

OECD Nuclear Energy Agency  
International Atomic Energy Agency



**INFORMATION SYSTEM ON OCCUPATIONAL EXPOSURE**

General Distribution

September 2012

## **ISOE Information Sheet**

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

**2011 Occupational Dose Benchmarking Charts**

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### **NATC ISOE Information Sheet No. 11-4**

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NATC ISOE Information Sheet 11-4 presents the occupational exposure data for PWR's in the United States in 2011. All dose figures have been normalized to the NRC total site values.

The informational charts are arranged in the following order:

**Table 1: 2011 PWR Outage Duration Quartiles**

**Table 2: 2011 PWR Outage Dose Quartiles**

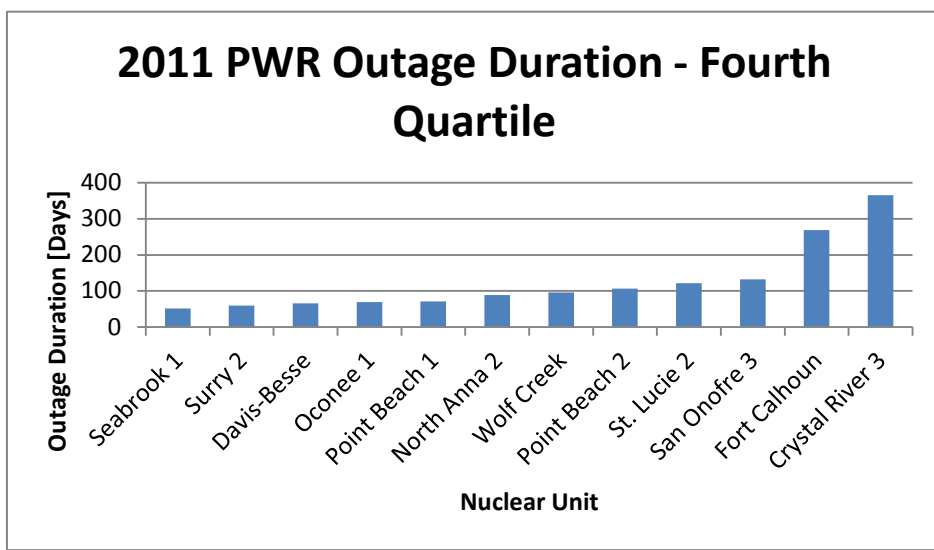
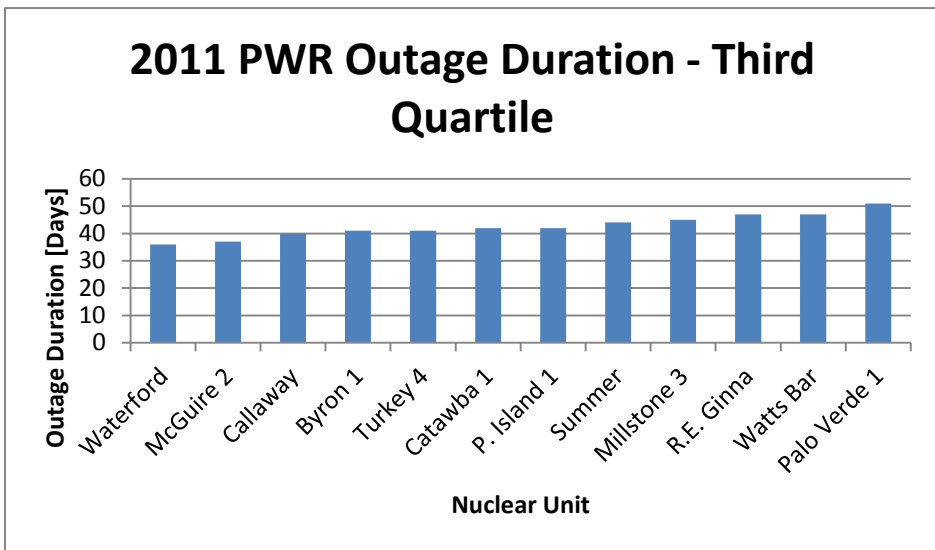
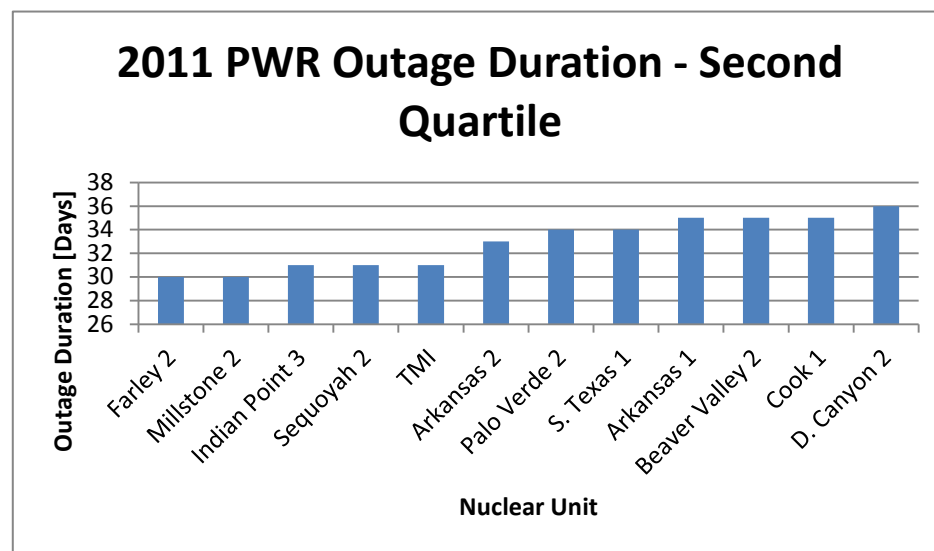
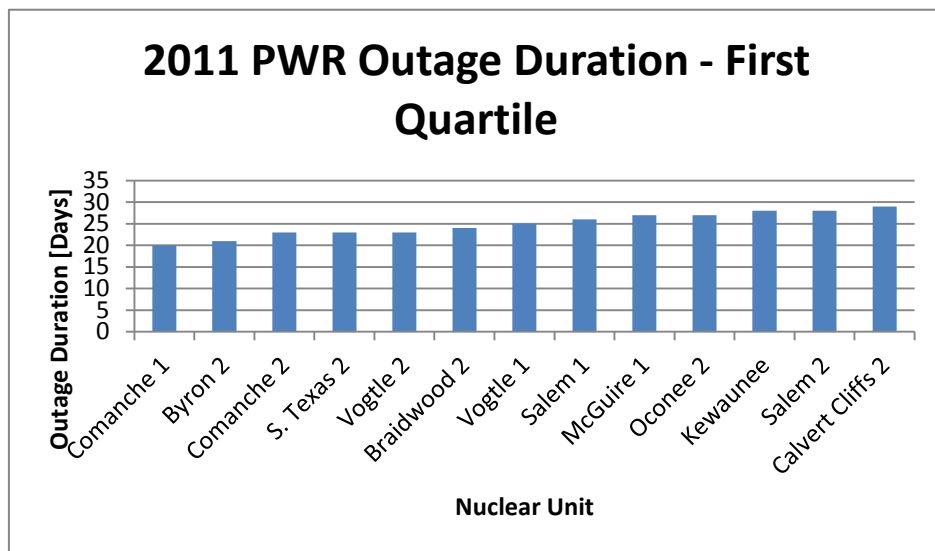
**Table 3: 2011 PWR Normal Ops. Dose Quartiles**

**Table 4: 2011 PWR Total Dose Quartiles**

**Table 5: 2011 PWR Occupational Exposure Data**

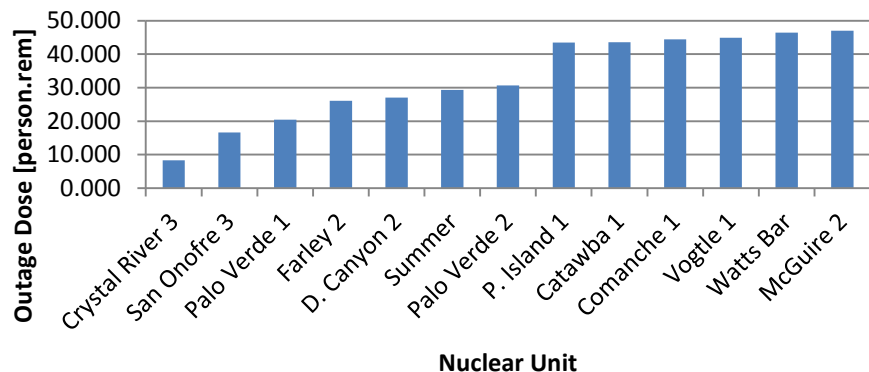
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**Table 1: 2011 PWR Outage Duration Quartiles**

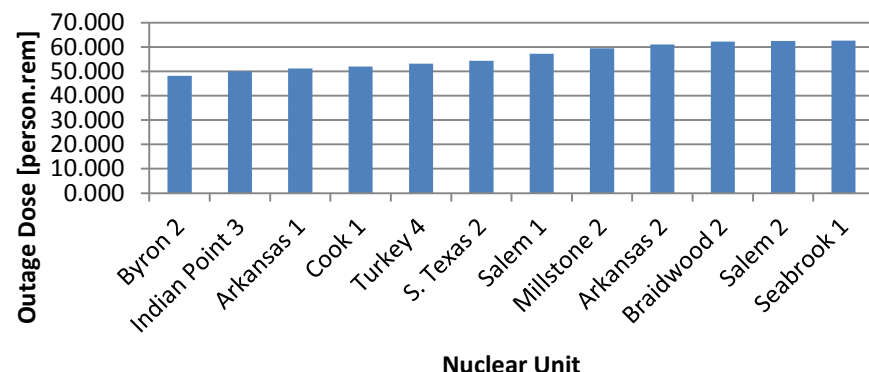


**Table 2: 2011 PWR Outage Dose Quartiles**

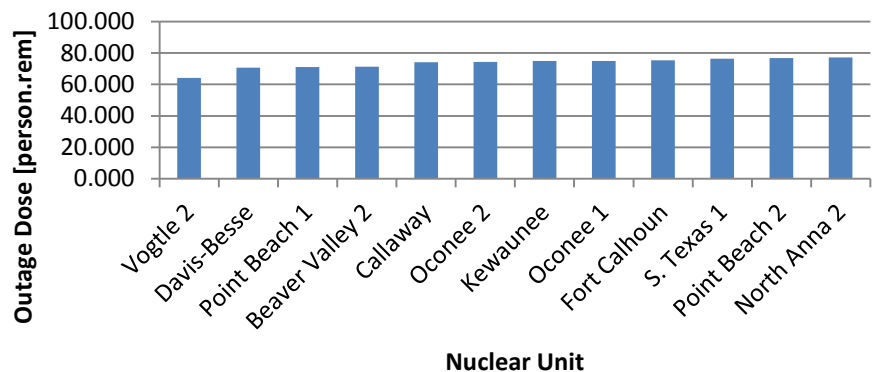
**2011 PWR Outage Dose - First Quartile**



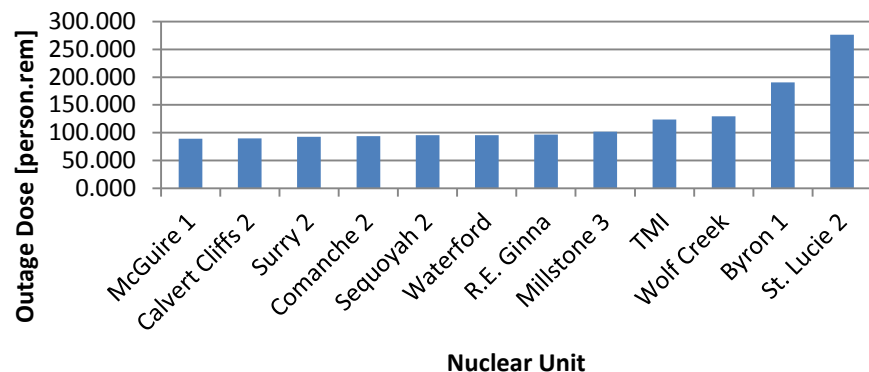
**2011 PWR Outage Dose - Second Quartile**



**2011 PWR Outage Dose - Third Quartile**

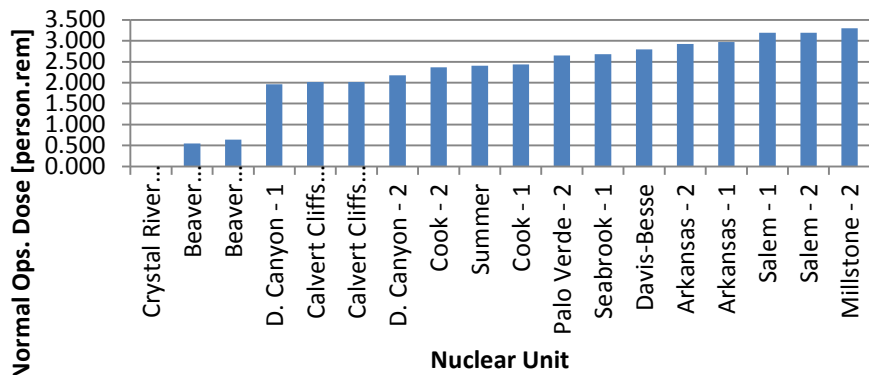


**2011 PWR Outage Dose - Fourth Quartile**

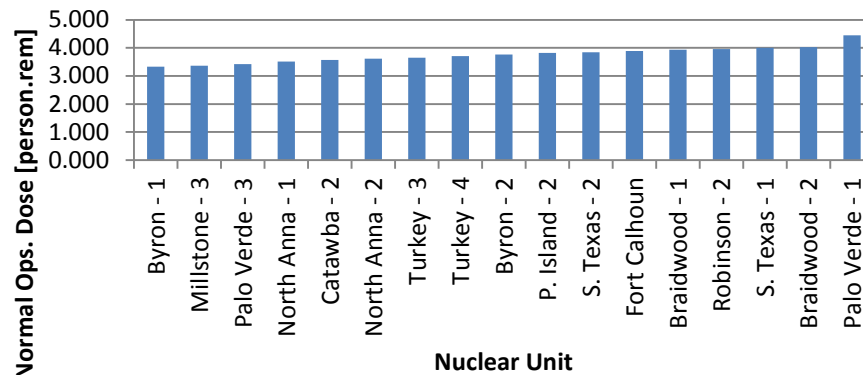


**Table 3: 2011 PWR Normal Ops. Dose Quartiles**

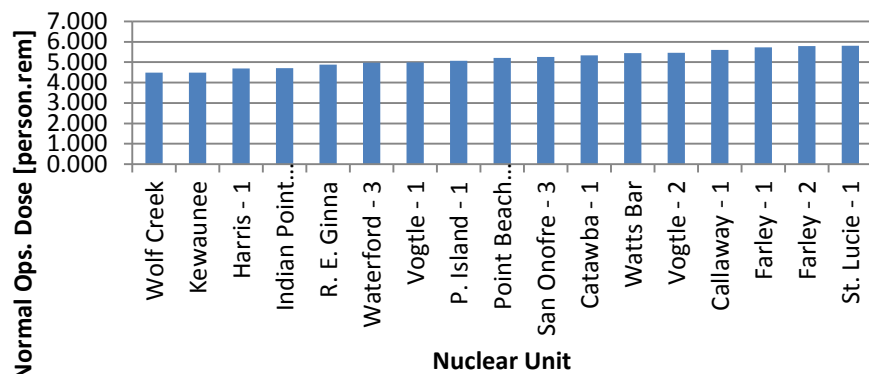
**2011 PWR Normal Ops. Dose - First Quartile**



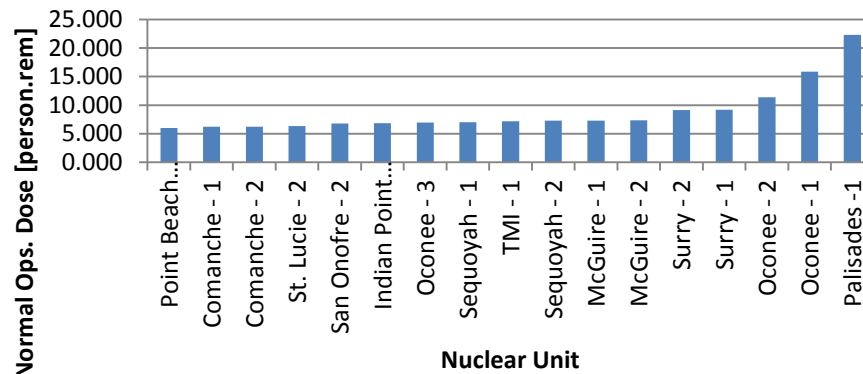
**2011 PWR Normal Ops. Dose - Second Quartile**



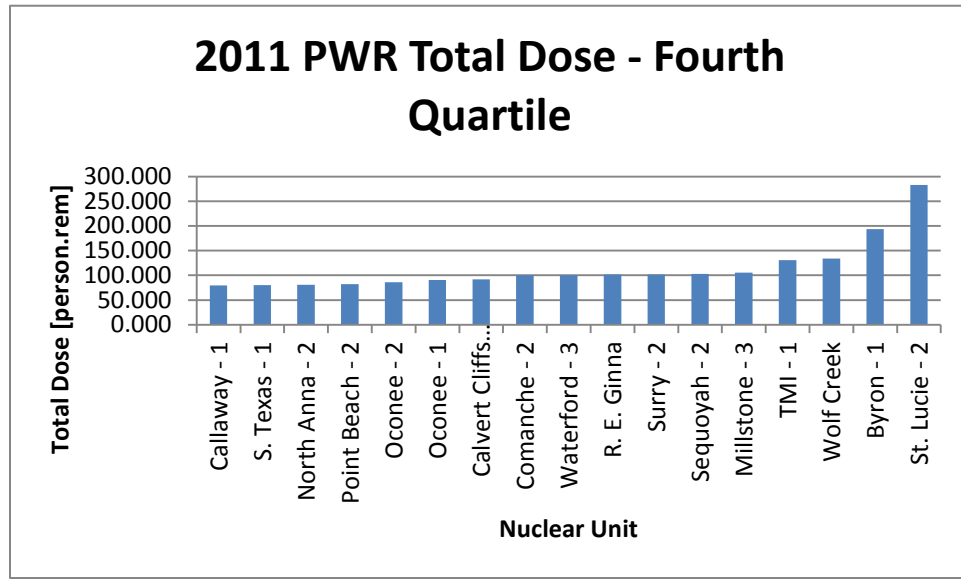
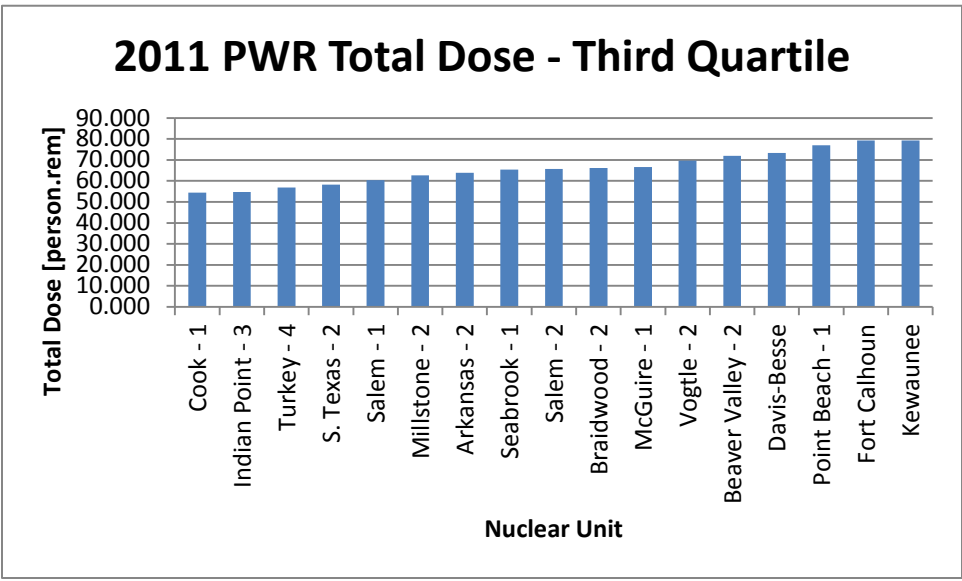
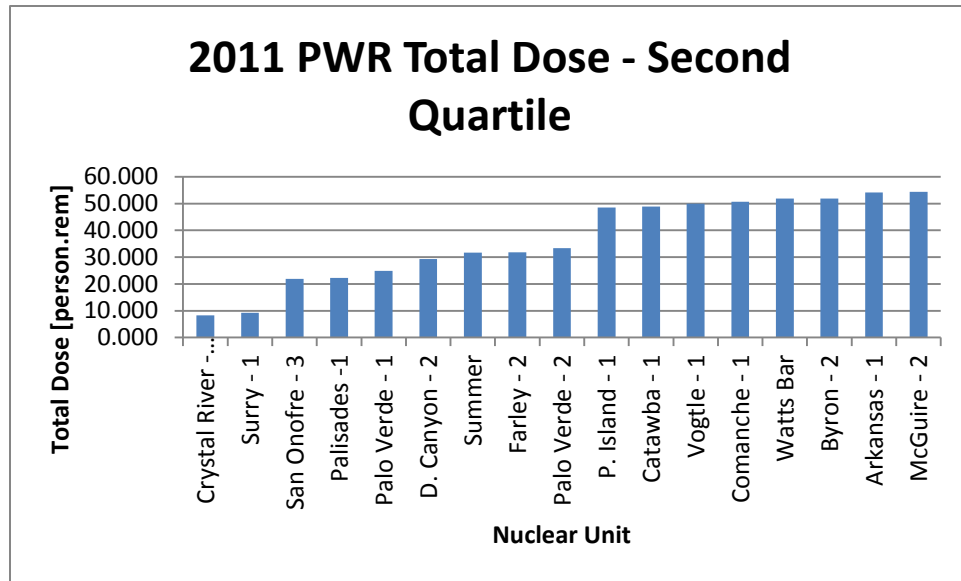
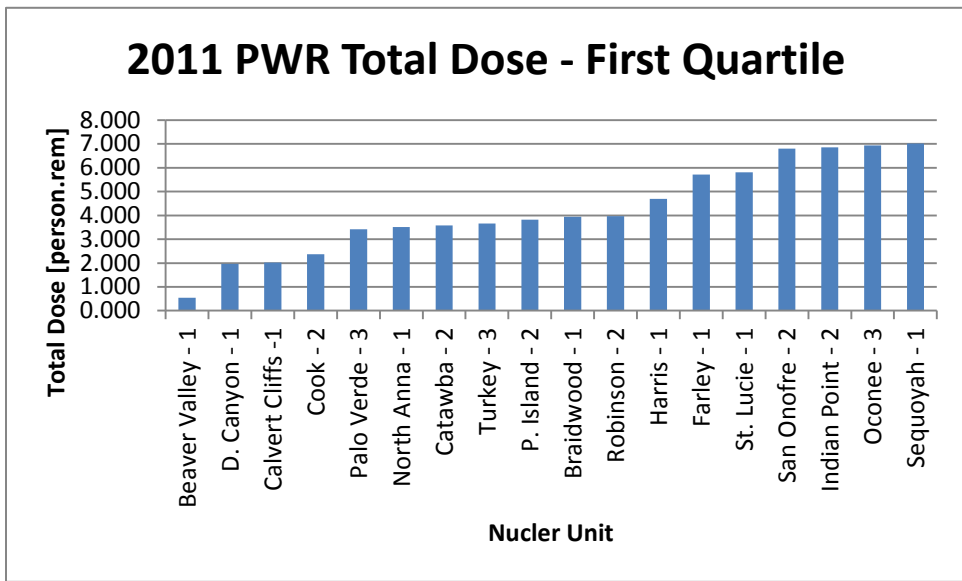
**2011 PWR Normal Ops. Dose - Third Quartile**



**2011 PWR Normal Ops. Dose - Fourth Quartile**



**Table 4: 2011 PWR Total Dose Quartiles**



**Table 5: 2011 PWR Occupational Exposure Data**

Nuclear Unit	Outage Start Date	Outage End Date	Outage Duration	Outage Dose	Normal Ops Dose	Other Shutdowns	Total Unit Dose	Total Site Dose	NRC
Arkansas - 1	10/17/2011	11/20/2011	35	51.189	2.972		54.160		
Arkansas - 2	2/21/2011	3/25/2011	33	60.987	2.922		63.909	118.069	116.884
Beaver Valley - 1					0.550		0.550		
Beaver Valley - 2	3/7/2011	4/10/2011	35	71.240	0.643		71.882	72.433	72.206
Braidwood - 1					3.935		3.935		
Braidwood - 2	4/18/2011	5/11/2011	24	62.188	4.030		66.218	70.152	70.165
Byron - 1	3/14/2011	4/23/2011	41	190.388	3.330		193.718		
Byron - 2	9/19/2011	10/9/2011	21	48.126	3.771		51.897	245.615	244.104
Callaway - 1	10/16/2011	11/24/2011	40	74.103	5.607		79.710	79.710	80.215
Calvert Cliffs - 1					2.016		2.016		
Calvert Cliffs - 2	2/14/2011	3/14/2011	29	89.768	2.016		91.784	93.800	93.800
Catawba - 1	4/24/2011	6/4/2011	42	43.581	5.326		48.907		
Catawba - 2					3.572		3.572	52.479	52.231
Comanche - 1	10/2/2011	10/21/2011	20	44.480	6.233		50.713		
Comanche - 2	4/3/2011	4/25/2011	23	94.027	6.233		100.260	150.972	154.716
Cook - 1	9/21/2011	10/25/2011	35	52.000	2.433		54.433		
Cook - 2					2.369		2.369	56.802	57.169
Crystal River – 3 **	9/26/2009	12/31/2011	890	8.292	0.000		8.292	8.292	8.292
D. Canyon - 1					1.962		1.962		
D. Canyon - 2	5/1/2011	6/5/2011	36	27.075	2.179		29.254	31.216	31.625
Davis-Besse	10/1/2011	12/5/2011	66	70.566	2.794		73.360	73.360	73.360
Farley - 1					5.718		5.718		
Farley - 2	10/10/2011	11/8/2011	30	26.054	5.789		31.843	37.561	37.497
Fort Calhoun *	4/10/2011	12/31/2011	269	75.332	3.894		79.226	79.226	79.226
Harris - 1					4.691		4.691	4.691	4.724

Nuclear Unit	Outage Start Date	Outage End Date	Outage Duration	Outage Dose	Normal Ops Dose	Other Shutdowns	Total Unit Dose	Total Site Dose	NRC
Indian Point - 2					6.857		6.857	6.857	6.807
Indian Point - 3	3/9/2011	4/8/2011	31	50.050	4.714		54.764	54.764	54.764
Kewaunee	2/26/2011	3/26/2011	28	74.844	4.480		79.324	79.324	79.396
McGuire - 1	9/18/2011	10/14/2011	27	59.265	7.305		66.570		
McGuire - 2	2/27/2011	4/4/2011	37	47.034	7.346		54.380	120.950	119.837
Millstone - 2	4/3/2011	5/2/2011	30	59.420	3.300		62.720		
Millstone - 3	10/9/2011	11/22/2011	45	101.870	3.371		105.241	167.961	169.417
North Anna - 1					3.517		3.517		
North Anna - 2	8/24/2011	11/20/2011	89	77.124	3.619		80.743	84.260	90.763
Oconee - 1	4/2/2011	6/9/2011	69	75.002	15.840		90.842		
Oconee - 2	10/22/2011	11/17/2011	27	74.349	11.385		85.734		
Oconee - 3					6.930		6.930	183.506	182.261
P. Island - 1	4/30/2011	6/10/2011	42	43.448	5.067		48.515		
P. Island - 2					3.825		3.825	52.340	58.029
Palisades -1					22.294		22.294	22.294	21.854
Palo Verde - 1	10/8/2011	11/27/2011	51	20.467	4.447		24.914		
Palo Verde - 2	4/2/2011	5/5/2011	34	30.642	2.649		33.291		
Palo Verde - 3					3.423		3.423	61.629	61.374
Point Beach - 1	10/3/2011	12/12/2011	71	71.013	5.976		76.989		
Point Beach - 2	3/1/2011	6/15/2011	107	76.780	5.208		81.988	158.977	159.684
R. E. Ginna	4/24/2011	6/9/2011	47	96.480	4.881		101.361	101.361	100.711
Robinson - 2					3.963		3.963	3.963	3.630
S. Texas - 1	4/3/2011	5/6/2011	34	76.384	4.008		80.391		
S. Texas - 2	10/30/2011	11/21/2011	23	54.399	3.847		58.246	138.637	139.274
Salem - 1	10/24/2011	11/18/2011	26	57.247	3.190		60.436		

Nuclear Unit	Outage Start Date	Outage End Date	Outage Duration	Outage Dose	Normal Ops Dose	Other Shutdowns	Total Unit Dose	Total Site Dose	NRC
Salem - 2	4/10/2011	5/7/2011	28	62.489	3.190		65.678	126.115	126.716
San Onofre - 2					6.804		6.804		
San Onofre – 3***	10/10/2010	2/18/2011	132	16.628	5.260		21.888	28.692	29.658
Seabrook - 1	4/1/2011	5/22/2011	52	62.676	2.680		65.356	65.356	65.593
Sequoyah - 1					7.020		7.020		
Sequoyah - 2	5/23/2011	6/22/2011	31	95.344	7.295		102.639	109.660	109.417
St. Lucie – 1 *			37		5.807		5.807		
St. Lucie - 2	1/3/2011	5/4/2011	122	276.488	6.326		282.814	288.621	295.228
Summer	4/16/2011	5/29/2011	44	29.314	2.408		31.722	31.722	31.580
Surry - 1					9.203		9.203		
Surry - 2	4/17/2011	6/15/2011	60	92.501	9.146		101.647	110.850	113.718
TMI - 1	10/25/2011	11/24/2011	31	123.627	7.158		130.784	130.784	129.775
Turkey - 3					3.655		3.655		
Turkey - 4	3/21/2011	4/30/2011	41	53.200	3.712		56.912	60.566	62.326
Vogtle - 1	3/7/2011	3/31/2011	25	44.890	4.995		49.885		
Vogtle - 2	9/19/2011	10/11/2011	23	64.140	5.458		69.597	119.482	118.931
Waterford - 3	4/6/2011	5/11/2011	36	95.351	4.970		100.321	100.321	100.053
Watts Bar	4/4/2011	5/20/2011	47	46.442	5.444		51.886	51.886	51.021
Wolf Creek	3/19/2011	6/22/2011	96	129.456	4.479		133.935	133.935	133.960

\* Outage continues into 2012.

\*\* Crystal River 3 has been in an outage since 2009.

\*\*\* San Onofre continued an outage from 2010. Only 16.628 person.rem resulted from work performed in 2011.