

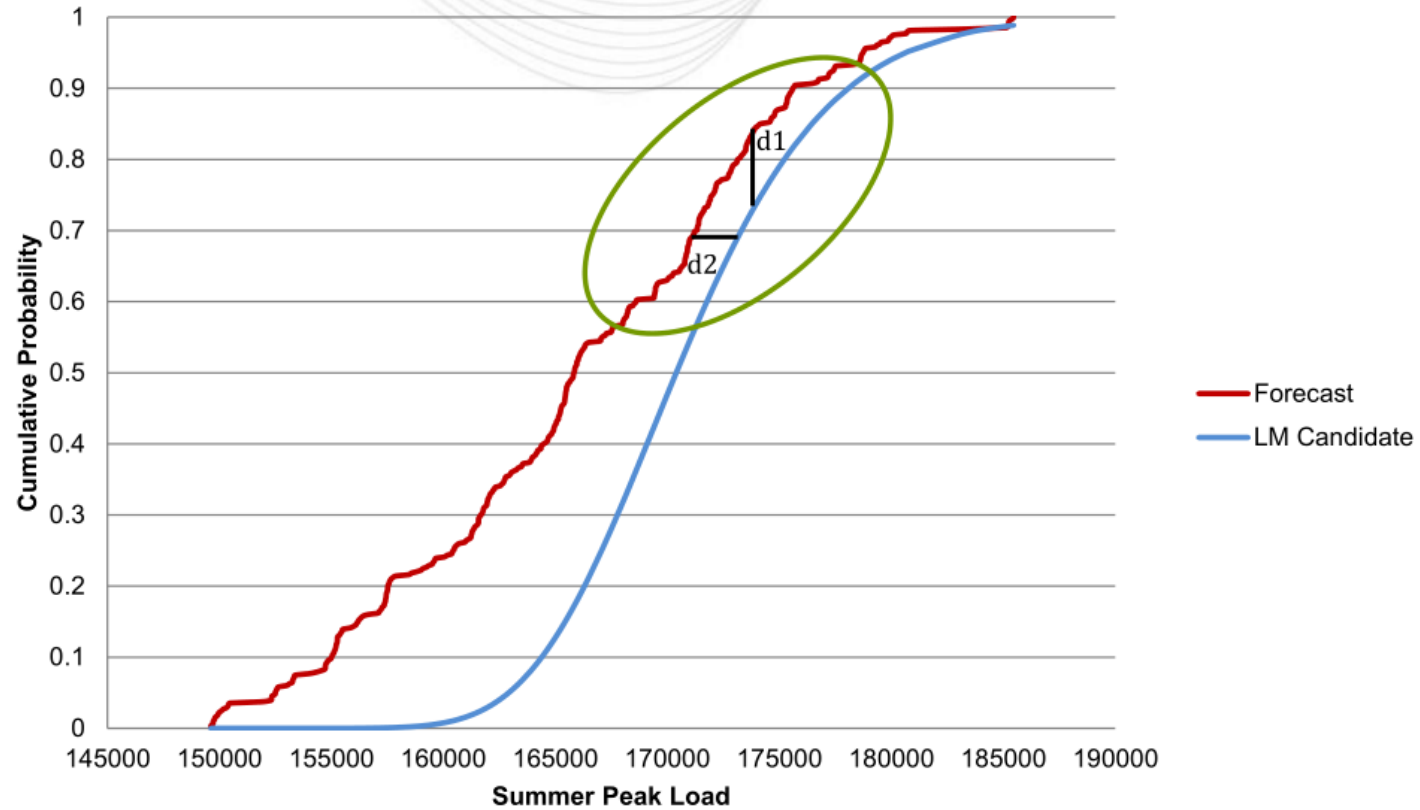


PJM Load Model Selection for 2019 RRS

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- Load Model Selection is performed due to the fact that the Coincident Peak distributions from the PJM Load Forecast cannot be used directly in PRISM
- Analysis based on method approved at June 9, 2016 PC meeting (Appendix V in 2016 RRS Assumptions Letter)
 - Selected Load Model should be a good match of CP1 distribution from PJM load Forecast
 - Consideration of historical PJM / World load diversity
- This year the analysis is based on the 2019 Load Forecast Report. Focus is on 2023/24 Delivery Year.

Peak Day (CP1) Cumulative Distribution



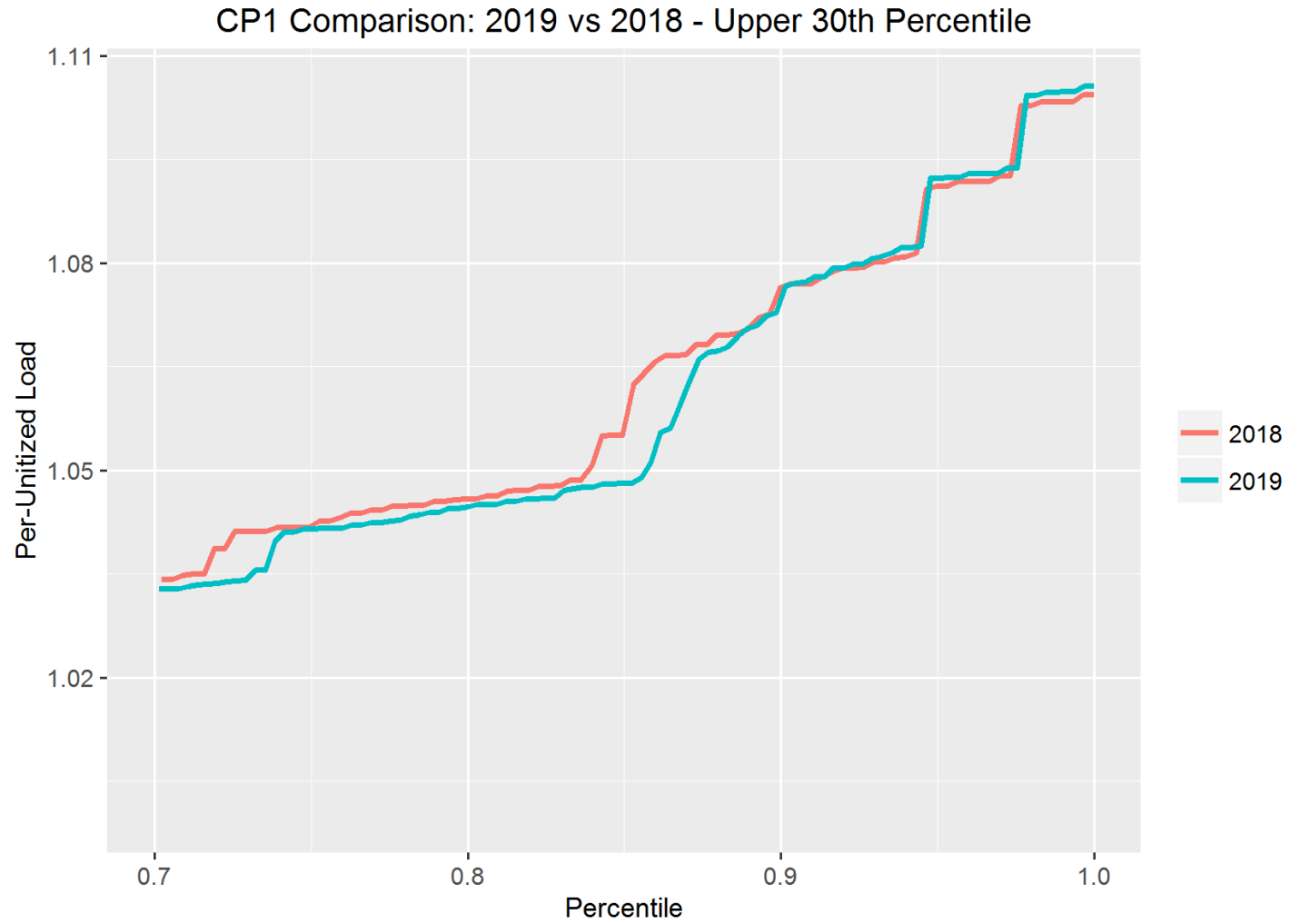


PJM Load Model Combinations to Assess

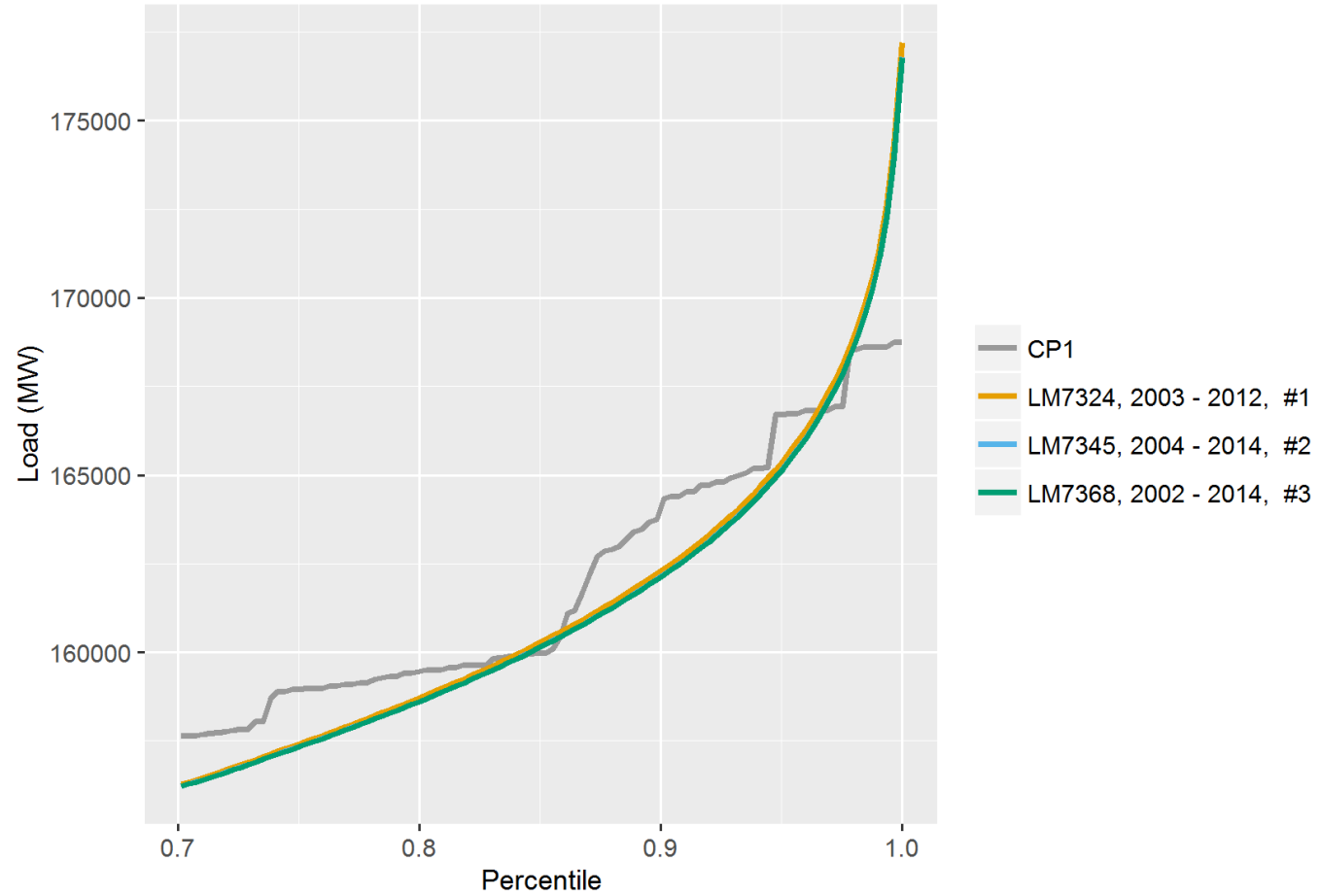
Load Model #	Description	Load Model #	Description	Load Model #	Description
7663	1998 - 2016 19 Year LM	7351	2001 - 2012 12 Year LM	7314	2004 - 2012 9 Year LM
7389	1998 - 2015 18 Year LM	7352	2002 - 2013 12 Year LM	7315	2005 - 2013 9 Year LM
7661	1999 - 2016 18 Year LM	7353	2003 - 2014 12 Year LM	7316	2006 - 2014 9 Year LM
7386	1998 - 2014 17 Year LM	7354	2004 - 2015 12 Year LM	7317	2007 - 2015 9 Year LM
7387	1999 - 2015 17 Year LM	7628	2005 - 2016 12 Year LM	7598	2008 - 2016 9 Year LM
7658	2000 - 2016 17 Year LM	7339	1998 - 2008 11 Year LM	7296	1998 - 2005 8 Year LM
7382	1998 - 2013 16 Year LM	7340	1999 - 2009 11 Year LM	7297	1999 - 2006 8 Year LM
7383	1999 - 2014 16 Year LM	7341	2000 - 2010 11 Year LM	7298	2000 - 2007 8 Year LM
7384	2000 - 2015 16 Year LM	7342	2001 - 2011 11 Year LM	7299	2001 - 2008 8 Year LM
7654	2001 - 2016 16 Year LM	7343	2002 - 2012 11 Year LM	7300	2002 - 2009 8 Year LM
7377	1998 - 2012 15 Year LM	7344	2003 - 2013 11 Year LM	7301	2003 - 2010 8 Year LM
7378	1999 - 2013 15 Year LM	7345	2004 - 2014 11 Year LM	7302	2004 - 2011 8 Year LM
7379	2000 - 2014 15 Year LM	7346	2005 - 2015 11 Year LM	7303	2005 - 2012 8 Year LM
7380	2001 - 2015 15 Year LM	7619	2006 - 2016 11 Year LM	7304	2006 - 2013 8 Year LM
7649	2002 - 2016 15 Year LM	7319	1998 - 2007 10 Year LM	7305	2007 - 2014 8 Year LM
7371	1998 - 2011 14 Year LM	7320	1999 - 2008 10 Year LM	7306	2008 - 2015 8 Year LM
7372	1999 - 2012 14 Year LM	7321	2000 - 2009 10 Year LM	7586	2009 - 2016 8 Year LM
7417	2000 - 2013 14 Year LM	7322	2001 - 2010 10 Year LM	7280	1998 - 2004 7 Year LM
7374	2001 - 2014 14 Year LM	7323	2002 - 2011 10 Year LM	7281	1999 - 2005 7 Year LM
7375	2002 - 2015 14 Year LM	7324	2003 - 2012 10 Year LM	7282	2000 - 2006 7 Year LM
7643	2003 - 2016 14 Year LM	7325	2004 - 2013 10 Year LM	7283	2001 - 2007 7 Year LM
7364	1998 - 2010 13 Year LM	7326	2005 - 2014 10 Year LM	7284	2002 - 2008 7 Year LM
7365	1999 - 2011 13 Year LM	7327	2006 - 2015 10 Year LM	7285	2003 - 2009 7 Year LM
7366	2000 - 2012 13 Year LM	7609	2007 - 2016 10 Year LM	7286	2004 - 2010 7 Year LM
7367	2001 - 2013 13 Year LM	7308	1998 - 2006 9 Year LM	7287	2005 - 2011 7 Year LM
7368	2002 - 2014 13 Year LM	7309	1999 - 2007 9 Year LM	7288	2006 - 2012 7 Year LM
7369	2003 - 2015 13 Year LM	7310	2000 - 2008 9 Year LM	7289	2007 - 2013 7 Year LM
7636	2004 - 2016 13 Year LM	7311	2001 - 2009 9 Year LM	7290	2008 - 2014 7 Year LM
7348	1998 - 2009 12 Year LM	7312	2002 - 2010 9 Year LM	7291	2009 - 2015 7 Year LM
7349	1999 - 2010 12 Year LM	7313	2003 - 2011 9 Year LM	7573	2010 - 2016 7 Year LM
7350	2000 - 2011 12 Year LM				

91 Load Model Candidates

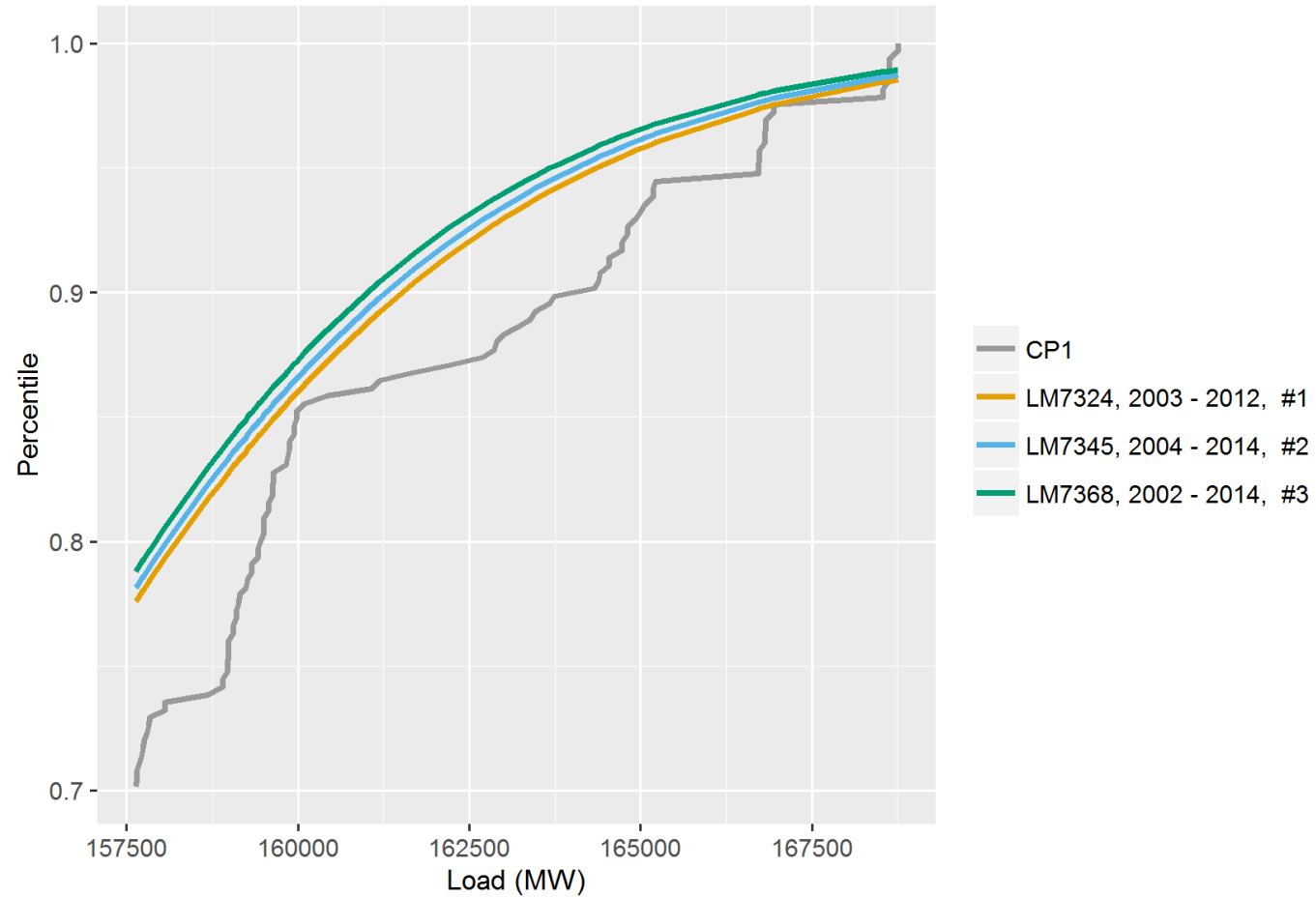
Load Forecast Model CP1 Distribution - 2017 vs 2018



Approach #1 Results



Approach #2 Results



- Load Model (LM) Choices
 - 7324: 2003-2012 10 YR LM
 - 7345: 2004-2014 11 YR LM
 - 7368: 2002-2014 13 YR LM
- Last year's selected LM (2003 – 2012) is one of the top candidates this year.
 - Actually, it is the best ranked LM under both approaches

- World Load Models were created using PLOTS program, observing the same historic time periods. In so doing, we consider the PJM/World diversity.
 - Uses historic Coincident Peak pattern
 - World defined as MISO, NY, TVA, and VACAR.



LM #7324 (2003-2012) - PJM vs World Assessment

		PJM RTO LM #7324 10 Yr Load Model - 2003 - 2012	World Region LM #7675
Month	WK #	Per-Unitized Peak	Per-Unitized Peak
June	5	0.8261	0.8736
June	6	0.9399	0.9418
June	7	0.8894	0.9541
July	8	0.8735	0.9157
July	9	0.9034	0.9556
July	10	1.0000	1.0000
July	11	0.9301	0.9739
August	12	0.9654	0.9943
August	13	0.9413	0.9528
August	14	0.8647	0.8780
August	15	0.8336	0.8675



LM #7345 (2004-2014) - PJM vs World Assessment

		PJM RTO LM #7345 11 Yr Load Model - 2004 - 2014	World Region LM #7688
Month	WK #	Per-Unitized Peak	Per-Unitized Peak
June	5	0.8425	0.8785
June	6	0.9078	0.9419
June	7	0.9398	0.9541
July	8	0.8744	0.8891
July	9	0.9002	0.9281
July	10	1.0000	1.0000
July	11	0.9226	0.9446
August	12	0.9654	0.9943
August	13	0.9360	0.9830
August	14	0.8440	0.9001
August	15	0.8113	0.8688



LM #7368 (2002-2014) - PJM vs World Assessment

		PJM RTO LM #7368 13 Yr Load Model - 2002 - 2014	World Region LM #7697
Month	WK #	Per-Unitized Peak	Per-Unitized Peak
June	5	0.8386	0.8750
June	6	0.8871	0.9090
June	7	0.9398	0.9541
July	8	0.8806	0.9053
July	9	0.9073	0.9308
July	10	1.0000	1.0000
July	11	0.9296	0.9509
August	12	0.9654	0.9943
August	13	0.9338	0.9818
August	14	0.8617	0.9157
August	15	0.8321	0.9033



Historical Peak Load Coincidence PJM / World

Year	PJM Peak - Actual Date	World Peak - Actual Date	Peak Coincidence?
1998	21-Jul-98	21-Jul-98	Yes
1999	30-Jul-99	28-Jul-99	No
2000	9-Aug-00	31-Aug-00	No
2001	9-Aug-01	8-Aug-01	No
2002	1-Aug-02	1-Aug-02	Yes
2003	21-Aug-03	14-Aug-03	No
2004	3-Aug-04	2-Aug-04	No
2005	26-Jul-05	3-Aug-05	No
2006	2-Aug-06	1-Aug-06	No
2007	8-Aug-07	8-Aug-07	Yes
2008	9-Jun-08	21-Jul-08	No
2009	10-Aug-09	10-Aug-09	Yes
2010	7-Jul-10	4-Aug-10	No
2011	21-Jul-11	20-Jul-11	No
2012	17-Jul-12	17-Jul-12	Yes
2013	18-Jul-13	18-Jul-13	Yes
2014	7-Jan-14	7-Jan-14	Yes
2015	28-Jul-15	28-Jul-15	Yes
2016	11-Aug-16	21-Jul-16	No
2017	19-Jul-17	20-Jul-17	No

In the last 20 years, PJM and the World **have not peaked** on the same day 12 times.



LM #7324 (2003-2012) - Switching of World peak week

		PJM RTO LM #7324 10 Yr Load Model - 2003 - 2012	World Region LM #7675
Month	WK #	Per-Unitized Peak	Per-Unitized Peak
July	8	0.8735	0.9157
July	9	0.9034	0.9556
July	10	1.0000	0.9739
July	11	0.9301	1.0000

World peak week is now on Week 11. Originally, it was in Week 10.

- PJM recommendation to RAAS on selection of historical time period for load model:
 - **Use 10yr (2003-2012, #7324) Load Model for 2019 RRS Base Case and switch World peak to a different July week so that PJM and World peak on the same month but not on the same week.**
 - It was used in the last 3 RRS (2016, 2017, and 2018)
 - It is the best ranked LM under both approaches
 - Switch in World peak week is performed to match historical diversity observed between PJM and World