



INFORMATION SYSTEM ON OCCUPATIONAL EXPOSURE

General Distribution

December 2001

ISOE INFORMATION SHEET

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

**United States Pressurized Water Reactor (PWR)
2000 Occupational Dose Benchmarking Chart**

NATC ISOE Information Sheet No. 01-4

NATC ISOE Information Sheet No. 01-4 presents the U.S. Pressurized Water Reactor (PWR) occupational exposure results for FY 2000. Exposure categories per unit include refueling outage duration and dose, normal operations dose, and total dose.

For comparison, the 2000 worldwide collective dose per reactor unit is provided in the below table:

Country/Region	Collective dose per Reactor (person-Sv)
USA	0.96
IAEA	1.31
Europe	0.91
Japan	1.03

The FY 2000 U.S. PWR charts prepared by NATC include the following:

Figure 1a: 2000 PWR Outage Duration

Figure 1b: 2000 PWR Outage Dose

Figure 1c: 2000 PWR Normal Dose

Figure 1d: 2000 PWR Total Dose

Figure 2a-d: 2000 PWR Outage Duration Quartiles

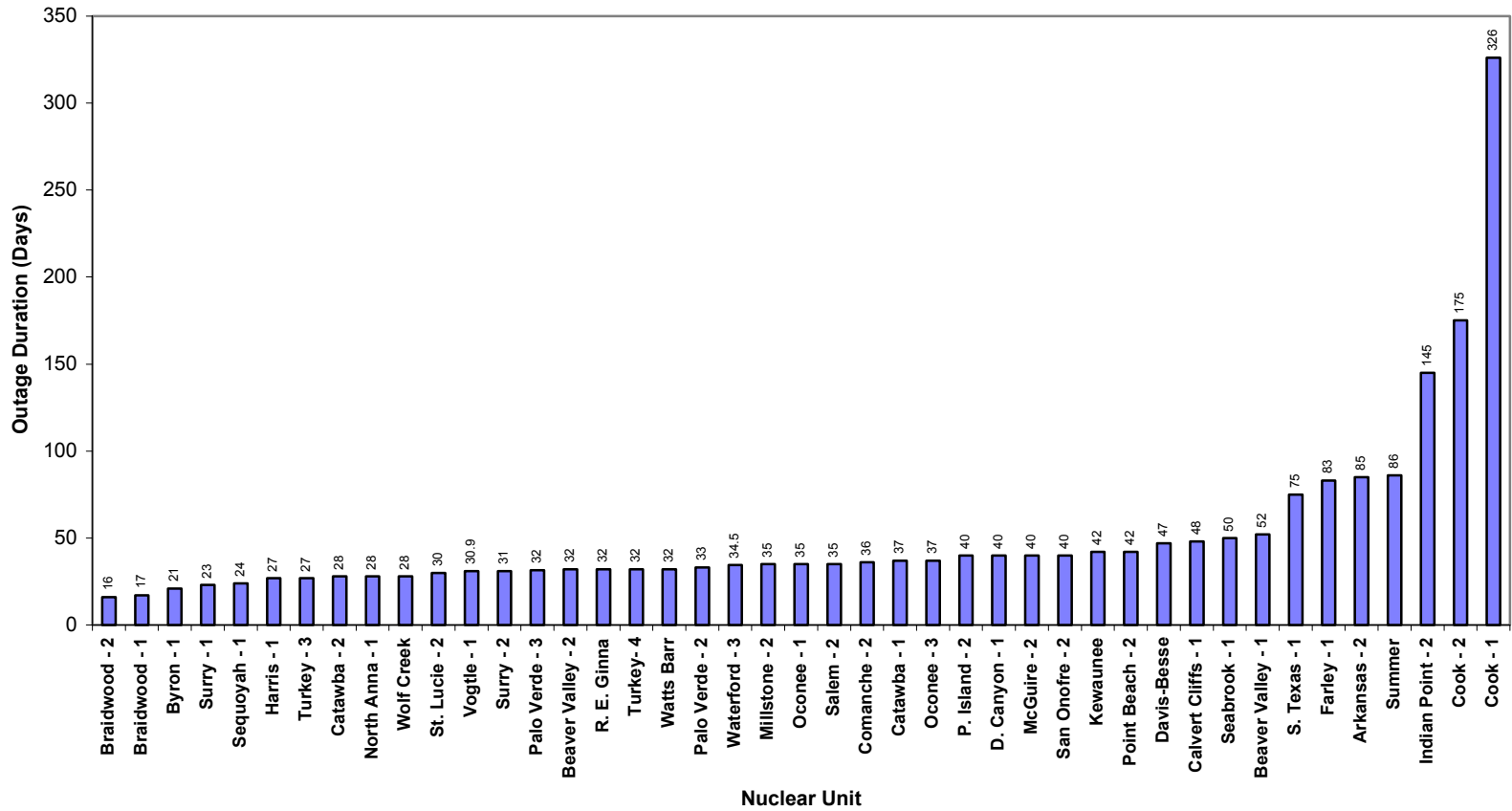
Figure 3a-d: 2000 PWR Outage Dose Quartiles

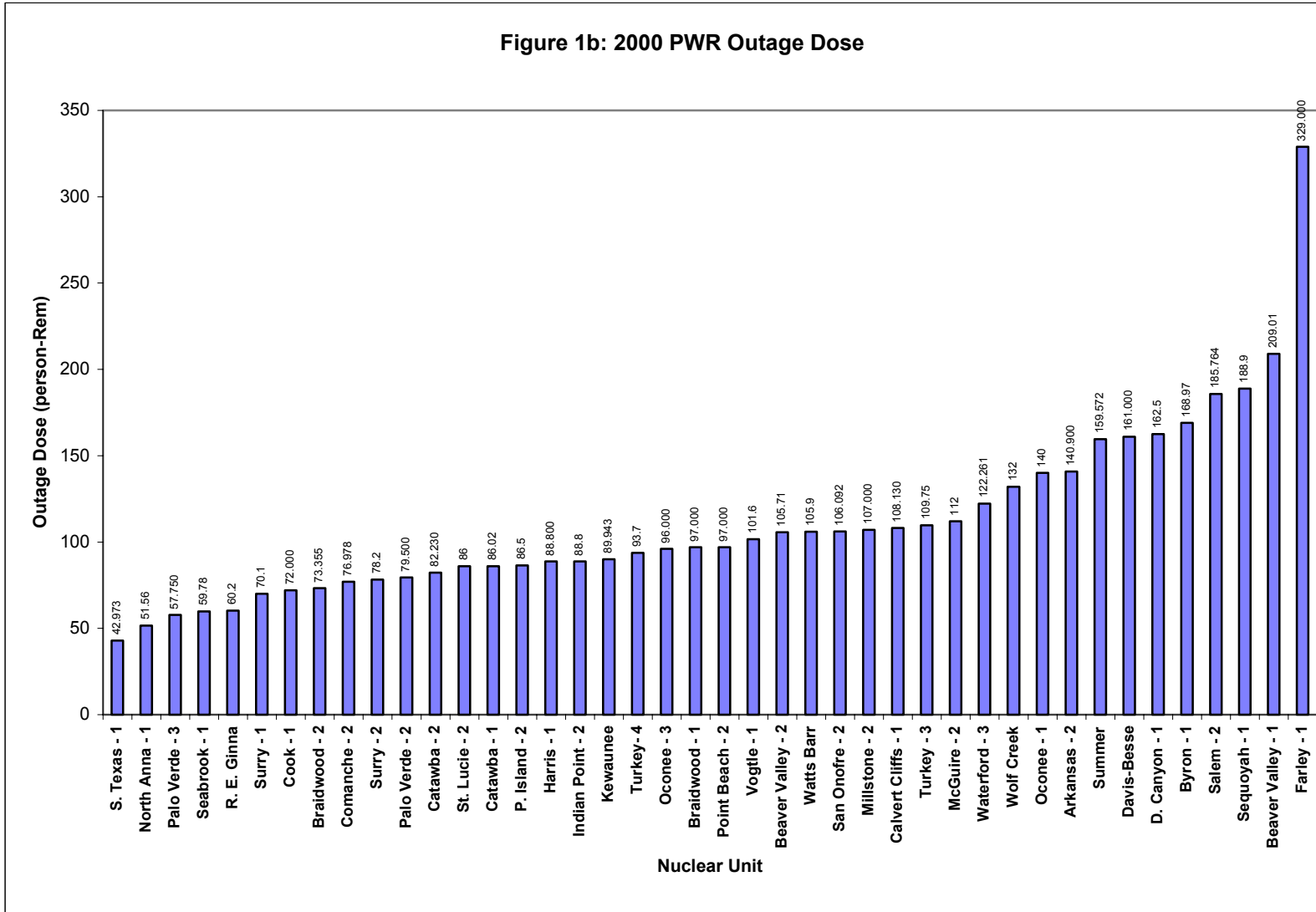
Figure 4a-d: 2000 PWR Normal Dose Quartiles

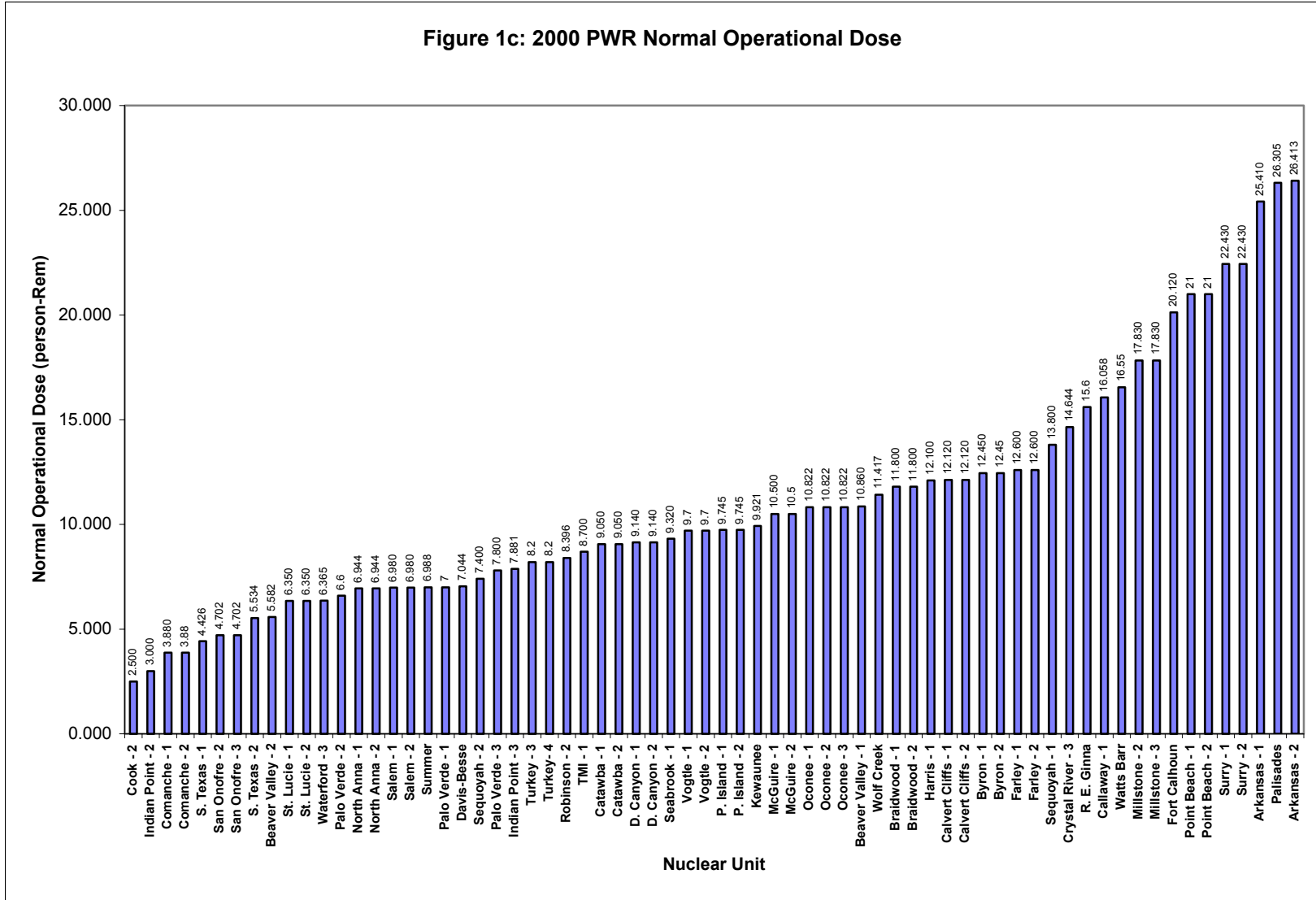
Figure 5a-d: 2000 PWR Total Dose Quartiles

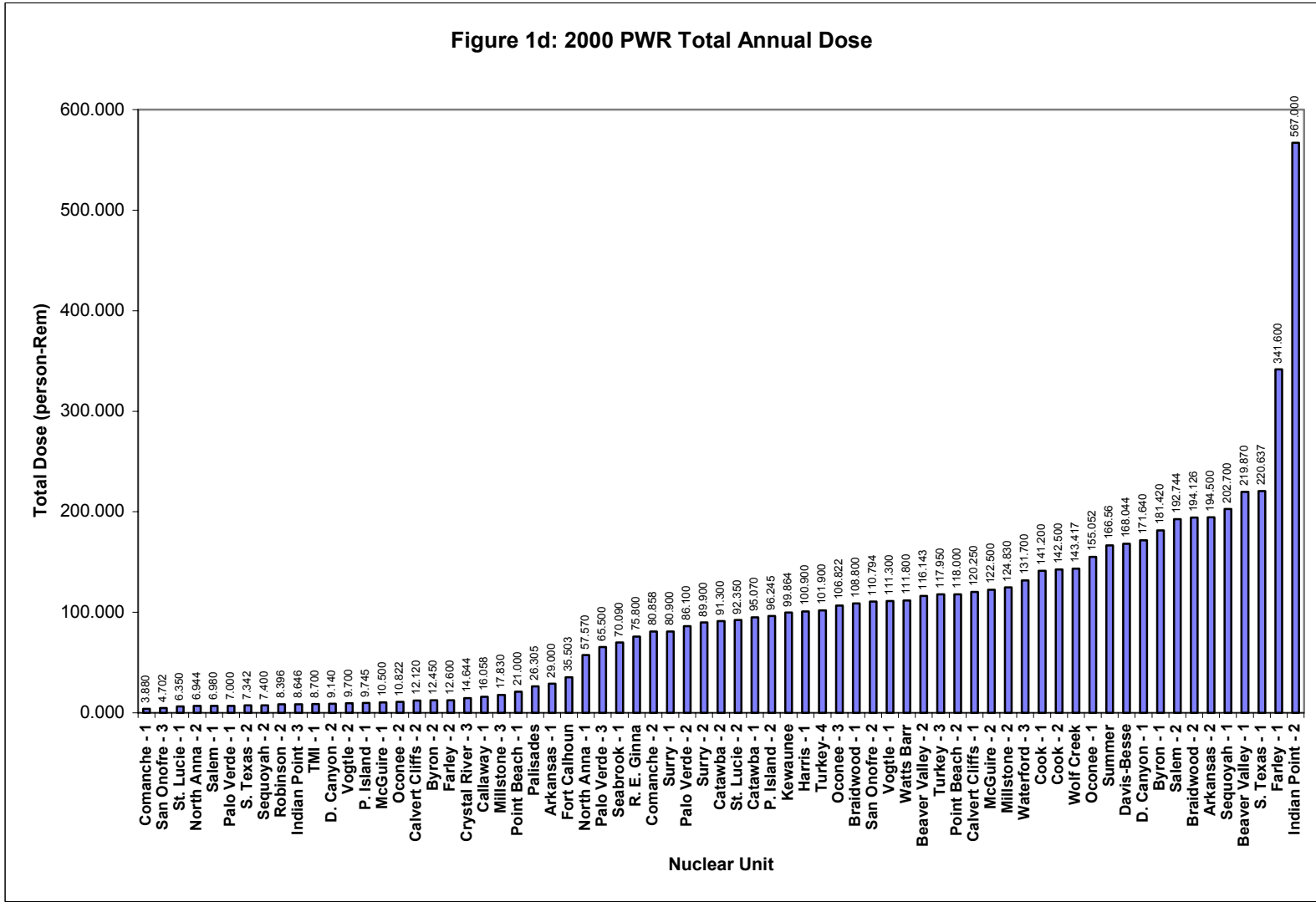
Table 6: 2000 PWR Occupational Dose Data

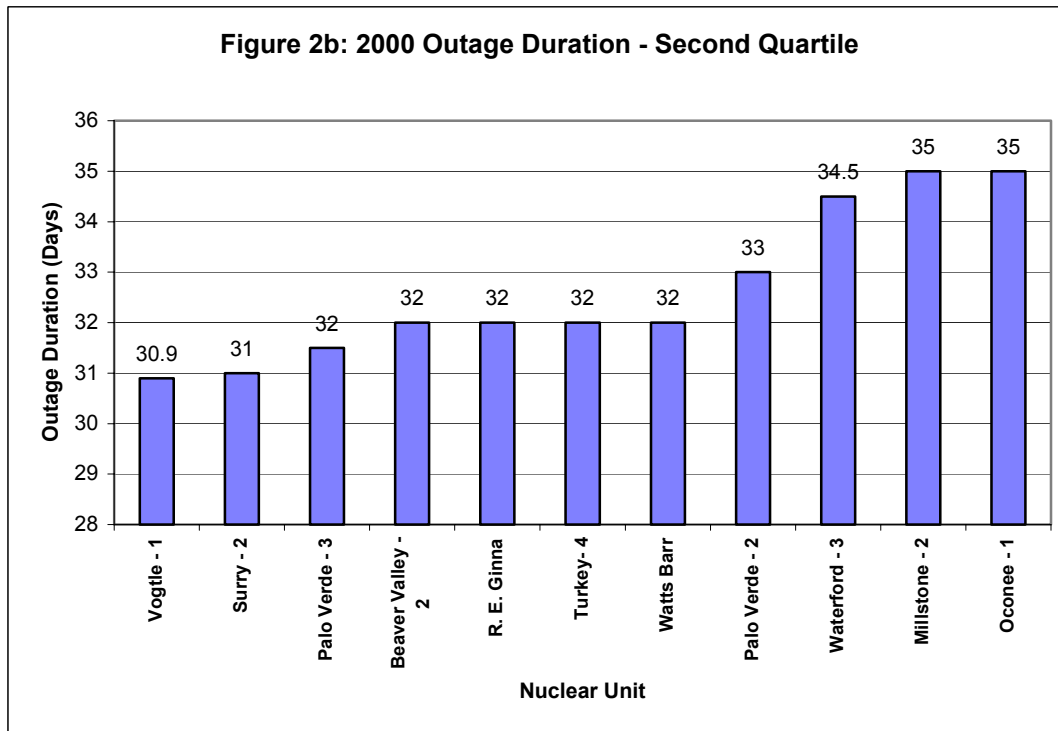
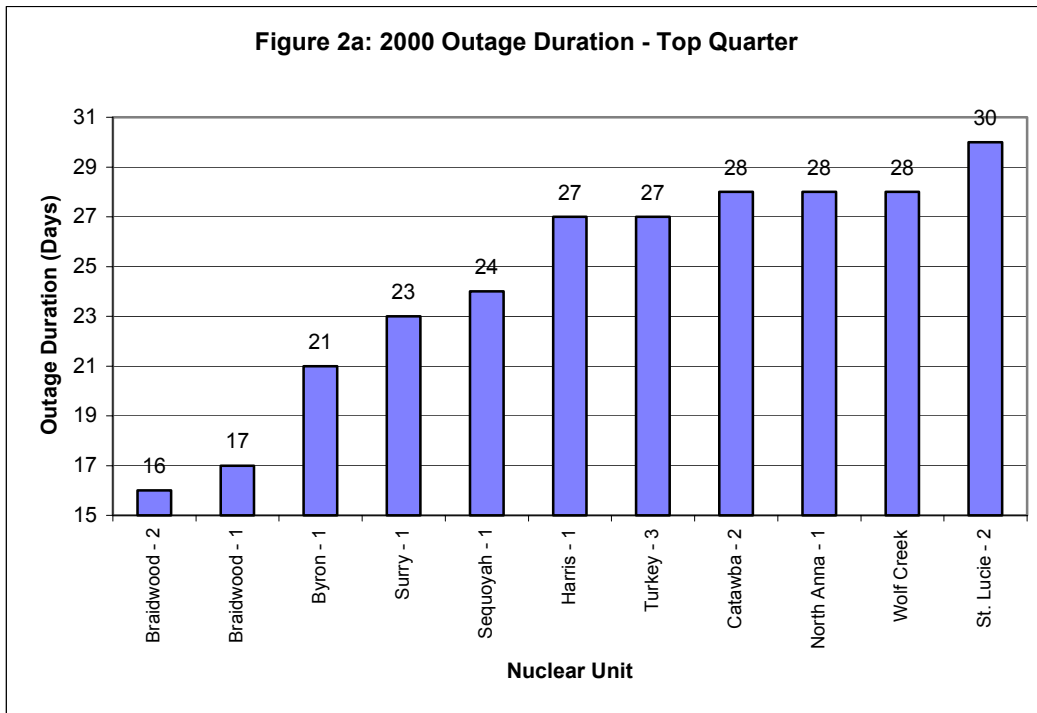
Figure 1a: 2000 PWR Outage Duration

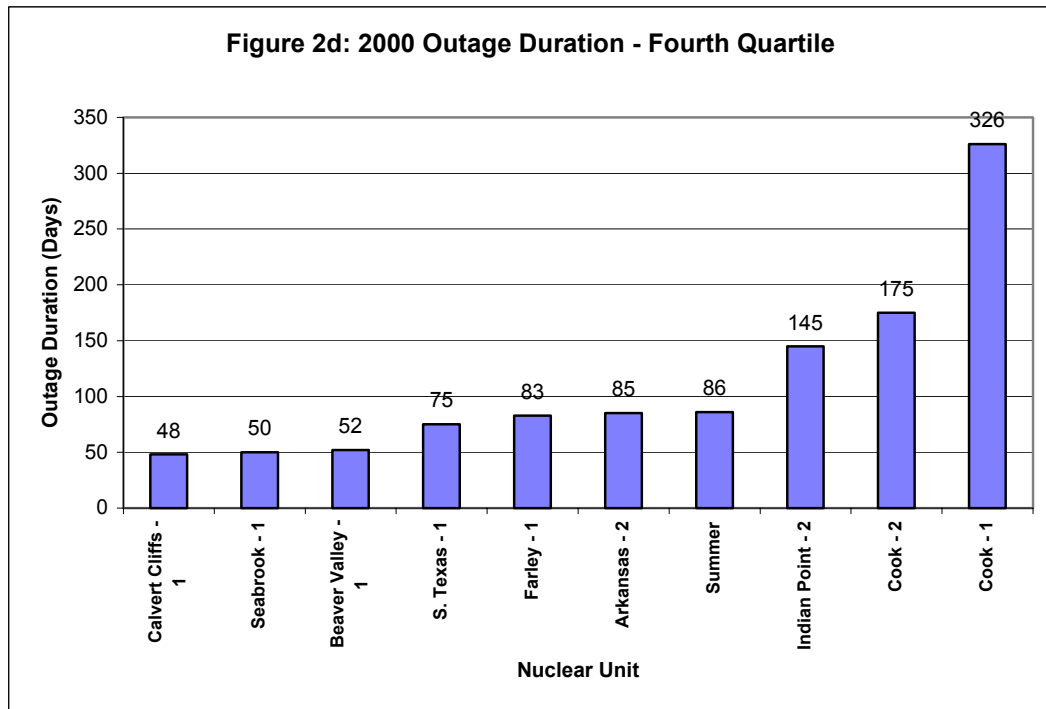
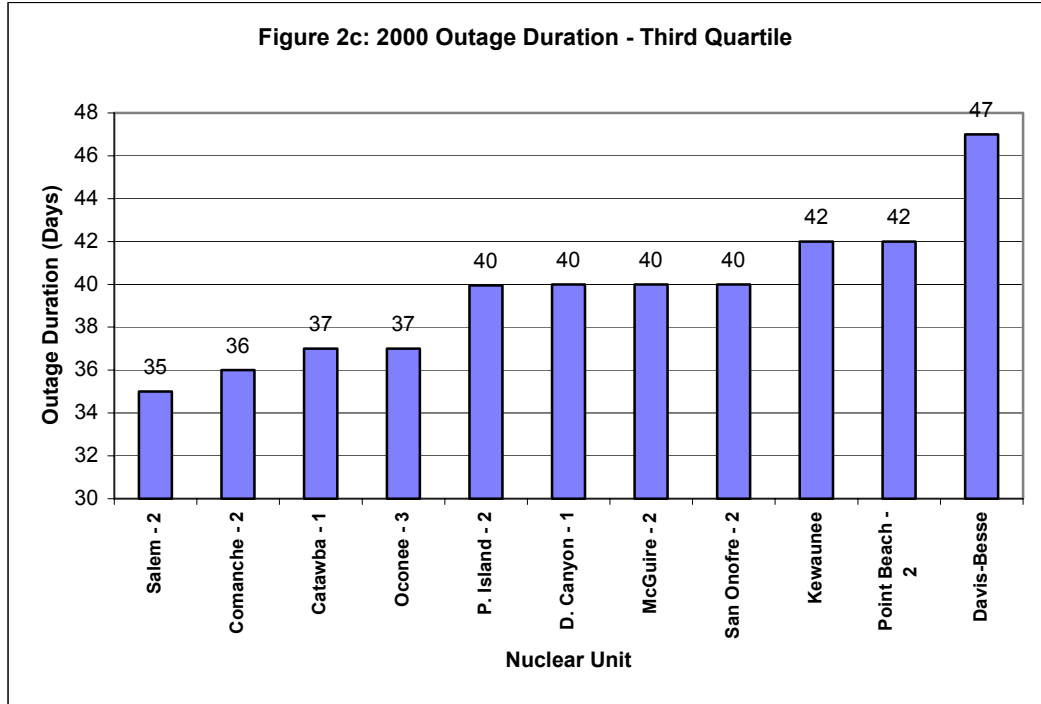


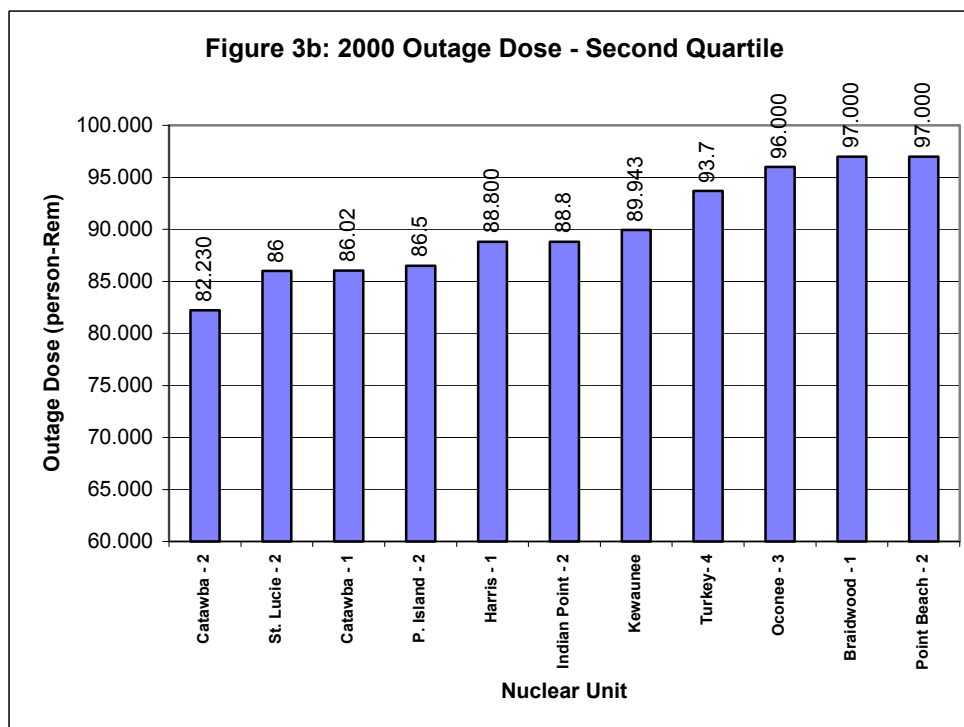
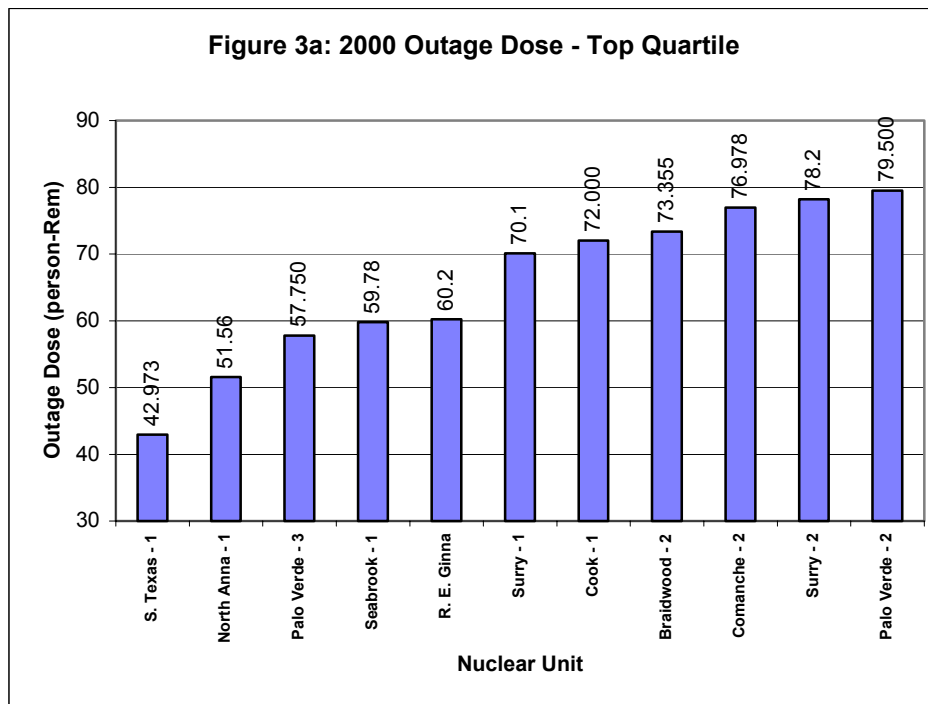


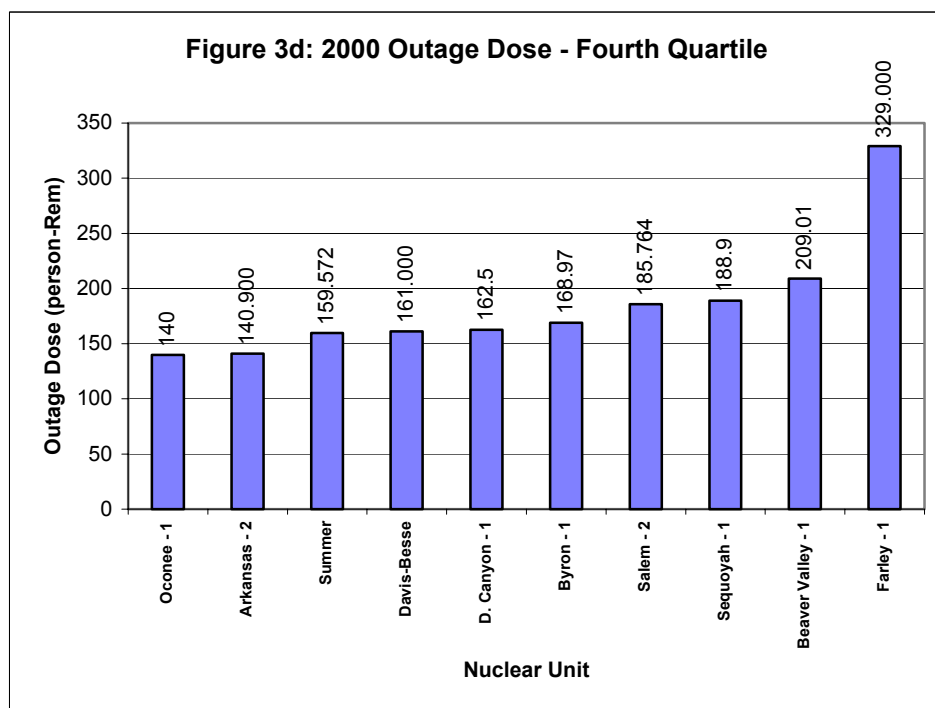
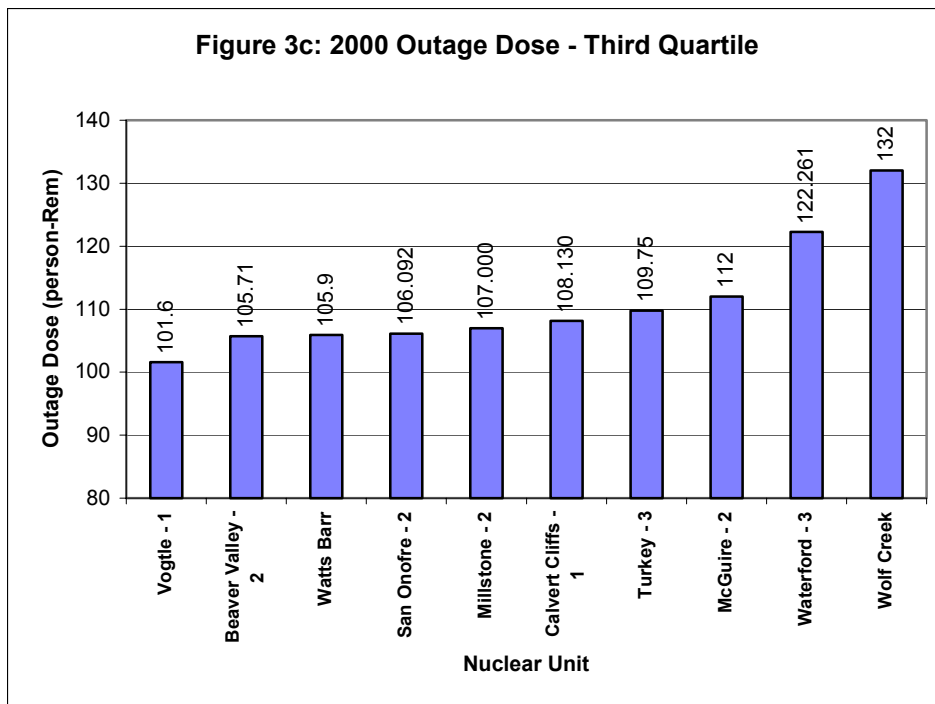


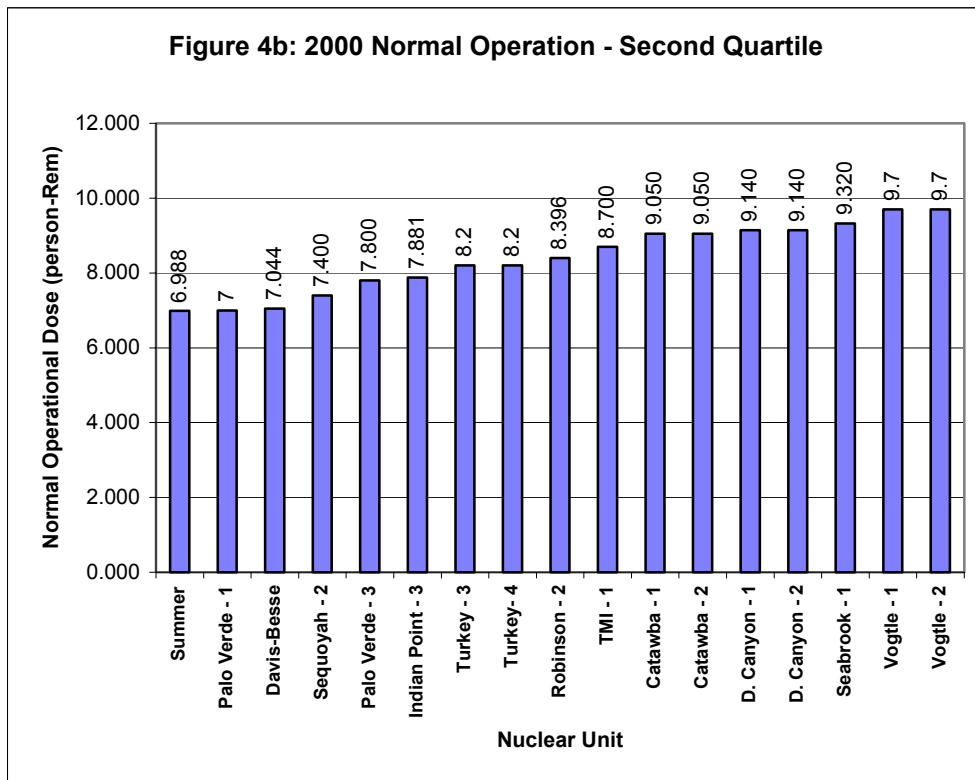
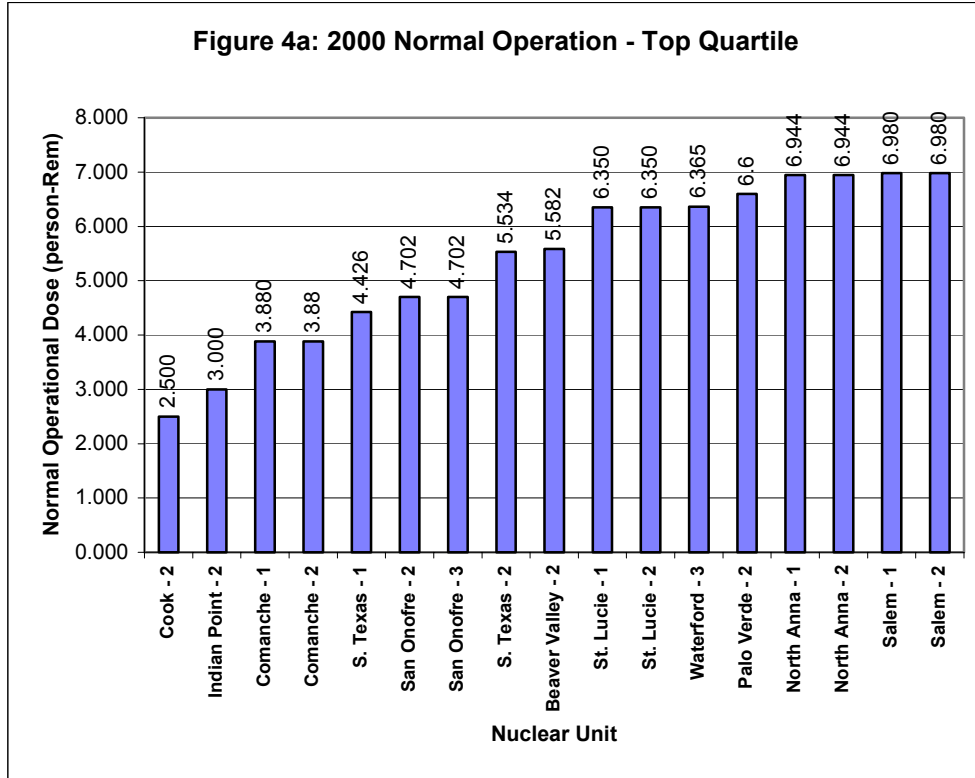


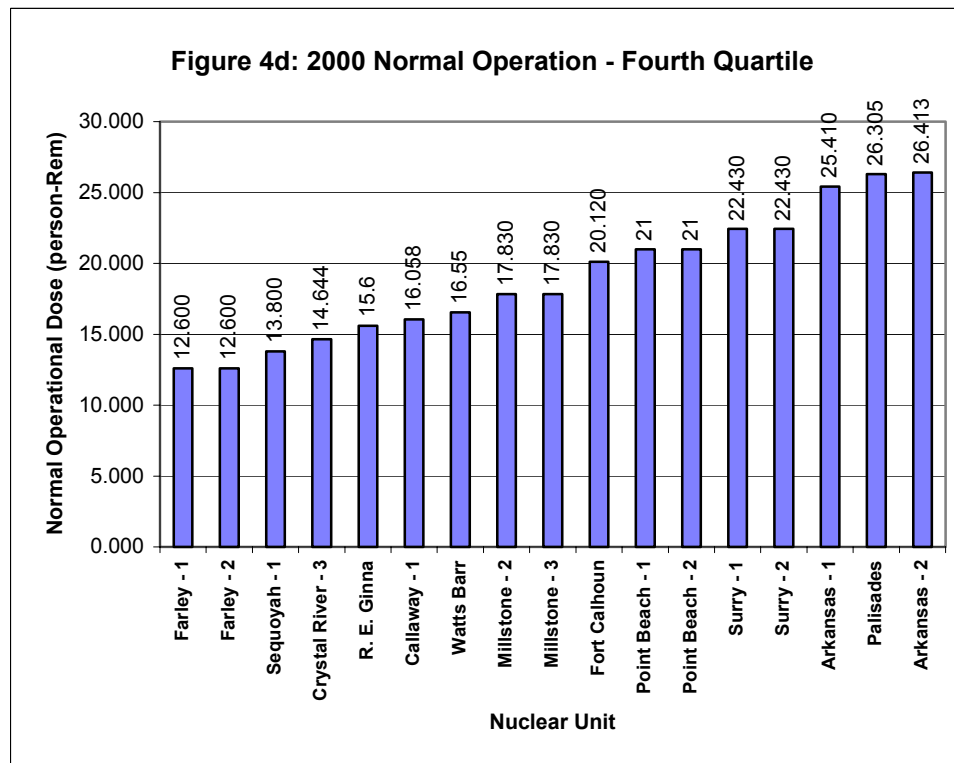
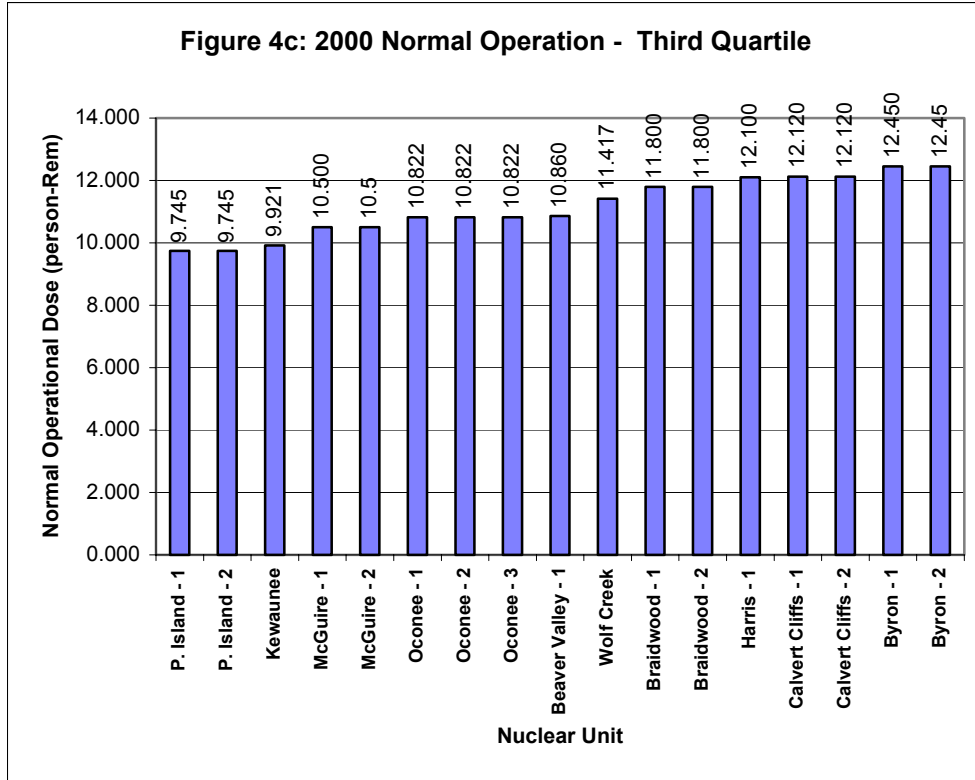


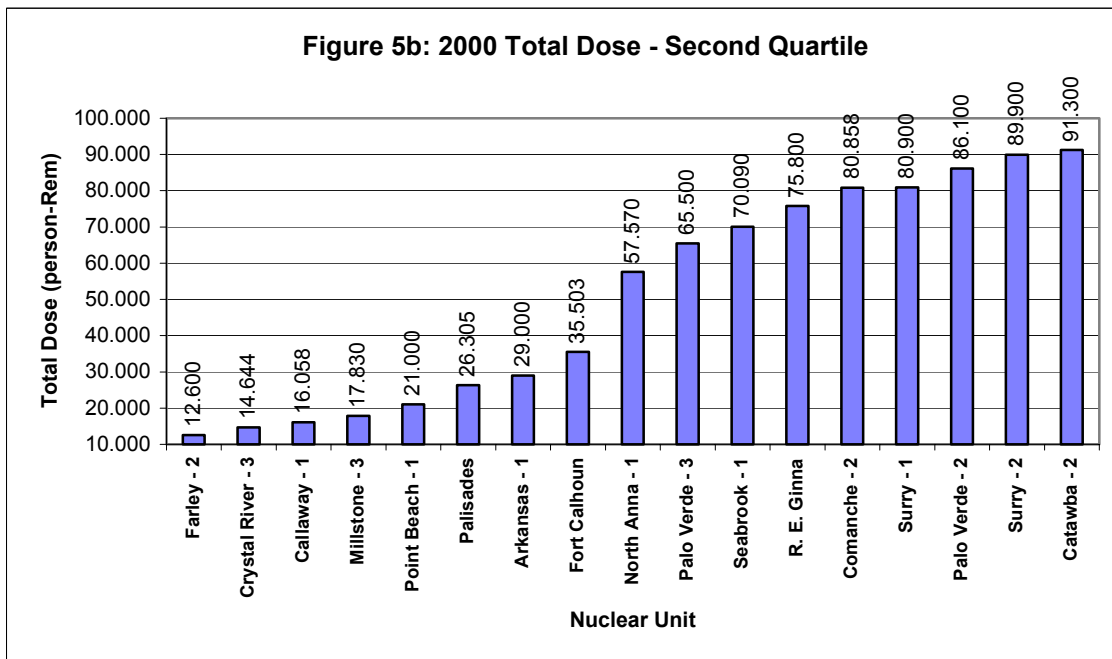
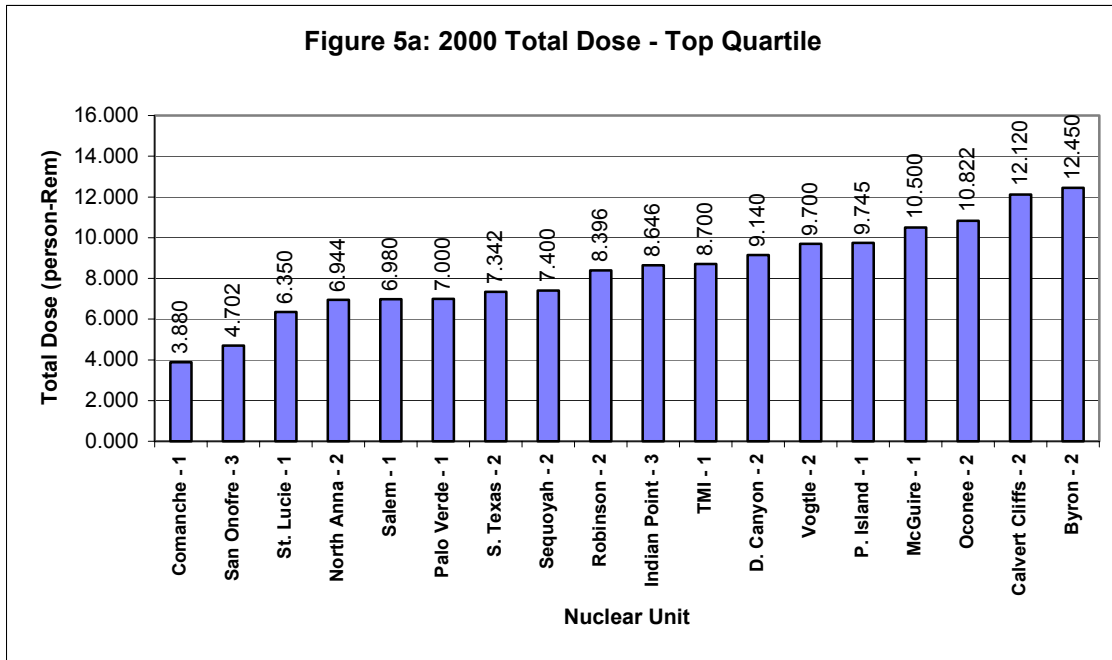












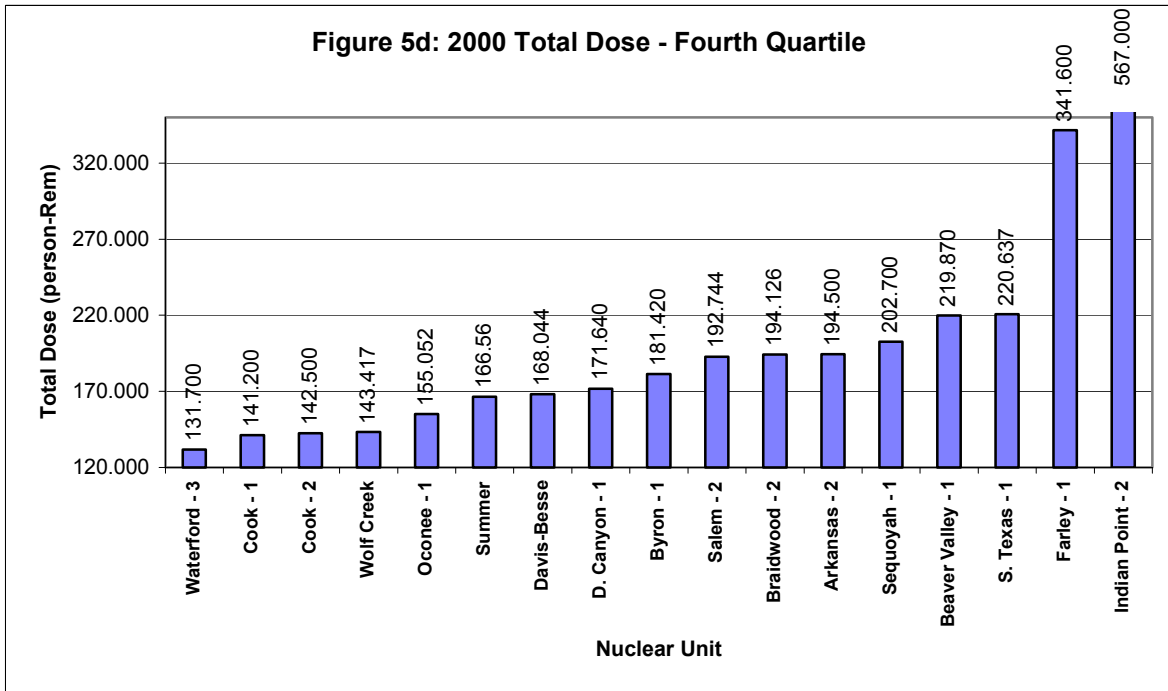
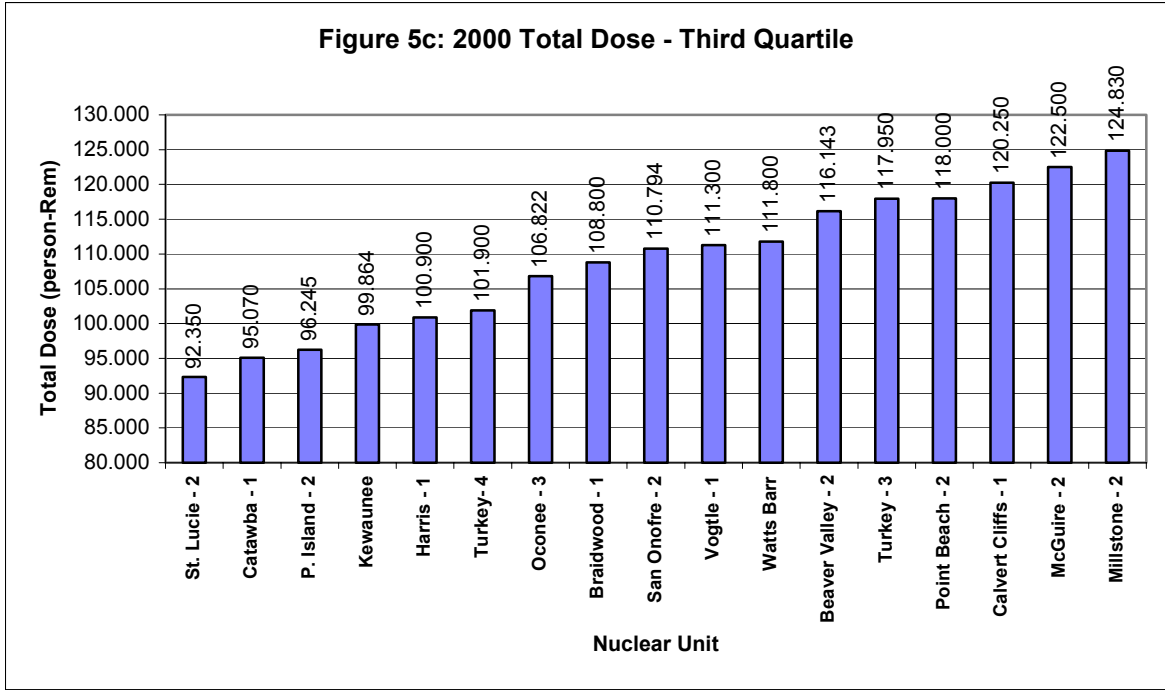


Table 6: 2000 PWR Occupational Dose Data

Nuclear Unit	Outage Start Date	Outage End Date	Outage Duration	Outage Dose	Normal Operation	Other Shutdowns	Total Dose	Goals	Comments	USNRC TLD Site Values
Arkansas - 1	N/A	N/A			25.410	23.000	29.000			
Arkansas - 2	9/15/2000	12/11/2000	85	140.900	26.413	45.900	194.500			242.326
Beaver Valley - 1	2/17/2000	4/10/2000	52	209.010	10.860		219.870			
Beaver Valley - 2	9/30/2000	11/1/2000	32	105.71	5.582	4.851	116.143			337.867
Braidwood - 1	3/15/2000	4/1/2000	17	97	11.800		108.800			
Braidwood - 2	N/A	N/A	16	73.355	11.800		194.126			194.126
Byron - 1	9/23/2000	10/14/2000	21	168.97	12.45		181.420			
Byron - 2	N/A	N/A			12.45		12.450			193.87
Callaway - 1	N/A	N/A			16.058		16.058			16.058
Calvert Cliffs - 1	3/10/2000	4/27/2000	48	108.130	12.120		120.250			134.7
Calvert Cliffs - 2	N/A	N/A			12.120		12.120			133.9
Catawba - 1	10/7/2000	11/13/2000	37	86.02	9.05		95.070			
Catawba - 2	3/8/2000	4/5/2000	28	82.23	9.05		91.300			186.38
Comanche - 1	N/A	N/A			3.880		3.880			77.679
Comanche - 2	9/30/2000	11/5/2000	36	76.978	3.880		80.858			
Cook - 1	1/1/2000	12/1/2001	326	72.000	0.000	69.200	141.200		s/g 72	
Cook - 2	1/1/2000	6/24/2000	175		2.500	140.000	142.500			337.58
Crystal River - 3	N/A	N/A			14.644		14.644			14.644
D. Canyon - 1	10/8/2000	11/17/2000	40	162.500	9.140		171.640			
D. Canyon - 2	N/A	N/A			9.140		9.140			180.79
Davis-Besse	4/1/2000	5/18/2000	47	161.000	7.044		168.044			168.04
Farley - 1	3/4/2000	5/26/2000	83	329.000	12.600		341.600			
Farley - 2	N/A	N/A			12.600		12.600			359.9
Fort Calhoun	N/A	N/A			20.120	16.339	35.503			35.215
Haddam Neck	N/A	N/A					0.000			
Harris - 1	4/15/2000	5/12/2000	27	88.800	12.100		100.900			100.98
Indian Point - 2	9/15/2000	2/7/2001	145	88.800	3.000	475.200	567.000		s/g 304	567
Indian Point - 3	N/A	N/A			7.881	0.765	8.646			8.69
Kewaunee	4/21/2000	6/2/2000	42	89.943	9.921		99.864		rx coolant	99.864
Maine Yankee	N/A	N/A					0.000		seal work	
McGuire - 1	N/A	N/A			10.5		10.500			
McGuire - 2	3/1/2000	4/10/2000	40	112	10.5		122.500			132.52
Millstone - 2	8/31/2000	10/12/2000	35	107	17.83		124.83			
Millstone - 3	N/A	N/A			17.83		78.000			142.66
North Anna - 1	3/12/2000	4/9/2000	28	51.560	6.944		57.570			
North Anna - 2	N/A	N/A			6.944		6.944			65.405
Oconee - 1	11/23/2000	12/28/2000	35	140	10.822	4.230	155.052			
Oconee - 2	N/A	N/A			10.822		10.822			
Oconee - 3	4/6/2000	5/13/2000	37	96	10.822		106.822			272.7
P. Island - 1	N/A	N/A			9.745		9.745			106.09
P. Island - 2	4/28/2001	6/7/2001	40	86.500	9.745		96.245			
Palisades	N/A	N/A			26.305		26.305			26.305
Palo Verde - 1	N/A	N/A			7.000		7.000			

Palo Verde - 2	10/4/2000	11/6/2000	33	79.500	6.600		86.100		
Palo Verde - 3	4/1/2000	5/2/2000	32	57.750	7.800		65.500		158.1
Point Beach - 1	N/A	N/A			21		21.000		
Point Beach - 2	10/14/2000	11/25/2000	42	97	21		118.000		139
R. E. Ginna	9/18/2000	10/20/2000	32	60.200	15.600	0.600	75.800		76.435
Robinson - 2	N/A	N/A			8.396		8.396		8.396
S. Texas - 1	3/1/2000	5/15/2000	75	42.973	4.426	173.238	220.637	s/g 173.239	
S. Texas - 2	N/A	N/A			5.534	1.808	7.342	54days	231.63
Salem - 1	N/A	N/A			6.980		6.980		198.72
Salem - 2	10/6/2000	11/10/2000	35	185.764	6.980		192.744		198.67
San Onofre - 2	10/7/2000	11/16/2000	40	106.092	4.702		110.794	U1=71.674	
San Onofre - 3	N/A	N/A			4.702		4.702	decomm	115.5
Seabrook - 1	10/21/2000	12/10/2000	50	59.780	9.320	0.990	70.090		70.091
Sequoyah - 1	9/25/2000	10/19/2000	24	188.900	13.800	147.120	202.700		
Sequoyah - 2	N/A	N/A			7.400		7.400		210.1
St. Lucie - 1	N/A	N/A			6.35		10.000		
St. Lucie - 2	4/10/2000	5/10/2000	30	86	6.35		88.700		98.7
Summer	10/6/2000	12/31/2000	86	159.572	6.988		166.560	Total Out.	166.56
Surry - 1	4/17/2000	5/22/2000	23	70.100	22.430		80.900	245.679	
Surry - 2	10/1/2000	11/1/2000	31	78.2	22.430		89.900	148 days	169.9
TMI - 1	N/A	N/A			8.700		8.700		8.689
Turkey - 3	2/28/2000	3/26/2000	27	109.750	8.200		117.950		
Turkey - 4	10/7/2000	11/8/2000	32	93.700	8.200		101.900		219.85
Vogtle - 1	9/17/2000	10/18/2000	31	101.600	9.700		111.300		
Vogtle - 2	N/A	N/A			9.700		9.700		121.31
Waterford - 3	3/1/2000	4/5/2000	35	122.261	6.365	3.031	131.700		131.7
Watts Barr	9/15/2000	10/17/2000	32	105.9	16.55		111.800		122.45
Wolf Creek	9/29/2000	10/27/2000	28	132.000	11.417		143.417		143.42
Zion - 1	N/A	N/A					0.000		
Zion - 2	N/A	N/A					0.000		