



**INFORMATION SYSTEM ON OCCUPATIONAL EXPOSURE**

**General Distribution**

**July 2002**

**ISOE INFORMATION SHEET**

**North American Technical Center  
Information System on Occupational Exposure**

**United States Pressurized Water Reactor (PWR)  
2001 Occupational Dose Benchmarking Chart**

**NATC ISOE Information Sheet No. 02-4**

NATC ISOE Information Sheet No. 02-4 presents the U.S. Pressurized Water Reactor (PWR) occupational exposure results for FY 2001. Exposure categories per unit include refueling outage duration and dose, normal operations dose, and total dose.

For comparison, the 2001 worldwide collective dose per reactor unit is provided in the below table:

<b>Country/Region</b>	<b>Collective dose per Reactor (person-Sv)</b>
USA	0.909
IAEA	later
Europe	later
Japan	later

The FY 2001 U.S. PWR charts prepared by NATC include the following:

**Figure 1a: 2001 PWR Outage Duration**

**Figure 1b: 2001 PWR Outage Dose**

**Figure 1c: 2001 PWR Normal Dose**

**Figure 1d: 2001 PWR Total Dose**

**Figure 2a-d: 2001 PWR Outage Duration Quartiles**

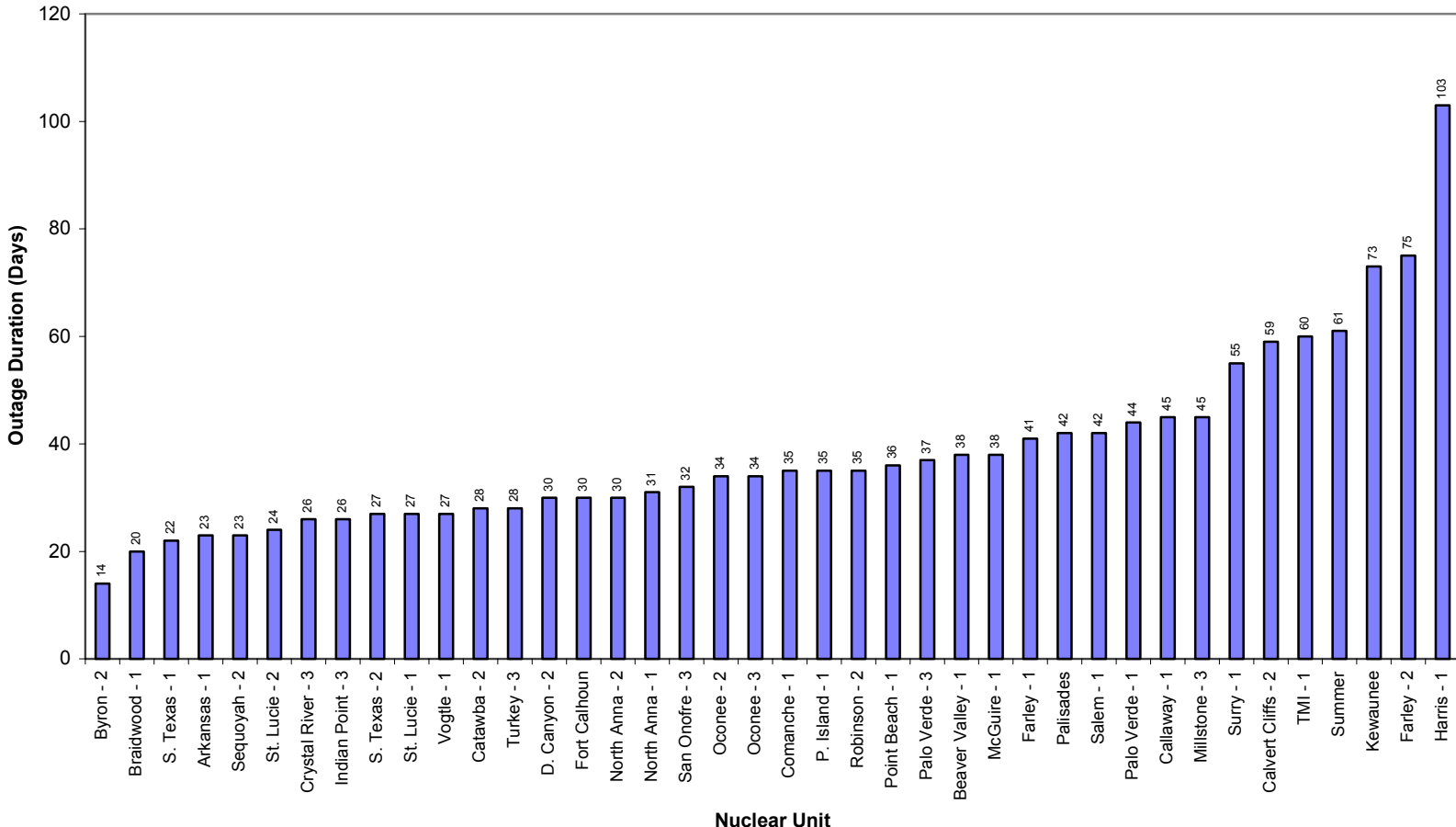
**Figure 3a-d: 2001 PWR Outage Dose Quartiles**

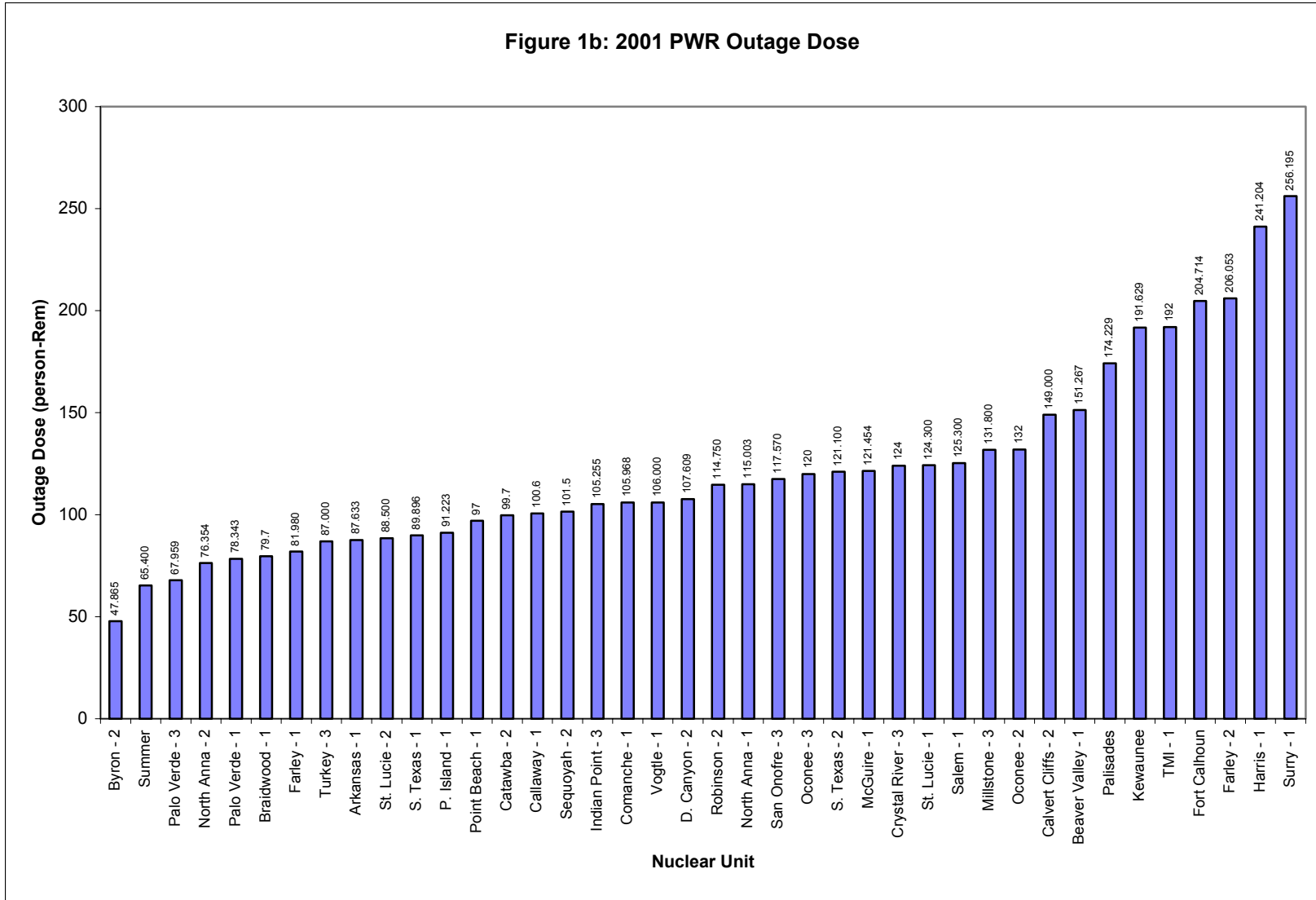
**Figure 4a-d: 2001 PWR Normal Dose Quartiles**

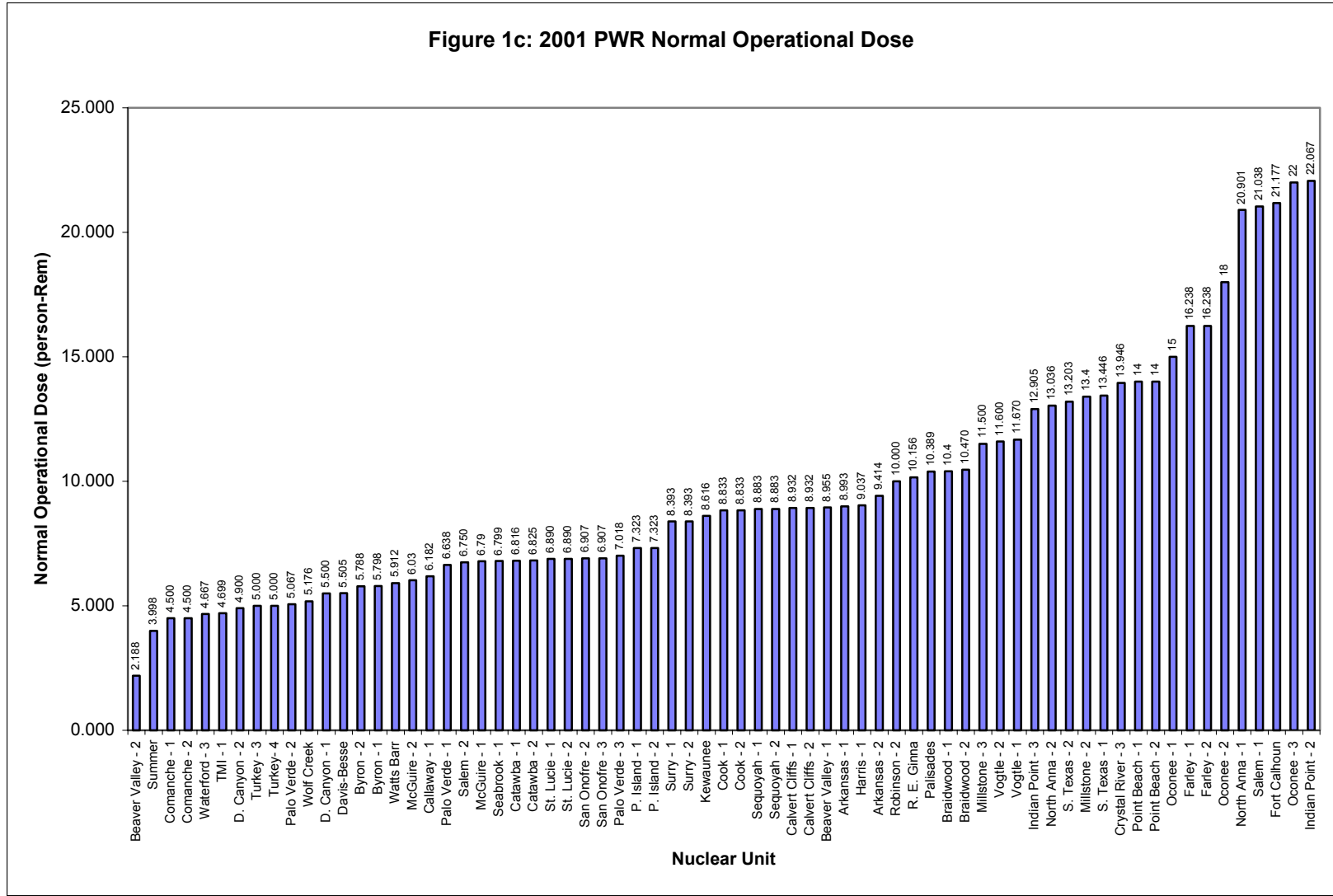
**Figure 5a-d: 2001 PWR Total Dose Quartiles**

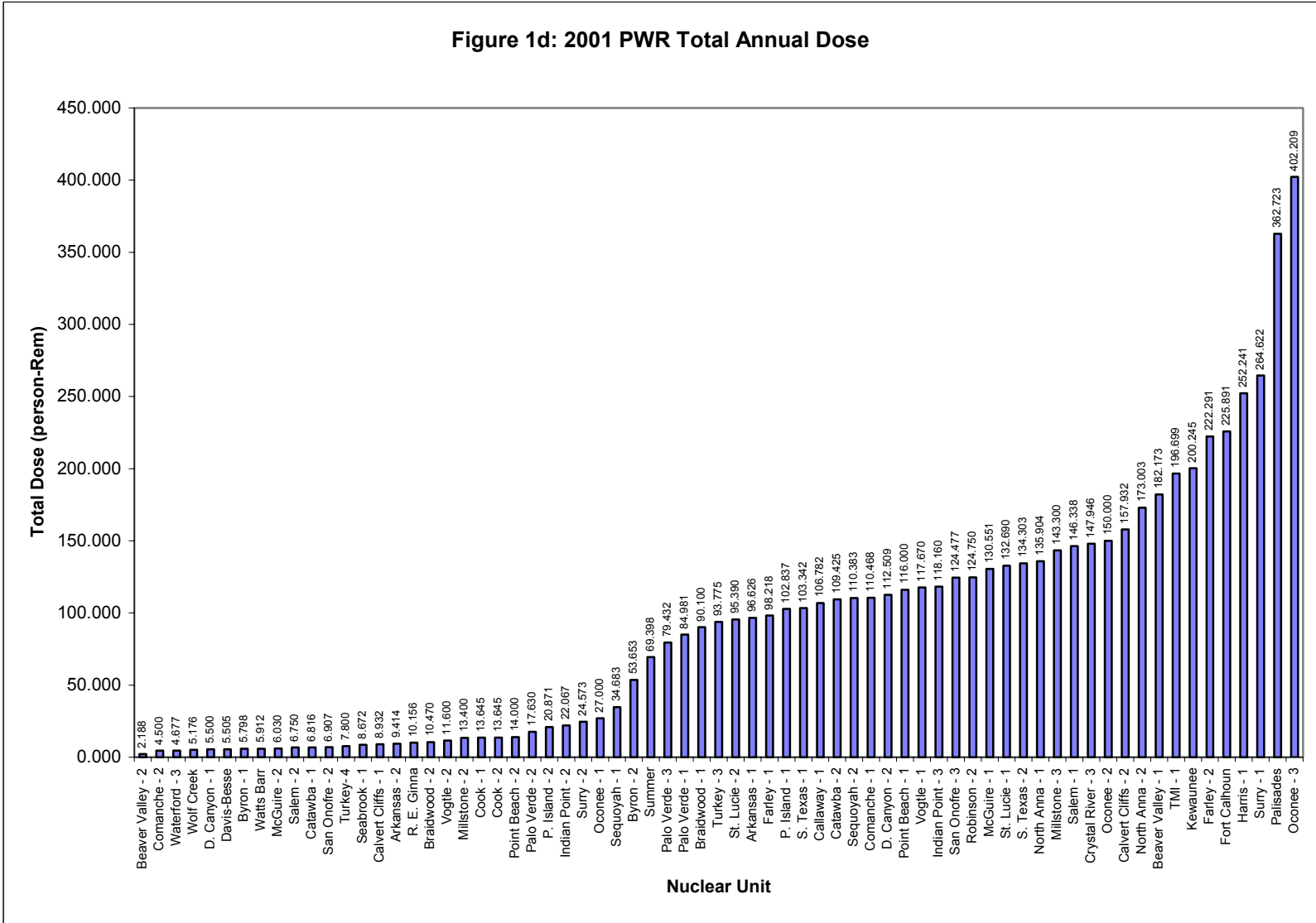
**Table 6: 2001 PWR Occupational Dose Data**

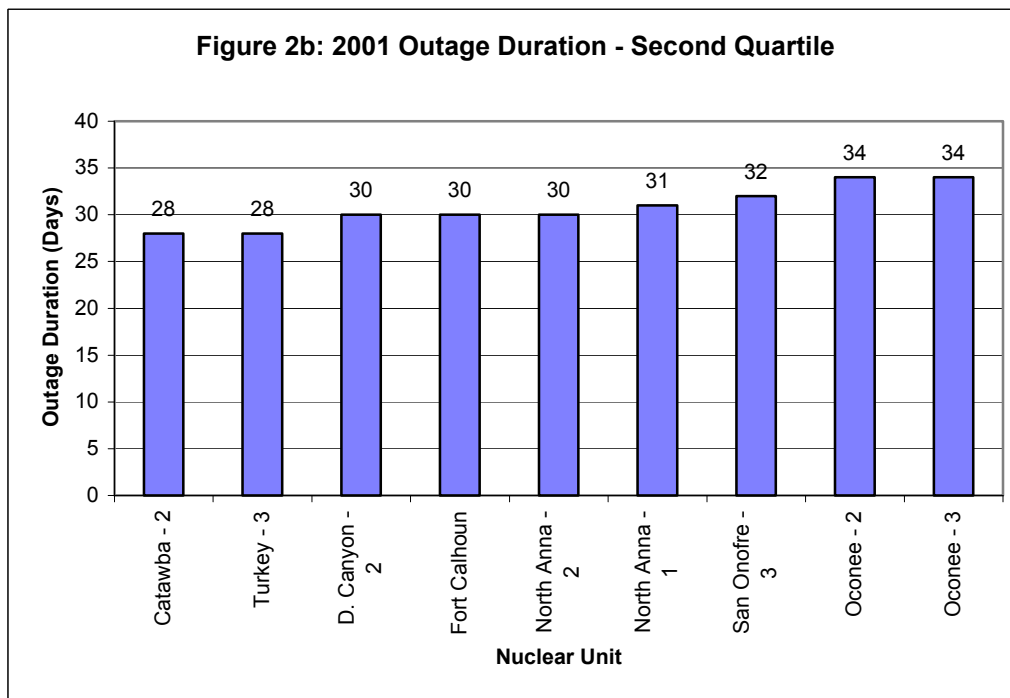
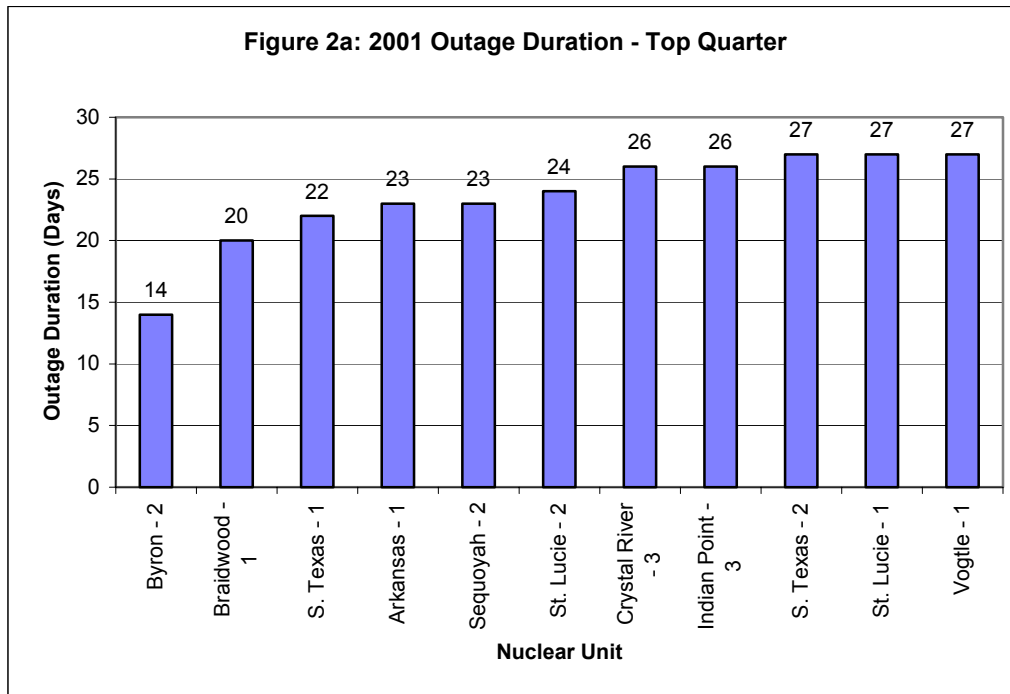
Figure 1a: 2001 PWR Outage Duration

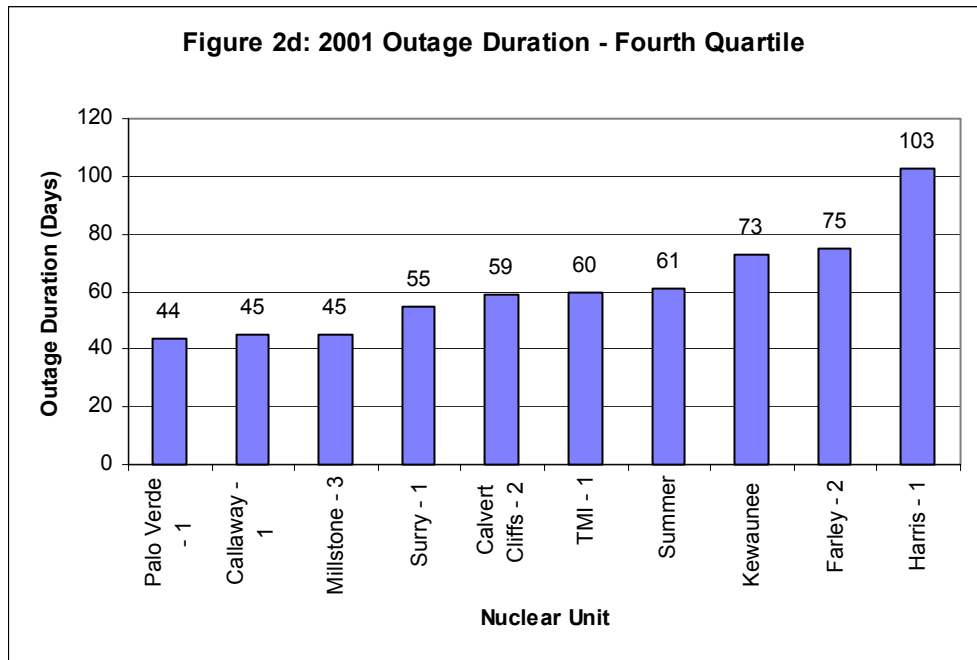
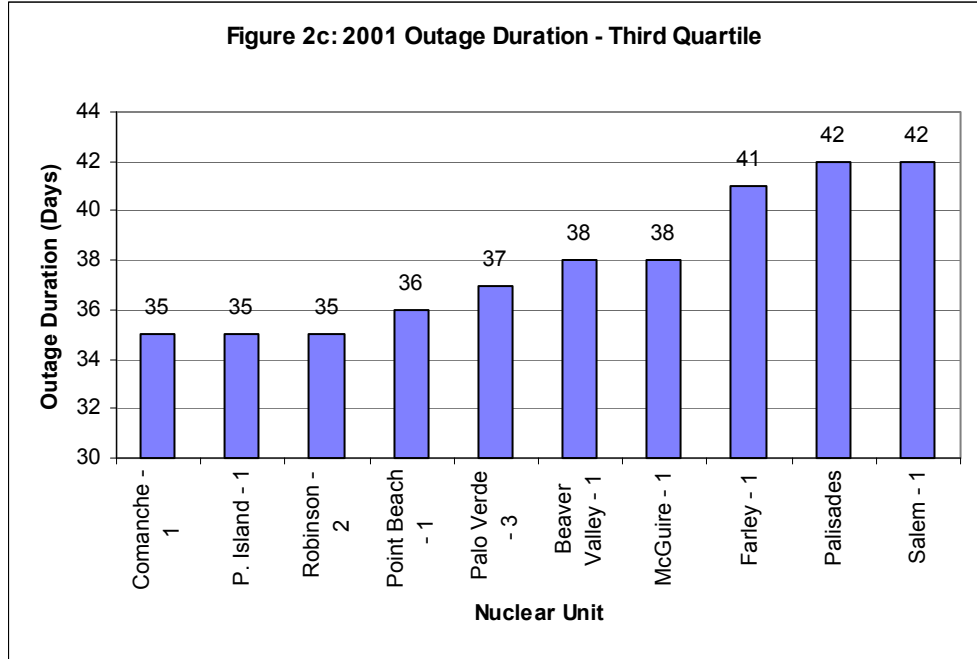


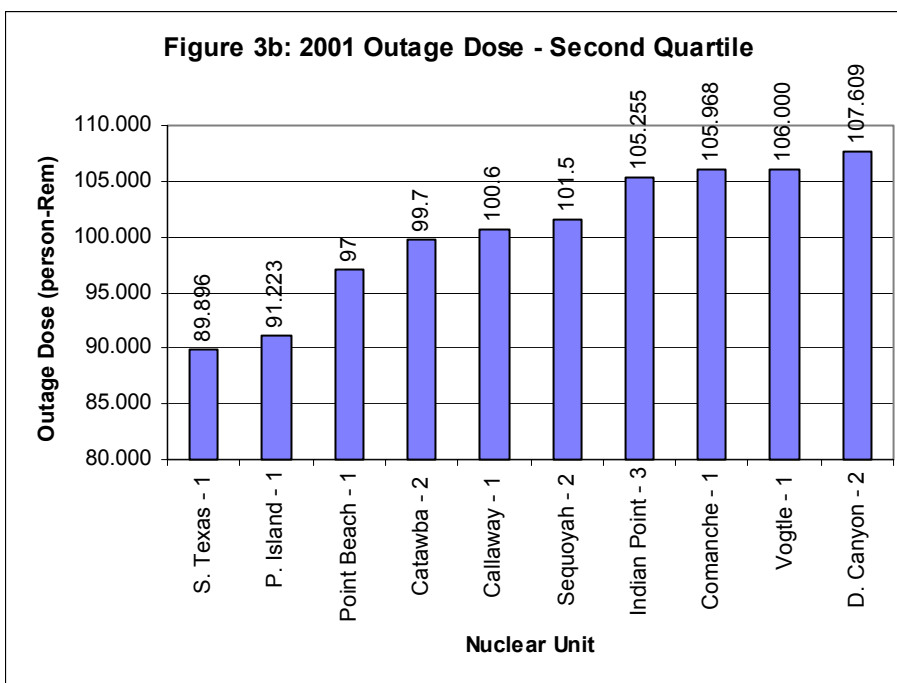
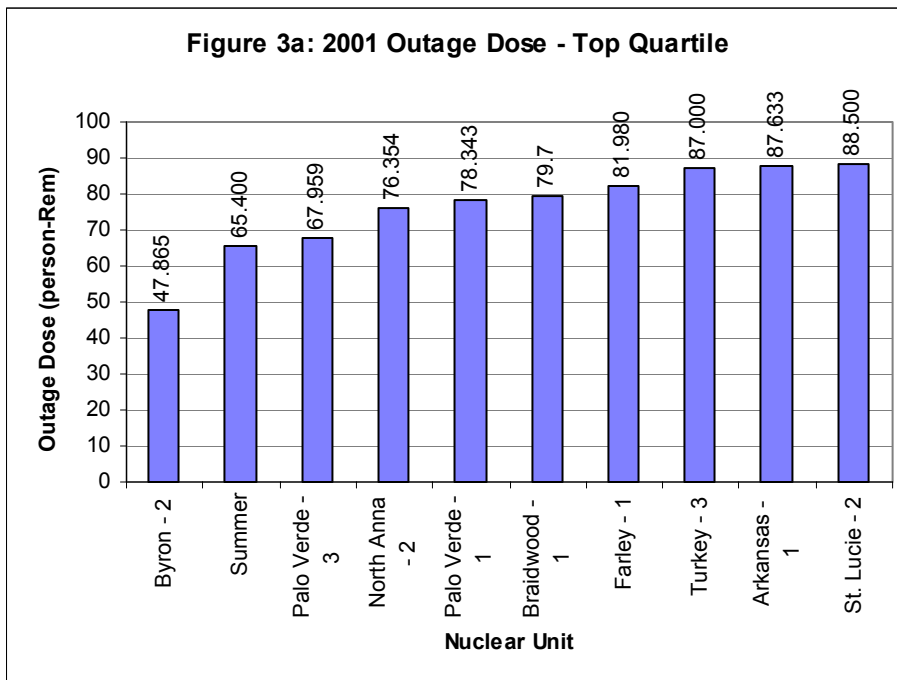




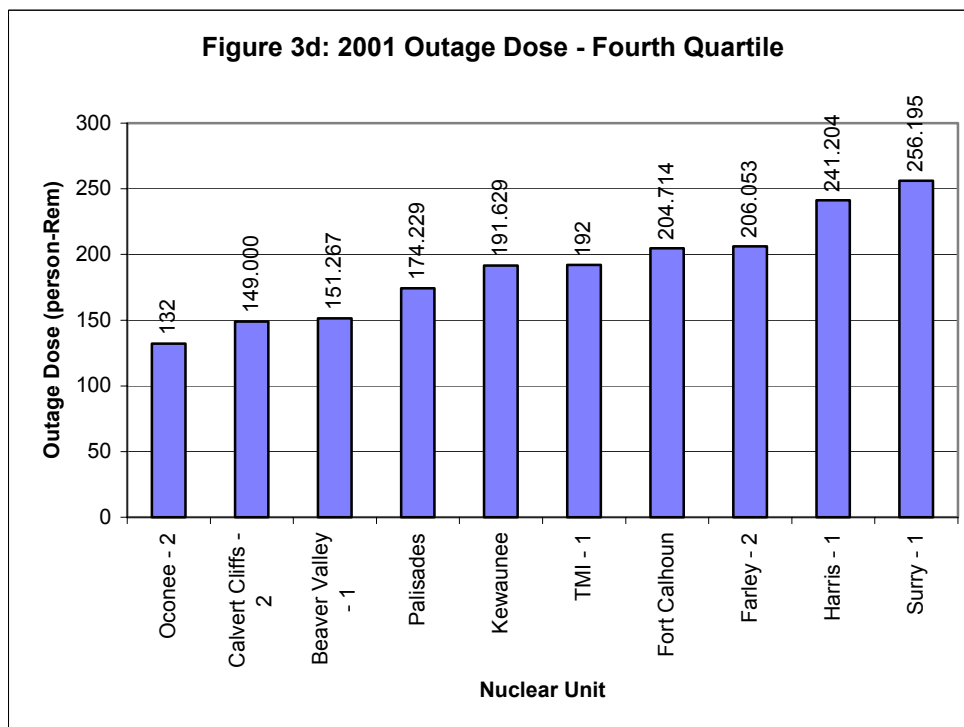
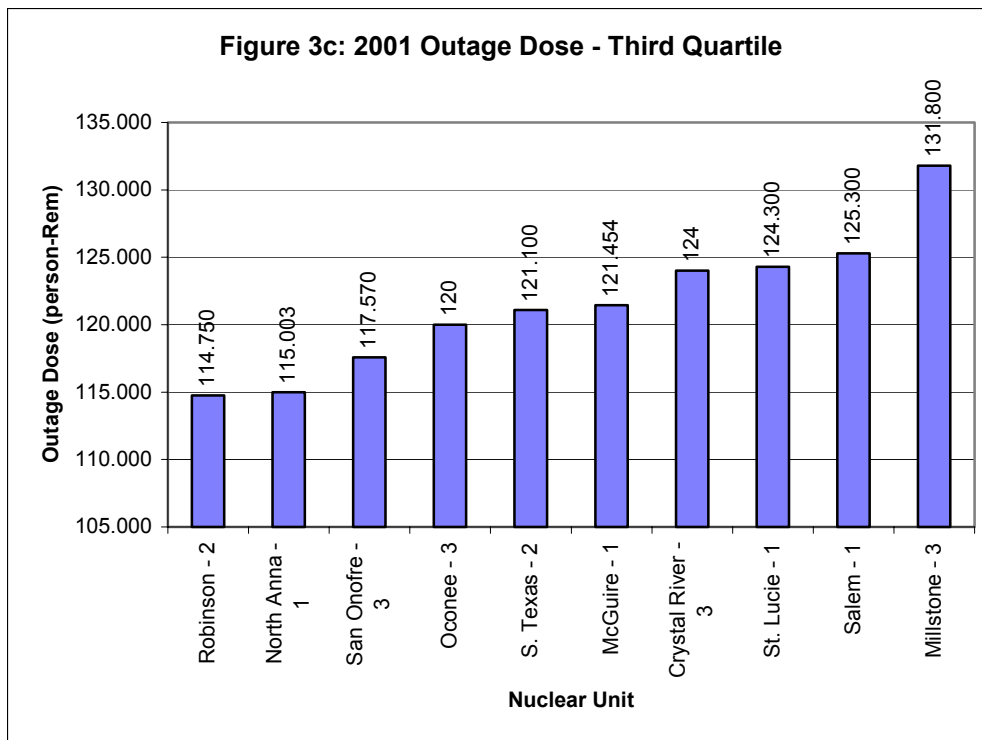


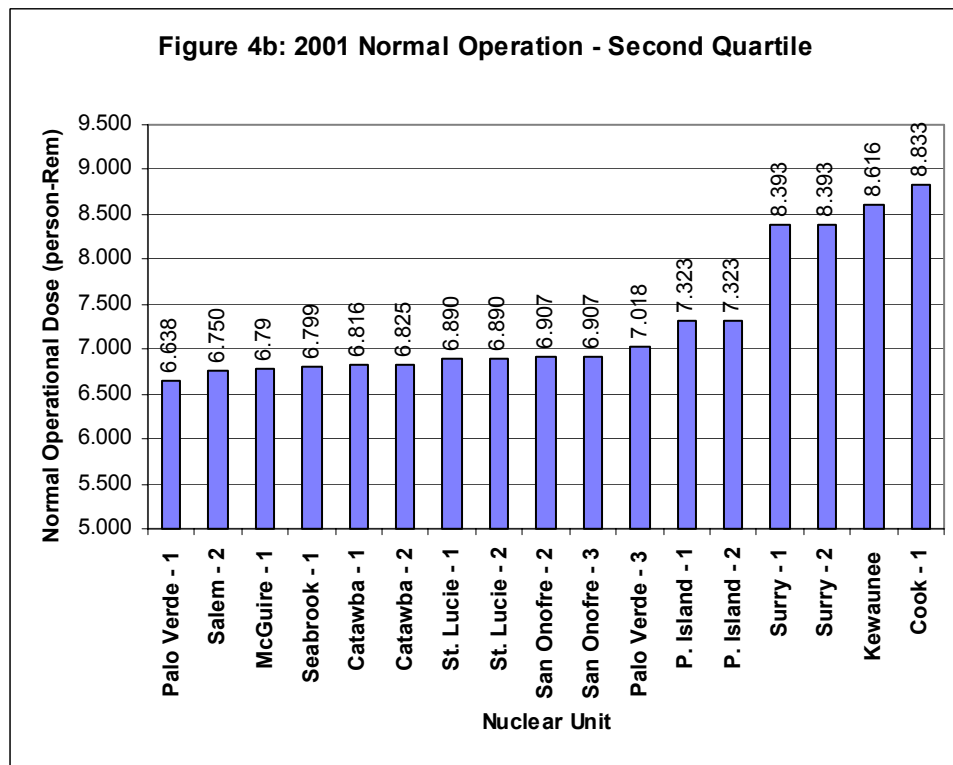
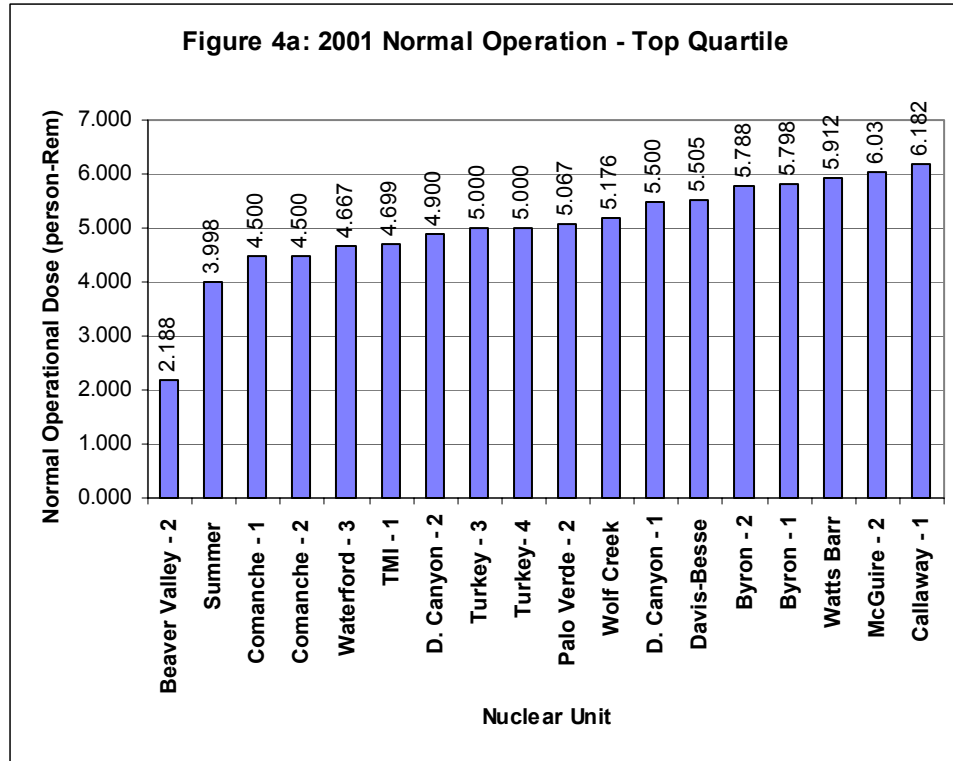


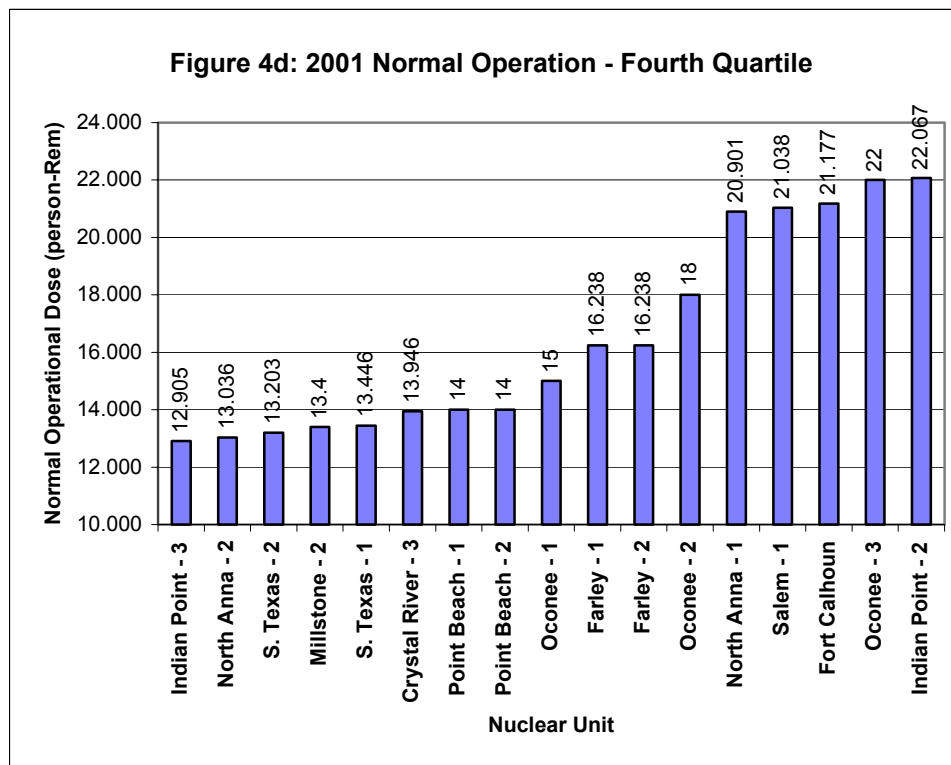
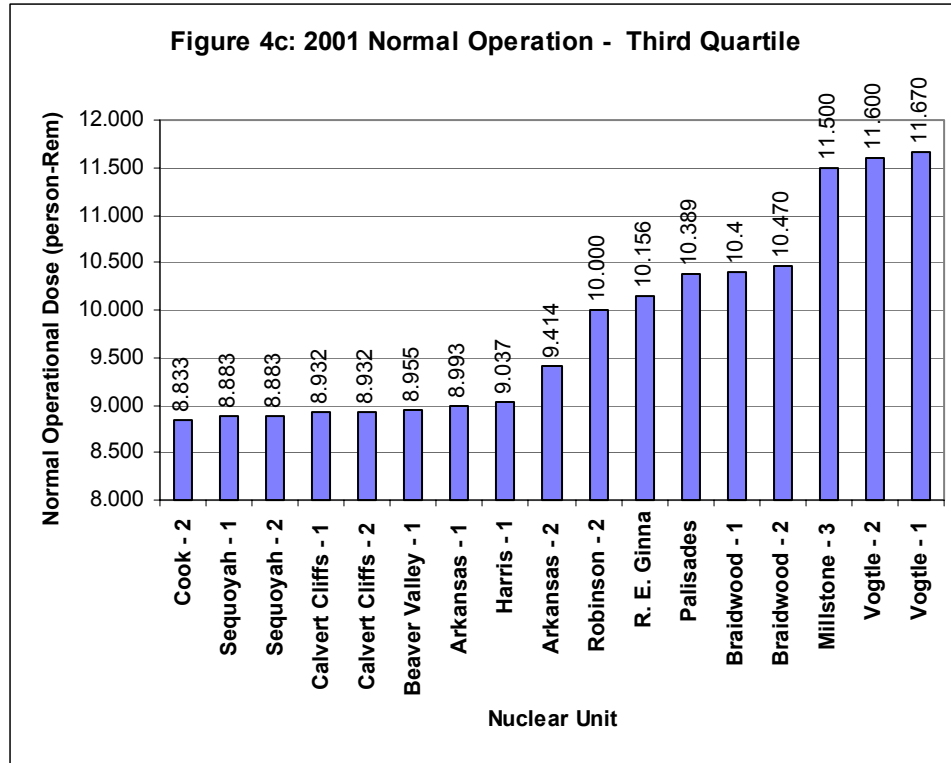


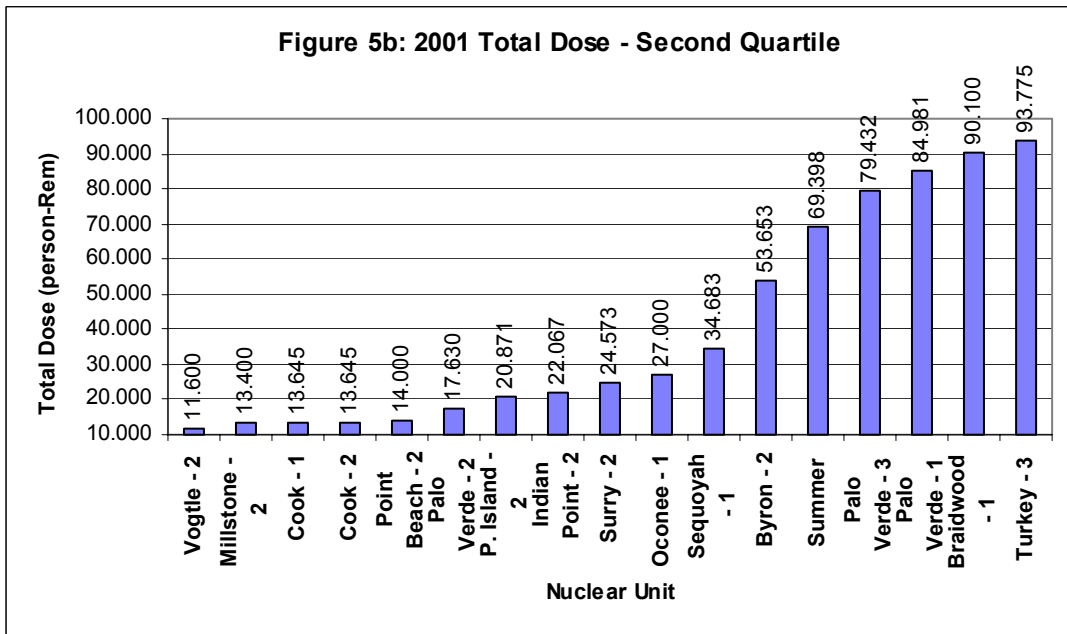
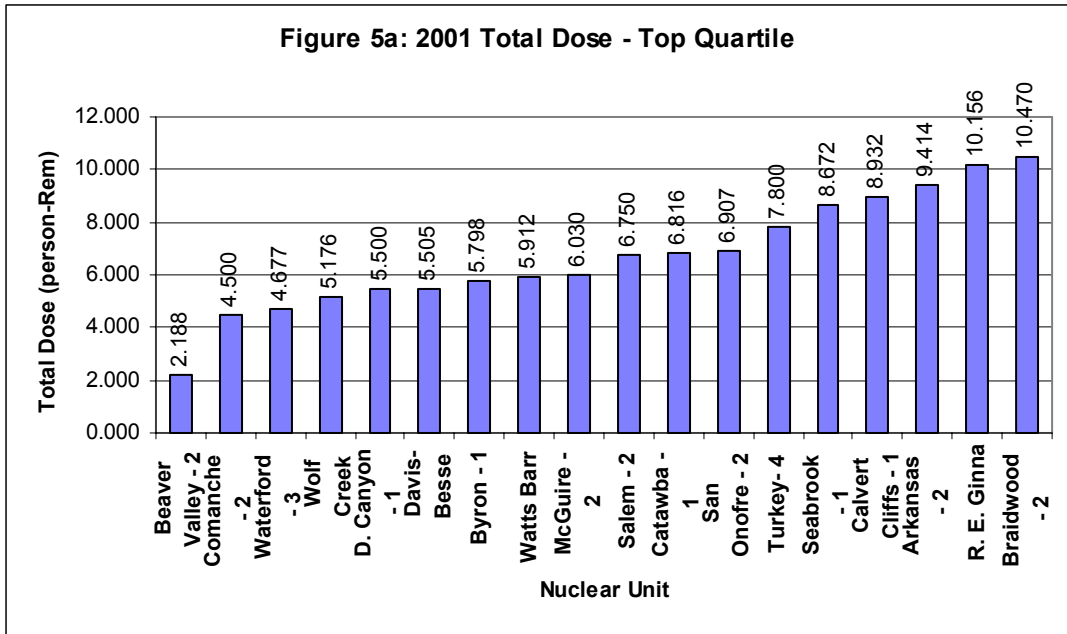


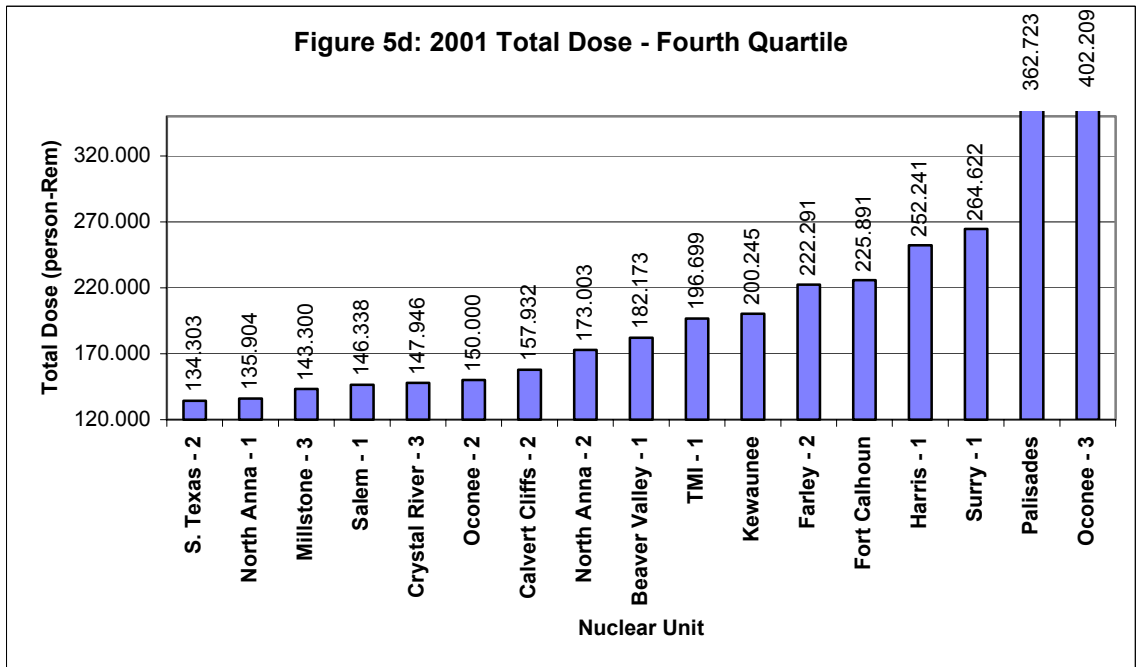
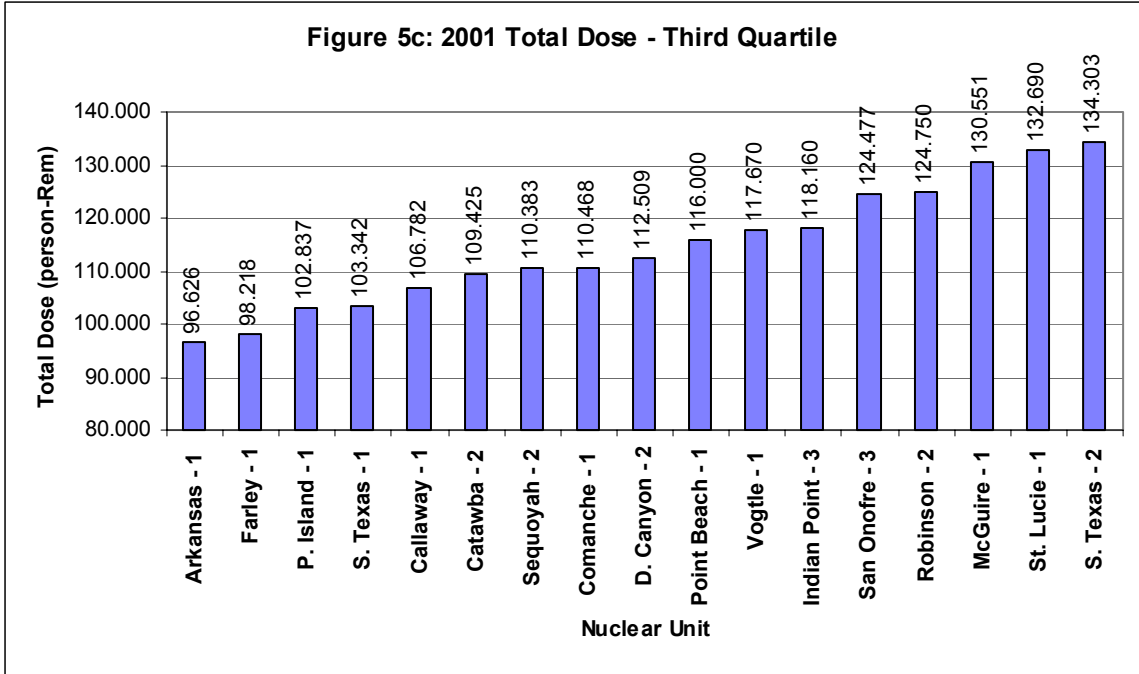












**Table 6: 2001PWR Occupational Dose Data**

Nuclear Unit	Outage Start Date	Outage End Date	Outage Duration	Outage Dose	Normal Operation	Other Shutdowns	Total Dose	Goals	Comments	TLD Values
Arkansas - 1	3/16/2001	4/19/2002	23	87.633	8.993		96.626			106.04
Arkansas - 2	N/A	N/A			9.414		9.414			
Beaver Valley - 1	9/1/2001	10/9/2001	38	151.267	8.955	21.951	182.173	184.000		184.361
Beaver Valley - 2	N/A	N/A			2.188		2.188			
Braidwood - 1	9/8/2001	9/28/2001	20	79.7	10.4		90.100	120.000		100.57
Braidwood - 2	N/A	N/A			10.470		10.470			
Byron - 1	N/A	N/A			5.798		5.798			59.451
Byron - 2	4/6/2001	4/20/2001	14	47.865	5.788		53.653			
Callaway - 1	4/7/2001	5/22/2001	45	100.6	6.182		106.782	165.000		106.782
Calvert Cliffs - 1	N/A	N/A			8.932		8.932	126.000		
Calvert Cliffs - 2	3/16/2001	5/14/2001	59	149.000	8.932		157.932			166.864
Catawba - 1	N/A	N/A			6.816		6.816	9.000		
Catawba - 2	9/13/2001	10/11/2001	28	99.7	6.825	2.9	109.425	97.000		116.241
Comanche - 1	3/24/2001	4/28/2001	35	105.968	4.500		110.468	120.000		
Comanche - 2	N/A	N/A			4.500		4.500			114.968
Cook - 1	N/A	N/A			8.833	4.812	13.645	7.250		27.29
Cook - 2	N/A	N/A			8.833	4.812	13.645			
Crystal River - 3	9/29/2001		26	124	13.946	10.000	147.946			147.946
D. Canyon - 1	N/A	N/A			5.500		5.500			117.804
D. Canyon - 2	4/28/2001	5/28/2001	30	107.609	4.900		112.509			
Davis-Besse	N/A	N/A			5.505		5.505			5.505
Farley - 1	10/6/2001	11/16/2001	41	81.980	16.238		98.218			320.509
Farley - 2	4/1/2001	6/15/2001	75	206.053	16.238		222.291		SG Dose	
Fort Calhoun	3/17/2001	4/16/2001	30	204.714	21.177		225.891	145.000		225.891
Haddam Neck										
Harris - 1	9/22/2001	1/3/2002	103	241.204	9.037	2.000	252.241		SG Dose-135	252.241
Indian Point - 2	N/A	N/A			22.067		22.067			22.067
Indian Point - 3	4/28/2001	5/24/2001	26	105.255	12.905		118.160	120.000		118.16
Kewaunee	9/22/2001	12/4/2001	73	191.629	8.616		200.245		SG Replace.	200.245
Maine Yankee	N/A	N/A				68.121	68.121			68.121
McGuire - 1	3/15/2001	4/23/2001	38	121.454	6.79	2.307	130.551			136.581
McGuire - 2	N/A	N/A			6.03		6.030			
Millstone - 2	N/A	N/A			13.4		13.400		U1=43.5pr	189.202
Millstone - 3	2/3/2001	3/20/2001	45	131.800	11.500		143.300			
North Anna - 1	9/9/2001	10/10/2001	31	115.003	20.901		135.904	Head ins.49d		308.907
North Anna - 2	3/11/2001	4/10/2001	30	76.354	13.036	83.613	173.003	152.000		
Oconee - 1	N/A	N/A			15	12.000	27.000	275.000	Head 55d	
Oconee - 2	4/15/2001	5/19/2001	34	132	18		150.000			
Oconee - 3	11/20/2001	12/24/2001	34	120	22	260.209	402.209		SG 2003	579.209
P. Island - 1	1/20/2001	2/24/2001	35	91.223	7.323	4.291	102.837		SG emergent	
P. Island - 2	4/28/2001	6/7/2001			7.323	13.548	20.871		Turbine	124.708
Palisades	6/20/2001	8/1/2001	42	174.229	10.389	178.105	362.723	Head ins.195d		362.723
Palo Verde - 1	3/31/2001	5/14/2001	44	78.343	6.638		84.981	160.000		182.043
Palo Verde - 2	N/A	N/A			5.067	12.563	17.630			

Palo Verde - 3	9/29/2001	11/5/2001	37	67.959	7.018	4.455	79.432			
Point Beach - 1	4/1/2001	5/7/2001	36	97	14	5.000	116.000	110.000		131.667
Point Beach - 2	N/A	N/A			14		14.000			
R. E. Ginna	N/A	N/A			10.156		10.156			10.156
Robinson - 2	4/7/2001	5/12/2001	35	114.750	10.000		124.750			124.75
S. Texas - 1	10/3/2001	10/25/2001	22	89.896	13.446		103.342			237.645
S. Texas - 2	3/3/2001	3/30/2001	27	121.100	13.203		134.303			
Salem - 1	4/7/2001	5/19/2001	42	125.300	21.038		146.338			
Salem - 2	N/A	N/A			6.750		6.750			153.088
San Onofre - 2	N/A	N/A			6.907		6.907			189.169
San Onofre - 3	1/2/2001	2/3/2001	32	117.570	6.907		124.477			131.384
Seabrook - 1	N/A	N/A			6.799	1.873	8.672	FO=42d		8.672
Sequoyah - 1	N/A	N/A			8.883	25.800	34.683			145.066
Sequoyah - 2	10/21/2001	11/20/2001	23	101.5	8.883		110.383			
St. Lucie - 1	3/26/2001	4/22/2001	27	124.300	6.890	1.500	132.690			228.071
St. Lucie - 2	11/19/2001	12/13/2001	24	88.500	6.890		95.390			
Summer	1/1/2001	3/3/2001	61	65.400	3.998		69.398			69.398
Surry - 1	10/14/2001	12/8/2001	55	256.195	8.393	0.034	264.622			
Surry - 2	N/A	N/A			8.393	16.180	24.573			328.65
TMI - 1	10/6/2001	12/5/2001	60	192	4.699		196.699	125.000		196.699
Turkey - 3	9/29/2001	10/27/2001	28	87.000	5.000	1.775	93.775			101.575
Turkey- 4	N/A	N/A			5.000	2.800	7.800			
Vogtle - 1	3/11/2001	4/6/2001	27	106.000	11.670		117.670	138.000		129.27
Vogtle - 2	N/A	N/A			11.600		11.600			
Waterford - 3	N/A	N/A			4.667	0.010	4.677			4.677
Watts Barr	N/A	N/A			5.912		5.912			5.912
Wolf Creek	N/A	N/A			5.176		5.176			5.176
Zion - 1			0			0.137	0.137			0.274
Zion - 2			0			0.137	0.137			