

## **PMTurkeyCOLPEm Resource**

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**From:** Burski, Raymond [RAYMOND.BURSKI@fpl.com]  
**Sent:** Tuesday, June 28, 2011 2:01 PM  
**To:** Kugler, Andrew  
**Cc:** Franzone, Steve  
**Subject:** Corrected Attachment 2 to FPL Letter L-2011-247  
**Attachments:** L-2011-222 Final RAI for Ltr 1105051 eRAI 5565 Response-Corrected Attachment 2.pdf

Andy,

Attached is attachment 2 to L-2011-222 Final RAI for Ltr 1105051 eRAI 5565 Response, corrected for the pagination error. We will also overnight a hard copy of Attachment 2.

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**Subject:** Corrected Attachment 2 to FPL Letter L-2011-247  
**Sent Date:** 6/28/2011 2:00:57 PM  
**Received Date:** 6/28/2011 2:01:11 PM  
**From:** Burski, Raymond

**Created By:** RAYMOND.BURSKI@fpl.com

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<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	1037	6/28/2011 2:01:11 PM
L-2011-222 Final RAI for Ltr 1105051 eRAI 5565 Response-Corrected Attachment 2.pdf 99762		

**Options**  
**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

**NRC RAI Letter No. 1105051 Dated May 5, 2011**

**SRP Section: EIS 08.04 – Assessment of Need for Power**

Question from Environmental Technical Support Branch (RENV)

**NRC RAI Number: EIS 08.04-2 (RAI 5565)**

Consistent with NUREG 1555, the staff considers “historical and projected electrical energy use by major categories in the relevant service area. . . through the 3rd year of commercial operation of all proposed units.” (ESRP 8.2.1-3 and 8.3-3) On page 8.2-7 of the ER, it states ‘FPL currently projects that it will have a need for new resources beginning in 2022 and increasing every year thereafter’. However, there are no projections past 2020 in the ER. Provide updated future supply and demand projections through 2026 with respect to the need for Units 6 and 7, disaggregated according to the categories listed in NUREG-1555.

**FPL RESPONSE:**

Updated future supply and demand projections through 2026 with respect to the need for Units 6 & 7, are provided in revised ER Tables 8.2-1 and 8.2.2 in the "Associated COLA Revisions" section of the response.

This response is PLANT SPECIFIC.

**References:**

None

**ASSOCIATED COLA REVISIONS:**

ER subsection 8.2.2 – “Long-Term Sales Forecasts”, first paragraph, will be revised in a future COLA revision to reflect the RAI response, as follows:

Long-term forecasts of electricity sales were developed for each of the six revenue classes for the most recent forecasting period of 2008~~011~~–2026 (FPL-2008). The first five classes represent retail sales and the sixth represents wholesale sales.

ER subsection 8.2.2 – “Long-Term Sales Forecasts”, second paragraph, will be revised in a future COLA revision to reflect the RAI response, as follows:

These forecasts were adjusted to match the NEL forecast. The results of these sales forecasts for the years 201~~10~~–2026~~19~~, as provided in the Ten Year Power Plant Site Plan (FPL Apr 2010), **along with historical data**, are presented in Table 8.2-1.

ER subsection 8.2.2 – “Net Energy for Load”, second paragraph, will be revised in a future COLA revision to reflect the RAI response, as follows:

The sales by class forecast previously discussed are then adjusted to match the total billed sales. The forecasted NEL values 201~~10~~–2026~~19~~ along with historical peak loads are present in Table 8.2-1.

ER subsection 8.2.3 – “System Peak Forecasts”, first paragraph, will be revised in a future COLA revision to reflect the RAI response, as follows:

The rate of absolute growth in FPL system peak load has been a function of a growing customer base, varying weather conditions, continued economic growth, changing patterns of customer behavior (including an increased stock of electricity-consuming appliances), and more efficient heating and cooling appliances. FPL developed the peak forecast models to capture these behavioral relationships. The forecasting methodology of summer, winter, and monthly system peaks is presented below. The forecasted values for summer and winter peak loads for the years 2011~~07~~–2026~~20~~, **along with historical summer and winter peak loads**, are presented in Table 8.2-2.

ER subsection 8.2.3 – “System Winter Peak”, third paragraph, will be revised in a future COLA revision to reflect the RAI response, as follows:

FPL also projected that summer peak demand would grow from approximately **21,700** ~~22,260~~ MW in 2011~~07~~ to approximately **30,200** ~~30,090~~ MW in 2026~~0~~. Similarly, the winter peak was forecast to grow from approximately **21,400** ~~22,250~~ MW in 2011~~07~~ to approximately **26,300** ~~29,340~~ MW in 2026~~0~~.

ER subsection 8.2.3 – “System Winter Peak”, fifth paragraph, will be revised in a future COLA revision to reflect the RAI response, as follows:

In the May 3, 2010 filing for the Nuclear Power Plant Cost Recovery Clause, FPL informed the FPSC of a revised in-service date for Turkey Point Units 6 & 7. The revised in-service dates of 2022 for Unit 6 and 2023 for Unit 7 were derived from sequencing the preparation and construction phase activities. In addition, although FPL’s demand growth rate has slowed from the time of the need filing, FPL currently projects that it will have a need for new resources beginning in 2016~~22~~ and increasing every year thereafter.

ER Tables 8.2.1 and 8.2.2 will be revised in a future COLA revision to reflect the RAI response, as follows.

**ASSOCIATED ENCLOSURES:**

None

**Table 8.2-1 (Sheet 1 of 2)**  
**FPL History and Forecast of Energy Consumption, Capacity, and Peak Demand**

Year	Energy Consumption (gigawatt-hours)										Net Energy for Load
	Residential	Commercial	Industrial	Railroads and Railways	Street and Highway Lighting	Other Public Authorities	Total Sales	Sales For Resale	Utility Use and Losses		
<b>Historical</b>											
2000	46,320	37,004	37,688	84	408	384	88,930	970	7,059	95,989	
2001	47,588	37,960	4091	86	419	67	90,212 94,182	970	7,222	98,404	
2002	50,865	40,029	4057	89	420	63	95,523 96,756	1233	7,443	104,199	
2003	53,485	41,425	4004	93	425	64	99,496 404,007	1511	7,386	108,393	
2004	52,502	42,064	3964	93	413	58	99,095 400,626	1531	7,467	108,0943	
2005	54,348	43,468	3913	95	424	49	102,296 403,802	1506	7,498	111,301	
2006	54,570	44,487	4036	94	422	49	103,659 405,228	1569	7,909	113,137	
2007	55,138	45,921	3774	91	437	53	105,415 406,944	1499	7,401	114,315	
2008	53,229	45,561	3587	81	423	37	102,919 403,974	993	7092	111,004	
2009	53,950	45,025	3245	80	422	34	102,755 403,944	1155	7394	111,3043	
<b>2010</b>	<b>56,343</b>	<b>44,544</b>	<b>3130</b>	<b>81</b>	<b>431</b>	<b>28</b>	<b>104,557</b>	<b>2049</b>	<b>7768</b>	<b>114,373</b>	
<b>Forecast</b>											
2010	52,160	44,652	3348	89	382	36	402,713	2046	7472	409,886	
2011	54,364 53,365	44,188 45,009	31523464	82 89	442 378	30 35	102,257 404,485	21422445	67767450	111,175441,634	
2012	54,932 54,340	44,496 45,632	30823530	91 89	452 383	30 34	103,083 406,144	21422466	72927372	112,517443,546	
2013	56,399 55,783	45,134 46,484	30373567	92 89	463 394	30 33	105,155 408,406	20472059	74457493	114,647445,899	
2014	58,257 57,670	46,214 47,787	30183578	92 89	475 404	30 33	108,085 414,404	49354846	80148068	121,035422,474	

**Table 8.2-1 (Sheet 2 of 2)**  
**FPL History and Forecast of Energy Consumption, Capacity, and Peak Demand**

Year	Energy Consumption (gigawatt-hours)											Net Energy for Load
	Residential	Commercial	Industrial	Railroads and Railways	Street and Highway Lighting	Other Public Authorities	Total Sales	Sales For Resale	Utility Losses			
2015	59,326 58,474	47,089 48,743	30133560	92 89	487 412	30 33	110,038 116,762	55665484	8006 7980		123,610 124,742	
2016	60,382 58,782	47,869 49,228	30153534	92 89	500 425	30 33	111,888 117,604	55995543	8106 8070		125,593 125,672	
2017	61,118 59,448	48,660 50,012	30043549	92 89	514 437	30 33	113,418 119,063	56255555	8208 8173		127,251 127,296	
2018	61,828 60,460	49,456 51,468	29923543	92 89	529 454	30 33	114,928 121,296	56725602	8310 8370		128,910 129,665	
2019	62,480 61,346	50,385 52,485	29873509	92 89	544 464	30 33	116,518 123,244	57175648	8443 8468		130,679 131,742	
2020	63,575	51,512	2981	92	560	30	118,749	5770	8601		133,121	
2021	64,716	52,695	2973	92	576	30	121,081	5821	8979		135,881	
2022	66,123	54,033	2952	92	592	30	123,823	5872	9177		138,872	
2023	67,592	55,353	2945	92	609	30	126,621	5923	9379		141,923	
2024	69,121	56,665	2975	92	627	30	129,510	5973	9587		145,070	
2025	70,702	58,104	3006	92	645	30	132,578	6022	9806		148,406	
2026	72,010	59,344	3019	92	663	30	135,157	6077	9994		151,229	

**Table 8.2-2 (Sheet 1 of 2)**  
**Projection of FPL's Resource Needs Through 2026 (a)**  
**2007–2020 Capacity Needs (without New Capacity Additions After 2012)**  
**Summer**

August of the Year	Projections of FPL Unit Capacity (MW)	Projections of Firm Purchases (MW)	Projections of Scheduled Maintenance (MW)	Projection of Total Capacity (MW)	Peak Load Forecast (MW)	Summer Demand Side Management Forecast <sup>(a)</sup> (MW)	Forecast of Firm Peak (MW)	Forecast of Summer Reserves (MW)	Forecast of Summer Reserve Margins w/o Additions (%)	MW Needed to Meet 20% Reserve Margin <sup>(b)</sup> (MW)
2007	22,123	2993	-	25,116	22,259	1768	20,494	4625	22.6	(527)
2008	22,150	2993	-	25,143	22,770	1908	20,862	4284	20.5	(109)
2009	23,370	2562	-	25,932	23,435	2034	21,404	4534	21.2	(254)
2010	24,589	2205	-	26,794	24,003	2146	21,857	4937	22.6	(566)
2011	22,445	2255	350	24,151	21,679	1981	19,693	4452	22.6	(513)
2012	23,206	2193	1064	24,098	21,853	2141	19,712	4386	22.2	(443)
2013	23,655	2193	1176	24,435	22,155	2317	19,835	4597	23.2	(629)
2014	24,867	2193	1176	25,647	23,452	2534	20,918	4728	22.6	(545)
2015	24,867	2193	350	26,563	24,172	2710	21,462	5100	23.8	(808)
2016	24,867	2193	350	25,257	24,605	2871	21,734	3523	16.2	824
2017	24,867	2193	350	25,257	25,025	3016	22,009	3248	14.8	1154
2018	24,867	2193	350	25,257	25,266	3149	22,117	3139	14.2	1284
2019	24,867	2193	350	25,257	25,690	3271	22,419	2837	12.7	1647
2020	24,867	2193	350	25,257	26,193	3371	22,822	2434	10.7	2130
2021	24,867	740	350	25,257	26,830	3471	23,359	1897	8.1	2775
2022	24,867	740	350	25,257	27,523	3571	23,952	1304	5.4	3486
2023	24,867	740	350	25,257	28,208	3671	24,537	719	2.9	4188
2024	24,867	740	350	25,257	28,849	3771	25,078	178	0.7	4838
2025	24,867	490	350	25,007	29,525	3871	25,654	(648)	-2.5	5779
2026	24,867	160	350	24,677	30,213	3904	26,309	(1633)	-6.2	6895

**Table 8.2-2 (Sheet 2 of 2)**  
**Projection of FPL's Resource Needs Through 2026 (a)**  
**2007–2020 Capacity Needs (without New Capacity Additions After 2012)**  
**Winter**

January of the Year	Projections of FPL Unit Capacity (MW)	Projections of Firm Purchases (MW)	Projections of Scheduled Maintenance (MW)	Projection of Total Capacity (MW)	Peak Load Forecast (MW)	Winter Demand Management Forecast <sup>(b)</sup> (MW)	Forecast of Firm Peak (MW)	Forecast of Winter Reserves (MW)	Forecast of Winter Reserve Margins w/o Additions (%)	MW Needed to Meet 20% Reserve Margin <sup>(b)</sup> (MW)
2007	22,294	3862	-	26,156	22,247	1555	20,692	5464	26.4	(1326)
2008	23,503	3026	-	26,529	22,627	1649	20,978	5551	26.5	(1355)
2009	23,534	2700	-	26,234	23,145	1750	21,395	4866	22.8	(593)
2010	24,866	2239	-	27,105	23,587	1814	21,773	5332	24.5	(977)
2011	23,987	2089	1276	24,800	21,443	1711	19,732	5067	25.7	(1121)
2012	24,383	2089	2942	23,530	21,491	1802	19,689	3840	19.5	97
2013	23,618	1964	1372	24,210	21,683	1909	19,774	4435	22.4	(481)
2014	24,973	1964	1382	25,555	22,584	2065	20,519	5036	24.5	(932)
2015	26,317	1964	550	27,731	23,048	2182	20,866	6864	32.9	(2691)
2016	26,317	1123	550	26,890	23,302	2288	21,014	5876	28.0	(1673)
2017	26,317	740	550	26,507	23,543	2382	21,161	5345	25.3	(1113)
2018	26,317	740	550	26,507	23,794	2464	21,330	5176	24.3	(910)
2019	26,317	740	550	26,507	24,044	2536	21,508	4999	23.2	(697)
2020	26,317	740	550	26,507	24,305	2596	21,709	4797	22.1	(455)
2021	26,335	740	550	26,525	24,595	2656	21,939	4585	20.9	(197)
2022	26,335	740	550	26,525	24,898	2716	22,182	4342	19.6	94
2023	26,335	740	550	26,525	25,246	2776	22,470	4054	18.0	440
2024	26,335	740	550	26,525	25,606	2836	22,770	3754	16.5	800
2025	26,335	490	550	26,275	25,972	2896	23,076	3198	13.9	1417
2026	26,335	160	550	25,945	26,316	2916	23,400	2544	10.9	2136



- (a) **No new generation capacity additions assumed after the following FPSC-approved projects: West County 3 (2011 in-service date), Cape Canaveral modernization (2013), and Riviera modernization (2014). These projections are consistent with information filed with the Florida Public Service Commission on April 1, 2011 in FPL's 2011 Ten-Year Site Plan, and on May 2, 2011 in FPL's 2011 NCRRC filing.**
- (b) **FPL has resource needs beginning in the Summer of 2016 and increasing every year thereafter. FPL's resource needs are driven by its Summer reserve margin criterion of 20% which is projected to be violated years earlier than its Winter reserve margin criterion of 20% would be as shown above. Through the year 2026, FPL's projected resource need is approximately 6,900 MW driven by the Summer reserve margin criterion**
- ~~(a) Demand Side Management values shown represent cumulative load management and incremental conservation capability. Source: Table III.C.1 (FPL, 2007b).~~
- ~~(b) No new FPL generating unit additions after West County Energy Center (WCEC) 1 in 2009 and WCEC 2 in 2010 are assumed to be added. Approximately 290 MW of renewable energy firm capacity purchases starting in the 2009–2012 time frame are assumed to be added. 414 MW of the proposed nuclear uprates is assumed. Approximately 104 MW are added in December 2011, 103 MW in May 2012, 103 MW in June 2012, and 104 MW by December 2012.~~