	4,916	38,752	130,854	1,368	4,626	15,303	54,586
2012	1,548	5,388	40,300	136,242	1,376	4,954	16,679	59,540
2013	1,638	6,119	42,138	142,361	1,366	4,575	18,046	64,115
2014	1,460	4,996	43,618	147,357	1,173	3,953	19,218	68,068
2015	1,663	6,218	45,281	153,575	1,301	4,401	20,519	72,469
2016	1,220	3,788	46,501	157,363	1,173	3,639	21,691	76,108
2017	1,367	4,519	47,866	161,682	1,311	4,397	23,002	80,505
2018	1,540	5,146	49,408	167,028	1,285	4,223	24,286	84,728
2019	1,308	3,988	50,716	171,016	1,096	3,516	25,384	88,244
2020	1,310	4,070	52,026	175,086	1,079	3,550	26,463	91,794
2021	1,017	3,320	53,043	178,406	991	3,262	27,454	95,056
2022	1,207	3,591	54,250	181,997	997	3,109	28,451	98,165
2023	1,638	6,333	55,888	188,330	961	3,426	29,412	101,591
2024	1,288	4,025	57,176	192,355	871	2,705	30,283	104,296
2025	1,027	3,299	58,203	195,654	1,027	3,299	31,310	107,595
2026	788	2,584	58,991	196,236	766	2,584	32,098	110,179
2027	669	2,014	59,660	200,252	669	2,014	32,767	112,193
2028	577	2,225	60,237	202,477	577	2,225	33,344	114,418
2029	104	193	60,341	202,670	104	193	33,448	114,611
2030	0	0	60,341	202,670	0	0	33,448	114,611

^astorage required outside of existing reactor basins.