City of Tallahassee
Your Own Utilities℠

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FPSC - COMMISSION CLERK

#1 Public Utility in America

Electric & Gas Utility | 2602 Jackson Bluff Road | Tallahassee | FL | 32304 | 850-891-4968

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May 12, 2020

Clerk's Office
State of Florida Public Service Commission

Dear Sir/Madam:

The following pages are the City of Tallahassee Utilities' responses to the "DN 20200000-OT - Review of the 2020 Ten-Year Site Plans for Florida's Electric Utilities - Data Request #1" pursuant to the request received from Florida Public Service Commission (FPSC) Staff member Ms. Patti Zellner. Please note that copies of all narrative and non-narrative responses have been separately provided to Mr. Doug Wright and Mr. Donald Phillips in the FPSC's Division of Engineering via e-mail per Ms. Zellner's request.

If you should have any questions regarding this report, please feel free to contact me at (850) 891-3130 or paul.clark@talgov.com. Thank you.

Sincerely,

Paul D. Clark, II
Principal Engineer

Attachments

# Narrative Responses

## General Items

1. Please provide an electronic copy of the Company's Ten-Year Site Plan (TYSP) for the period 2020-2029 (current planning period) in PDF format.

   *An electronic copy of the City of Tallahassee Utilities' (TAL) TYSP was filed with the Commission Clerk and submitted to Florida Public Service Commission (FPSC) staff on April 1, 2020.*

2. Please provide an electronic copy of all schedules and tables in the Company's current planning period TYSP in Microsoft Excel format.

   *An electronic copy of all TAL's TYSP schedules and tables submitted to FPSC staff on April 1, 2020.*

3. Please refer to the Microsoft Excel document accompanying this data request titled "Data Request #1 – Excel Tables," (Excel Tables Spreadsheet). Please provide, in Microsoft Excel format, all data requested in the Excel Tables Spreadsheet for those sheets/tabs identified as associated with this question. If any of the requested data is already included in the Company's current planning period TYSP, state so on the appropriate form.

   *All TAL data requested for those sheets/tabs identified as associated with this question are being submitted in Microsoft Excel format accompanying and attached this document's submission to FPSC staff.*

## Environmental Compliance Costs

4. Please explain if the Company assumes $CO_2$ compliance costs in the resource planning process used to generate the resource plan presented in the Company's current planning period TYSP. If the response is affirmative:

   a. Please identify the year during the current planning period in which $CO_2$ compliance costs are first assumed to have a non-zero value.

      *TAL did not include any assumption for $CO_2$ compliance costs in the resource planning process used to generate the resource plan presented in its 2020 TYSP.*

   b. **[Investor-Owned Utilities Only]** Please explain if the exclusion of $CO_2$ compliance costs would result in a different resource plan than that presented in the Company's current planning period TYSP.

      *Not applicable. TAL is a municipal utility.*

   c. **[Investor-Owned Utilities Only]** Please provide a revised resource plan assuming no $CO_2$ compliance costs.

      *Not applicable. TAL is a municipal utility.*

## Flood Mitigation

5. Please explain the Company's planning process for flood mitigation for current and proposed power plant sites and transmission/distribution substations.

   *TAL is required to follow the U.S. Environmental Protection Agency's (EPA) stormwater permit process as part of the National Pollutant Discharge Elimination System (NPDES) program. This is also as a part of the Site Certification application process for proposed power plant sites. During the permitting process, TAL has an engineering firm design the site to address potential flooding conditions. After the permit is issued, TAL's flood mitigation plan is simply to build according to the engineering firm's final site design. Any subsequent change needed on the plant site that may require modification of the site's storm water system triggers a new design review.*

   *The potential for flooding is also a consideration in the siting of new transmission and distribution substations. All TAL's new and most of its older transmission/distribution substations are constructed outside flood plains. TAL does have a few older stations within flood plains, but the equipment in the stations are constructed high enough that flood water cannot reach them.*

## Load & Demand Forecasting

6. **[Investor-Owned Utilities Only]** Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing, on a system-wide basis, the hourly system load in megawatts (MW) for the period January 1 through December 31 of the year prior to the current planning period. For leap years, please include load values for February 29. Otherwise, leave that row blank. Please also describe how loads are calculated for those hours just prior to and following Daylight Savings Time.

   *Although TAL is not an investor-owned utility, hourly load data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

7. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on the monthly peak demand experienced during the three-year period prior to the current planning period, including the actual peak demand experienced, the amount of demand response activated during the peak, and the estimated total peak if demand response had not been activated. Please also provide the day, hour, and system-average temperature at the time of each monthly peak.

   *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

8. Please identify the weather station(s) used for calculation of the system-wide temperature for the Company's service territory. If more than one weather station is utilized, please describe how a system-wide average is calculated.

   *System-wide temperature for TAL's service territory is obtained from the National Weather Service's Tallahassee Regional Airport (KTLH) weather station.*

9. Please explain, to the extent not addressed in the Company's current planning period TYSP, how the reported forecasts of the number of customers, demand, and total retail energy sales were developed. In your response, please include the following information: methodology, assumptions, data sources, third-party consultant(s) involved, anticipated forecast accuracy, and any difference/improvement made compared with those forecasts used in the Company's most recent prior TYSP.

   *TAL's 2020 Load Forecast is jointly prepared by TAL staff and nFront Consulting, LLC, ("nFront") using essentially the same methodology and data sources as the most recent prior TYSP. The forecast relies upon an econometric forecast of monthly customer counts and sales by major customer classification, with the forecast for certain large loads reflecting a weather-normalized base adjusted in future years only for expected changes due to new facilities or other factors. The total of these forecasts is adjusted for estimated losses to derive a forecast of system NEL. Similarly, monthly peak demand is derived from forecasted NEL and estimated load factors, based on an econometric analysis of historical load factors and long-term averages of peak day weather conditions. Annual NEL and seasonal peak demands are calculated from the resulting monthly values.*

   *Historical and projected economic and demographic data is obtained from Woods and Poole Economics (W&P); historical and projected population data is obtained from the University of Florida's Bureau of Economic Research (BEBR); historical taxable sales data is obtained from the Florida Department of Revenue; and housing market indicators are obtained from the Bureau of the Census and other sources. A consensus forecast of economic and demographic data is developed based on an average of the growth rates from the W&P and BEBR datasets. Taxable sales data are forecasted based on its estimated relationship with retail sales data reported and forecasted by W&P. Weather data is obtained from the National Climatic Data Center; future weather conditions are assumed to be equal to recent average weather conditions. Finally, the price of electricity is derived from TAL's billing records and forecasted based on projections published by the Energy Information Administration (EIA) in the 2019 Annual Energy Outlook (AEO).*

10. Please identify all closed and open Florida Public Service Commission (FPSC) dockets and all non-docketed FPSC matters which were/are based on the same load forecast used in the Company's current planning period TYSP.

    *There are no open or closed FPSC dockets or non-docketed FPSC matters which were/are based on the same load forecast used in TAL's 2020 TYSP.*

11. Please explain if your Company evaluates the accuracy of its forecasts of customer growth and annual retail energy sales presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.

    *As part of its forecast process TAL and nFront first prepare an analysis of the accuracy of its prior year forecast models for customer growth and annual retail energy sales for the most recent fiscal year.*

    a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Microsoft Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

       *The analysis compares the forecasts of customer growth and annual retail energy sales for the most recent fiscal year both before and after updating assumed values of all explanatory variables for their most recent estimates/known values. In this way, errors that result from incorrect assumptions about the future (e.g., optimistic economic conditions, warmer or colder weather, etc.) are separated from remaining errors due to model error. The most recent example of this analysis spreadsheet is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls" in tabs "Table II-1" through "Table II-7".*

    b. If your response is negative, please explain why.

       *Not applicable.*

12. Please explain if your Company evaluates the accuracy of its forecasts of Summer/Winter Peak Energy Demand presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.

    *The same type of analysis described in TAL's response to TYSP SDR question #11 above is performed for its forecasts of Summer/Winter Peak Energy Demand.*

    a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Microsoft Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

       *The results of the analysis of the accuracy of TAL's forecasts of Summer/Winter Peak Energy Demand are also provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls" in tabs "Table II-1" through "Table II-7".*

b. If your response is negative, please explain why.

*Not applicable.*

13. Please explain any historic and forecasted trends in:

a. **Growth of customers**, by customer type (residential, commercial, industrial) as well as Total Customers, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

*TAL's customer count growth has picked up somewhat relative to the period immediately following the Great Recession that began in the U.S. officially in December 2007 and lasted until June 2009. Residential and commercial customer compound average growth rates (CAGR) were 0.5% and -0.1%, respectively, over 2008-2013; growth rates over 2013-2019 have increased to 1.1% and 0.7%, respectively. These growth rates can be compared to pre-Great Recession CAGRs for residential and commercial customer counts of 2.4% and 2.3%, respectively, over 1998-2007. TAL does not serve any industrial customers.*

*These variations in customer count growth correlate well to variations in rates of change in Leon County population, household formation, and economic activity. For example, total employment and average income per household both suffered declines over 2008-2013 (0.4% and 1.0% per year, respectively) but have rebounded strongly since 2013, having increased by 1.7% and 1.6% per year, respectively. Leon County population growth has been fairly steady since 2008 at approximately 0.8% per year, though household counts grew more slowly during 2008-2013 (1.1% per year) than the most recent period (1.3% per year).*

*The 2020 Forecast incorporates economic and demographic projections for Leon County based on a blend of W&P and BEBR, reflecting projected CAGRs for population, household counts, employment, and average income of 0.8%, 0.8%, 1.1%, and 1.2%, respectively, over 2020-2030. This population projection represents a slightly lower growth rate than used in the 2019 Ten Year Site Plan, which was based on a similar blend of W&P and BEBR's 2018 population forecast and reflected a CAGR of 1.0% for the same ten-year period.*

*As a result of the expected continuation of favorable economic conditions, growth rates for residential and commercial counts are expected to continue growing at rates that are similar to the most recent historical period, with projected growth rates of 0.9% and 1.0% per year, respectively.*

b. **Average KWh consumption per customer**, by customer type (residential, commercial, industrial), and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

*Electricity use per customer for both residential and commercial customers has declined since the outset of the Great Recession. However, over the last few years, this rate of*

*decline has slowed for commercial classes, and average residential usage has stabilized, on a weather-normalized basis. The primary drivers of this decline include the following:*

- *Increases in end use efficiency standards, particularly for HVAC systems, that have been filtering into the stock of equipment through replacements and new builds*
- *Modifications to the State of Florida Energy Efficiency Code for Building Construction*
- *TAL's demand-side management (DSM) and conservation/energy efficiency (EE) programs (discussed in Section 2.1.3)*
- *Significant increases in the price of electricity on TAL's system (similar to increases across most Florida utilities) over 2006-2009, which resulted primarily from the run-up in the cost of natural gas*
- *Economic conditions since the outset of the Great Recession*

*Changes to end use efficiency standards and building code changes over the last two decades continue to gradually diffuse into the stock of end uses and buildings. The impact of the HVAC efficiency standard change effective in 2006 is estimated to have been particularly impactful in reducing consumption over 2006 to the present and to be essentially fully diffused by approximately 2021.*

*The last two factors above have improved considerably over the last few years. Natural gas prices have returned to the generally low prices that were typical of the 1990s, resulting in much lower cost of electricity to TAL's customers. Economic conditions in the U.S. and across the Florida peninsula have improved, which should also be supportive of electric consumption going forward, though the efficiency improvements discussed above and TAL's DSM/EE programs are projected to be dominant factors.*

*TAL's load forecast reflects continued decreases in use per customer for both residential and commercial classes which offsets, to some degree, robust growth in residential and commercial customer counts.*

c. **Total Billed Retail Energy Sales** (GWh) **[for FPL]**, or
**Net Energy for Load** (GWh) **[for other companies]**, identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends. Please include a detailed discussion of how the Company's demand management program(s) and conservation/energy-efficiency program(s) impact the growth/decline of the trends.

*The issues and trends discussed above have a direct contribution to similar historical and projected changes in TAL's NEL. Improved economic conditions, increased in-migration, reduced and slowly escalating electricity costs, and the impending diffusion of historical energy efficiency standards are expected to contribute to more robust NEL growth.*

*Historically, changes in the federal appliance/equipment efficiency standards, state building efficiency code and actions taken by customers on their own to reduce energy use have made greater contributions to the change in NEL than the customer participation in TAL's DSM/EE financial incentive programs. But TAL remains committed to offering these DSM/EE programs to help improve the efficiency of customers' end-use of energy resources when such improvements provide a measurable economic and/or environmental*

*benefit to the customers and TAL's utility services. TAL's forecast reflects that continued commitment. Current and new DSM/EE program offerings will be considered during the conduct of TAL's next IRP study and development of its 2050 Clean Energy Plan which will commence during the planning period for 2021-2030.*

14. Please explain any historic and forecasted trends in each of the following components of Summer/Winter Peak Demand:

    a. **Demand Reduction due to Conservation and Self Service**, by customer type (residential, commercial, industrial) as well as Total Customers, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

    *Estimates of the historical demand and energy savings from customer participation in TAL's DSM/EE programs are below those projected in its last IRP study. Contributing factors include changes in the federal appliance/equipment efficiency standards and state building efficiency code and the steps many customers have taken steps on their own to reduce their energy use and costs in response to the Great Recession - without taking advantage of the financial incentives provided through the TAL's DSM/EE programs. These factors combined have reduced historical Summer/Winter Peak Demand and thus the potential for further reductions from customer participation in the DSM/EE programs in the future. As a result, past and present projections have reflected a downward trend in DSM/EE needs for the coming years.*

    *But TAL remains committed to offering DSM/EE programs that provide a measurable economic, reliability and/or environmental benefit to its customers and TAL's utility services. TAL's forecast reflects that continued commitment. Current and new DSM/EE program offerings will be considered and likely expanded during the conduct of TAL's next IRP study and development of its 2050 Clean Energy Plan which will commence during the planning period for 2021-2030.*

    *TAL customers' utilization of self-service generation has historically been low and thus has had little historical impact. Therefore, to date TAL has not forecasted significant associated impacts from self-service generation in the future. TAL will continue to monitor trends in its customers' use of self-service generation and incorporate adjustments to its forecasts that any observed changes may necessitate.*

    b. **Demand Reduction due to Demand Response,** by customer type (residential, commercial, industrial), and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

    *TAL previously offered a demand response (DR) program called "PeakSmart" geared toward medium-to-large commercial customers. The program had a subscription limit of 13 MW under an associated rider rate schedule. Participation in the program was low and therefore never called upon to contribute to historical seasonal peak demand reductions. Consequently, the program was suspended and there are currently no participants.*

*In 2018, TAL entered into a multi-year contract for continued DR implementation to build on its experience with the PeakSmart program and expand it to residential and small commercial customers. The vendor team conducted a series of tests to demonstrate the potential of the new demand response optimization and management system (DROMS) and several WiFi-enabled thermostats. Based on initial findings, TAL launched a Smart Thermostat Rebate program in 2019, providing incentives for electric customers to purchase and install eligible WiFi-enabled thermostats. TAL envisions that the smart thermostats purchased through the rebate program may be used to facilitate expansion of TAL's DR efforts in the future.*

*TAL remains committed to developing a DR program to offer measurable economic, reliability and/or environmental benefit to its customers and TAL's utility services. TAL's forecast reflects that continued commitment. DR program offerings will be considered during the conduct of TAL's next IRP study and development of its 2050 Clean Energy Plan which will commence during the planning period for 2021-2030.*

c. **Total Demand**, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

*System peak demand is volatile, being impacted by weather and other conditions to a greater extent on a year-to-year basis than economic conditions and other long-term factors that impact energy consumption.*

d. **Net Firm Demand,** by the sources of peak demand appearing in Schedule 3.1 and Schedule 3.2 of the current planning period TYSP, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

*Net firm demand has grown considerably over the last several years as a result of the same factors discussed above. TAL intends to utilize DSM/EE resources, including demand response, to offset a significant portion of the anticipated growth in peak demand over the forecast horizon, resulting in only very modest growth. TAL does not expect that the impact of self-service due to distributed solar generation on peak demand will be significant over the next 10 years.*

15. Please explain any anomalies caused by non-weather events with regard to annual historical data points for the period 10 years prior to the current planning period that have contributed to the Company's Summer/Winter Peak Energy Demand.

*TAL has observed no such anomalies.*

16. Please refer to the Company's respective Utility Perspective section in the Commission's "Review of the 2019 Ten-Year Site Plans of Florida's Electric Utilities." Please answer your Company's respective questions below regarding the growth of customers and retail energy sales, of which the associated figure in the Utility Perspective section is based on the values reported on Schedule 2 of your respective Company's 2019 TYSP:

**TAL:**

a. Please explain, in general, why the Company's growth rate of retail energy sales lags the growth rate of customers starting in 2012.

*First, this period has been impacted by the diffusion of higher efficiency end uses, largely resulting from federally mandated efficiency standards and the rapid decline in cost of higher efficiency lighting technology. Second, TAL believes the commercial class has been impacted by the rapid increase in the adoption of e-commerce, which appear to have impacted sales more so than customer counts historically.*

b. Please explain why the divergence in the growth rates of customers and retail energy sales is projected to increase during the forecast period.

*The divergence between total customer and retail sales "Percent Change Since 2009" (Figure 48 in the FPSC's "Review of the 2019 Ten-Year Site Plans of Florida's Electric Utilities") increases during the forecast period because the annual growth rate of customers continues to be higher than for sales over the forecast period. However, the difference in annual growth rates of customers versus sales actually converges somewhat over the forecast period. The compound average growth rates (CAGR) over 2009-2018 of customers and sales are 0.8% and 0.2%, respectively, while over 2019-2028, these same CAGRs are 1.0% and 0.5%, respectively. The annual growth rate differential continues over the forecast period as a result of (i) the continuation of diffusion of higher efficiency end uses, albeit at a reduced rate (as saturation of many of these end uses appears likely over the near-term portion of the forecast horizon) and (ii) the continued adoption of e-commerce, but again at a reduced rate.*

c. Please identify the drivers which contribute to the sharp fall in the growth rate of retail energy sales in the period 2010-2013, and the decline in the growth rate in 2017, respectively.

*In addition to the factors discussed above, the 2010-2013 period was accompanied by a considerable reduction in economic activity associated with the Great Recession. While the recession itself ended in 2019, growth rates of all economic variables were muted, or in some cases remained negative, until approximately 2013. Regarding 2017, TAL believes this may be a function primarily of weather conditions. Winter 2016/2017 was among the mildest winters on record, while summer 2017 was also milder than the preceding year.*

17. **[Investor-Owned Utilities Only]** If not included in the Company's current planning period TYSP, please provide load forecast sensitivities (high band, low band) to account for the uncertainty inherent in the base case forecasts in the following TYSP schedules, as well as the methodology used to prepare each forecast:

    a. Schedule 2.1 – History and Forecast of Energy Consumption and Number of Customers by Customer Class.
    b. Schedule 2.2 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.
    c. Schedule 2.3 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.
    d. Schedule 3.1 - History and Forecast of Summer Peak Demand.
    e. Schedule 3.2 - History and Forecast of Winter Peak Demand.
    f. Schedule 3.3 - History and Forecast of Annual Net Energy for Load.
    g. Schedule 4 - Previous Year and 2-Year Forecast of Peak Demand and Net Energy for Load by Month.

    *Although TAL is not an investor-owned utility, all the schedules requested above were provided in the file entitled "2020 TAL TYSP Tables and Schedules Share File.xls" submitted to FPSC Staff via e-mail on April 1, 2020.*

18. Please discuss whether the Company included plug-in electric vehicle (PEV) loads in its demand and energy forecasts for its current planning period TYSP. If so, how were these impacts accounted for in the modeling and forecasting process?

    *TAL did not explicitly include expected plug-in electric vehicle (PEV) loads in its demand and energy forecasts for its current planning period TYSP.*

19. Please discuss the methodology and the assumptions (or, if applicable, the source(s) of the data) used to estimate the number of PEVs operating in the Company's service territory and the methodology used to estimate the cumulative impact on system demand and energy consumption.

    *Due to the low adoption rate of EVs (BEV and PEV) by TAL customers, TAL continues to estimate the current number of PEVs in its Electric Utility service area based on vehicle registrations within Leon County as provided by the State of Florida Department of Highway Safety and Motor Vehicles.*

    *Due to the low penetration of PEVs within the service area, TAL has not performed any formal studies to estimate the cumulative impact on system demand and energy consumption from the impacts of PEV charging. To the extent that PEV loads are part of the historical load, TAL's forecast methodology would include a future load impact from PEVs. TAL does not, however, specifically model PEV loads in its forecast process.*

    *TAL does foresee the possibility for development of such assumptions under TAL's 2050 Clean Energy Plan which will be under development during the planning period 2021-2030.*

20. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing estimates of the requested information within the Company's service territory for the current planning period. "Quick-charge" PEV charging stations are those that require a service drop greater than 240 volts and/or use three-phase power.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

21. Please describe any Company programs or tariffs currently offered to customers relating to PEVs, and describe whether any new or additional programs or tariffs relating to PEVs will be offered to customers within the current planning period.

    *TAL currently offers a "Nights and Weekends" time-of-use rate that would incentivize customers with PEVs receiving service under the associated tariff to defer charging to off-peak periods. TAL does foresee the possibility for development of such programs or tariffs under TAL's 2050 Clean Energy Plan which will be under development during the planning period 2021-2030.*

    a. Of these programs or tariffs, are any designed for or do they include educating customers on electricity as a transportation fuel?

       *No, TAL does not currently have any such programs or tariffs. However, TAL does foresee the possibility for development of such customer education or engagement under TAL's 2050 Clean Energy Plan which will be under development during the planning period 2021-2030.*

    b. Does the Company have any programs where customers can express their interest or expectations for electric vehicle infrastructure as provided for by the Utility, and if so, please describe in detail.

       *No, TAL does not currently have any such programs. However, TAL does foresee the possibility for development of such customer education or engagement under TAL's 2050 Clean Energy Plan which will be under development during the planning period 2021-2030.*

22. Please describe how the Company monitors the installation of PEV public charging stations in its service area.

    *TAL monitors public EV charging stations within the service territory via the electrical permitting process by the local jurisdiction Building Department.*

23. Please describe any instances since January 1 of the year prior to the current planning period in which upgrades to the distribution system were made where PEVs were a contributing factor.

    *Since January 1, 2019 TAL has made no upgrades to its distribution system in which PEV's were a contributing factor.*

24. Has the Company conducted or contracted any research to determine demographic and regional factors that influence the adoption of PEVs applicable to its service territory? If so, please describe in detail the methodology and findings.

    *No, TAL has neither conducted nor contracted for any research as described above. However, TAL does foresee the possibility for development of such programs under TAL's 2050 Clean Energy Plan which will be under development during the planning period 2021-2030.*

25. What processes or technologies, if any, are in place that allow the Company to be notified when a customer has installed a PEV charging station in their home?

    *TAL would only be notified of in-home PEV charging if an electrical permit is issued for the installation.*

26. **[FEECA Utilities Only]** For each source of demand response, please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing annual customer participation information for 10 years prior to the current planning period. Please also provide a summary of all sources of demand response using the table.

    *Not applicable. TAL is not a FEECA utility.*

27. **[FEECA Utilities Only]** For each source of demand response, please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing annual usage information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

    *Not applicable. TAL is not a FEECA utility.*

28. **[FEECA Utilities Only]** For each source of demand response, please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing annual seasonal peak activation information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

    *Not applicable. TAL is not a FEECA utility.*

## Generation & Transmission

29. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each utility-owned traditional generation resource in service as of December 31 of the year prior to the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For capacity factor, use the net capacity as a basis.

    *The requested data was provided as "Table 1.1/Schedule 1" in the file entitled "2020 TAL TYSP Tables and Schedules Share File.xls" submitted to FPSC Staff via e-mail on April 1, 2020.*

30. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each utility-owned traditional generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

    *The requested data was provided as "Table 3.3/Schedule 8" in the file entitled "2020 TAL TYSP Tables and Schedules Share File.xls" submitted to FPSC Staff via e-mail on April 1, 2020.*

    a. For each planned utility-owned traditional generation resource in the table, provide a narrative response discussing the current status of the project.

        *TAL has committed to a fifth 18.5 MW RICE generating unit to be located at its existing Hopkins Plant site and expected to be in service by April 2020. The unit will be named "Hopkins IC 5".*

        *For the purposes of TAL's 2020 TYSP report, TAL has also identified the addition of a Wartsila 18V50SG reciprocating internal combustion engine (RICE) generator (similar to the TAL's existing Hopkins IC 1-4 and planned Hopkins IC 5) to satisfy planning reserve requirements identified in 2028-2029. The timing, site, type and size of this new power supply resource may vary as the nature of the need becomes better defined. Alternatively, this addition could be a generator(s) of a different type/size at an existing or different site or a peak season purchase.*

31. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each utility-owned renewable generation resource in service as of December 31 of the year prior to the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For capacity factor, use the net capacity as a basis.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

32. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each utility-owned renewable generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

    a. For each planned utility-owned renewable resource in the table, provide a narrative response discussing the current status of the project.

        *The planned utility-owned renewable resources for the period 2020 through 2029 are multiple small distributed renewable resources (< 250 kW per installation), such as rooftop solar panels. The planned systems will be installed as financial constraints allow.*

33. Please list and discuss any planned utility-owned renewable resources that have, within the past year, been cancelled, delayed, or reduced in scope. What was the primary reason for the changes? What, if any, were the secondary reasons?

    *TAL delayed the installation of a small distributed renewable resource (< 250 kW), rooftop solar PV project. The planned system is part of a larger project for a City owned building renovation. The contracting for the general contractor was delayed and therefore the Solar PV project has been delayed.*

34. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each purchased power agreement with a traditional generator still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.

    *TAL has no existing PPAs from traditional sources.*

35. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each purchased power agreement with a traditional generator pursuant to which energy will begin to be delivered to the Company during the current planning period.

    *TAL has no planned PPAs from traditional sources.*

    a. For each purchased power agreement in the table, provide a narrative response discussing the current status of the project.

        *Not applicable.*

36. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each purchased power agreement with a renewable generator still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

37. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each purchased power agreement with a renewable generator pursuant to which energy will begin to be delivered to the Company during the current planning period.

    *TAL has no planned PPAs from renewable sources.*

    a. For each purchased power agreement in the table, provide a narrative response discussing the current status of the project.

       *Not applicable.*

38. Please list and discuss any purchased power agreements with a renewable generator that have, within the past year, been cancelled, delayed, or reduced in scope. What was the primary reason for the change? What, if any, were the secondary reasons?

    *TAL did not have any planned PPA renewable resources within the past year that were cancelled, delayed, or reduced in scope.*

39. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each power sale agreement still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered from the Company to a third-party during said year.

    *TAL has no existing power sale agreements (PSA).*

40. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on each power sale agreement pursuant to which energy will begin to be delivered from the Company to a third-party during the current planning period.

    *TAL has no planned PSAs.*

    a. For each power sale agreement in the table, provide a narrative response discussing the current status of the agreement.

       *Not applicable.*

41. Please list and discuss any long-term power sale agreements within the past year that were cancelled, expired, or modified.

    *TAL did not have any long-term PSAs within the past year that were cancelled, expired or modified.*

42. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing the actual and projected annual energy output of all renewable resources on the Company's system, by source, for the 11-year period beginning one year prior to the current planning period.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

43. **[Investor-Owned Utilities Only]** Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all of the Company's plant sites that are potential candidates for utility-scale (>2 MW) solar installations.

    *Not applicable. TAL is a municipal utility.*

44. Please describe any actions the Company engages in to encourage production of renewable energy within its service territory.

    *TAL continues to promote solar PV through the Net Metering Program, which offers the customer credits at the full retail rate for energy returned to the grid. Also, through TAL's Energy Efficiency Loan program, a customer may borrow up to $20,000 for a 10-yr term for the purchase and installation of a Solar PV system installed at the customer's service point.*

45. **[Investor-Owned Utilities Only]** Please discuss whether the Company has been approached by renewable energy generators during the year prior to the current planning period regarding constructing new renewable energy resources. If so, please provide the number and a description of the type of renewable generation represented.

    *Not applicable. TAL is a municipal utility.*

46. Does the Company consider solar PV to contribute to one or both seasonal peaks for reliability purposes? If so, please provide the percentage contribution and explain how the Company developed the value.

    *Due to the intermittent nature of solar PV, TAL does not currently consider any contribution from such facilities to either seasonal peak for reliability purposes. Review of the energy delivered from the 20 $MW_{ac}$ and the more recent 42 $MW_{ac}$ solar PPAs has shown that solar PV production does not coincide with the seasonal morning peaks and does not provide a consistent contribution to afternoon/evening peaks. TAL continues to monitor and analyze the contribution of solar PV to seasonal peaks.*

47. Please identify whether a declining trend in costs of energy storage technologies has been observed by the Company.

    *TAL has observed a declining trend in costs of energy storage technologies, specifically in the Lithium Ion technologies. The primary driver of the downward cost pressure is the EV manufacturers demand for longer range batteries. TAL continues to monitor the cost trends through several different means, including but not limited to the Energy Storage Association.*

48. Briefly discuss any progress in the development and commercialization of non-lithium battery storage technology the Company has observed in recent years.

    *TAL has observed that development of the Lead Acid battery storage technology has progressed as the UPS and the UTE manufacturers continue to promote that technology. Flow Batteries does not appear to have other manufacturers or users besides the electric industry to promote that technology. TAL may participate in studies regarding the different ES technologies but is not on the position to fund R&D research for the ES market.*

49. Briefly discuss any considerations reviewed in determining the optimal positioning of energy storage technology in the Company's system (e.g., Closer to/further from sources of load, generation, or transmission/distribution capabilities).

    *TAL continues to study the deployment of ES. At transmission voltage levels, TAL expects that ES would normally serve the purpose of smoothing the intermittent generation of renewable energy resources such as solar PV. TAL expects that deployment of ES at the distribution levels closer to the load centers might offer some flexibility with avoiding, reducing and/or deferring distribution system investments.*

50. Please explain whether ratepayers have expressed interest in energy storage technologies. If so, how have their interests been addressed?

    *To date, a small number of TAL's ratepayers have expressed a general interest in energy storage technologies for residential use. TAL has met with some groups to determine their level of interest and found that ratepayers are not willing to invest in energy storage without subsidies.*

51. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all energy storage technologies that are currently either part of the Company's system portfolio or are part of a pilot program sponsored by the Company.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

52. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all energy storage technologies planned for in-service during the current planning period either as part of the Company's system portfolio or as part of a pilot program sponsored by the Company.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

53. Please identify and describe the objectives and methodologies of all energy storage pilot programs currently running or in development with an anticipated launch date within the current planning period. If the Company is not currently participating in or developing energy storage pilot programs, has it considered doing so? If not, please explain.

*TAL has considered the development of a pilot Home ES storage project (<10KW) where the ES would be coupled with residential solar PV. The ES could be deployed either behind the meter and in front of the meter to depending on which arrangement brings better value to the distribution system. It is anticipated that this program will be launched in Q4 of 2020.*

a. Please discuss any pilot program results, addressing all anticipated benefits, risks, and operational limitations when such energy storage technology is applied on a utility scale (> 2 MW) to provide for either firm or non-firm capacity and energy.

*TAL does not have any plans for an ES pilot program of great than 2 MW.*

b. Please provide a brief assessment of how these benefits, risks, and operational limitations may change over the current planning period.

*Not applicable.*

c. Please identify and describe any plans to periodically update the Commission on the status of your energy storage pilot programs.

*TAL has no plans to update the Commission on the status of pilot programs outside of the normal TYSP and Supplemental Data request cycles.*

54. If the Company utilizes non-firm generation sources in its system portfolio, please detail whether it currently utilizes or has considered utilizing energy storage technologies to provide firm capacity from such generation sources. If not, please explain.

*TAL does utilize 62 $MW_{ac}$ of non-firm generation from Solar PV. TAL has participated in a Department of Energy Grant, named FAASSTeR, to study the accelerated deployment of Solar PV and Energy Storage within the state. A part of the FAASSTeR project was to study the effects on the bulk electric system if ES is coupled or decoupled from the Solar PV. The study's initial indications show that TAL could benefit from ES as a non-wire solution to distribution constraints, if any exist, and ES could help mitigate the "Duck Curve" issue as the penetration of Solar PV increases on the bulk electric system.*

a. Based on the Company's operational experience, please discuss to what extent energy storage technologies can be used to provide firm capacity from non-firm generation sources. As part of your response, please discuss any operational challenges faced and potential solutions to these challenges.

*The initial findings from the FASSTeR project is that ES can provide smoothing to help decrease the effects of intermittency from solar PV and can be used for meeting peak*

*demand on the bulk electric system. The initial findings also revealed that the cost of ES remains too high for TAL to deploy without bringing rate harm to the customers.*

55. Please identify and describe any programs the Company offers that allows its customers to contribute towards the funding of specific renewable projects, such as community solar programs.

*TAL offers a community solar program in the form of a solar subscription program from the 20 $MW_{ac}$ Solar PV project. The program, named "Solar Choice", offers the customer the choice to replace up to 100% of their Energy Cost Recovery Charge with a flat 5-cents/kwh charge for 20 years. This program is designed to pay for the PPA cost of the 20 $MW_{ac}$ Solar Project without subsidization by non-participating customers. The program is fully subscribed and there is a waiting list for subscriptions to the 42 $MW_{ac}$ project (which began commercial operations in December 2019). The Solar Choice program is open to residential and commercial customers.*

a. Please describe any such programs in development with an anticipated launch date within the current planning period.

*TAL does not anticipate the development of new customer participation programs.*

56. Please identify and discuss the Company's role in the research and development of utility power technologies. As part of this response, please describe any plans to implement the results of research and development into the Company's system portfolio and discuss how any anticipated benefits will affect your customers.

*TAL does not fund research but does participate in matching grant opportunities by partnering with other municipal utilities and colleges and universities. One such grant opportunity is an initiative to increase the deployment of solar and storage within the state by municipals. The project, Florida Alliance for Accelerating Solar and Storage Technology Readiness (FAASSTeR) was formed to carry out a 3-year project to study and assist in developing pathways for successful expansion of grid-integrated solar, energy storage, and other distributed energy resources in Florida in a way that maximizes value and reduces risk. The team includes a Tallahassee-based technology and R&D firm, Nhu Energy, Inc, working closely with the Florida Municipal Electric Association and the Florida Office of Energy, to oversee and guide the project, supported in research and analysis by the National Renewable Energy Laboratory, Lawrence Berkeley National Laboratory, and the Southern Alliance for Clean Energy, and Florida's municipal utilities. The project scope includes performing Florida-specific studies and analysis and providing support to utilities, with the aim of enabling and increasing the overall value derived from growth in the deployment of solar, energy storage, and other distributed energy resources (DER) integrated into the Florida electric power system.*

57. **[Investor-Owned Utilities Only]** Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing, on a system-wide basis, the historical annual average as-available energy rate in the Company's service territory for the 10-year period prior to the current planning period. Also, provide the projected annual average as-available energy rate in the Company's service territory for the current planning period. If the Company uses multiple areas for as-available energy rates, please provide a system-average rate as well.

    *Not applicable. TAL is a municipal utility.*

58. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all planned traditional units with an in-service date within the current planning period. For each planned unit, provide the date of the Commission's Determination of Need and Power Plant Siting Act certification, if applicable.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

59. For each of the planned generating units, both traditional and renewable, contained in the Company's current planning period TYSP, please discuss the "drop dead" date for a decision on whether or not to construct each unit. Provide a timeline for the construction of each unit, including regulatory approval, and final decision point.

    *Since the filing of TAL's 2020 TYSP, the planned addition of Hopkins IC 5 was placed into commercial operations. For the prospective 2028 addition of another reciprocating internal combustion engine (RICE), equipment delivery time is approximately 9-12 months. The prospective RICE addition could be developed with some concurrent activities (i.e., engineering and permitting and engine procurement) followed by 10 – 12 months of construction and commissioning activities. At an existing plant ("brownfield") site would require a construction decision to be made approximately 24 months prior to the desired in-service date. This assumes:*

    - *4 months – permit application process*
    - *6-8 months permitting*
    - *4 months – procurement cycle*
    - *9-12 months delivery*
    - *10-12 months construction and commissioning*

    *The time frame above has been compressed by concurrent preliminary engineering, some procurement and permitting activities. Further schedule compression could be accomplished by buying engines prior to permitting being approved, engineering just in time for construction and starting construction before all equipment is delivered.*

    *Additional time would be required for land acquisition if the unit were to be planned for a new ("greenfield") site.*

60. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing the actual and projected capacity factors for each existing and planned unit on the Company's system for the 11-year period beginning one year prior to the current planning period.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

61. **[Investor-Owned Utilities Only]** For each existing unit on the Company's system, please provide the planned retirement date. If the Company does not have a planned retirement date for a unit, please provide an estimated lifespan for units of that type and a non-binding estimate of the retirement date for the unit.

    *Not applicable. TAL is a municipal utility.*

62. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all of the Company's steam units that are potential candidates for repowering to operation as Combined Cycle units.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

63. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all of the Company's steam units that are potential candidates for fuel-switching.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

64. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing a list of all proposed transmission lines for the current planning period that require certification under the Transmission Line Siting Act. Please also include in the table transmission lines that have already been approved, but are not yet in-service.

    *TAL has no proposed transmission lines for the current planning period that require certification under the Transmission Line Siting Act.*

## Environmental

65. Provide a narrative explaining the impact of any existing environmental regulations relating to air emissions and water quality or waste issues on the Company's system during the previous year. As part of your narrative, please discuss the potential for existing environmental regulations to impact unit dispatch, curtailments, or retirements during the current planning period.

***Air***

*TAL is subject to the requirements of the Acid Rain Program and had more than sufficient allowances of sulfur dioxide (SO2) to meet the needs of the 2019 calendar year. TAL should have enough allowances for the foreseeable future. Much of the impact from environmental regulations that TAL has been subject to in the past has been mitigated by litigation, stays, and remands. TAL recently retired several units due to the units reaching the end of useful life and not environmental regulations.*

***Regional Haze:*** *The State of Florida is in the preparation phase of addressing the second implementation period of the Regional Haze Rule, which requires states to protect visibility in 156 national parks and wilderness areas (Class I Federal Areas), as proscribed by 40 CFR 51 Subpart P – Protection of Visibility. The rule requires that states, in coordination with the Environmental Protection Agency, the National Park Service, other many other interested parties, develop and implement air quality protection plans to reduce the pollution that causes visibility impairment. Pursuant to 40 CFR 51, states must evaluate and determine whether any cost-effective emission reduction measures and strategies are available to ensure reasonable progress toward natural visibility conditions and these plans must be reevaluated every 10 years. The State of Florida must submit State Implementation Plans (SIPs) to the EPA by July 31, 2021. To develop a SIP, Florida must have extensive air quality modeling data from each facility believed to contribute to a Class I Area's visibility impairment. As the S.O. Purdom Generating Station (Purdom) is located near the St. Marks Wilderness Area, a Class I Area, TAL may need to provide air quality modeling data and technical evaluations to determine Purdom's impact on the visible impairment of St. Marks. In particular, TAL may have to examine air pollutants such as sulfur dioxide, oxides of nitrogen, and particulate matter to determine if Purdom has is a significant contributor to any visibility impacts at St. Marks. If it is so determined, TAL may be required to implement reasonable controls or measures. Reasonable controls and measures do take into consideration the cost of implementation. It is likely that in order to implement any of the controls or measures that the TAL would need to open its existing Title V permit in order to include schedules of compliance and to make the measures permanent and federally enforceable. It is hard to identify at this time what reasonable controls or measures that Purdom will be required to undertake. At worst, emissions control technology such as installing a Selective Catalytic Reduction (SCR) system could be required, or Unit 8 could be required to limit the number of hours it operates. TAL will work with FDEP to address any concerns and modeling for this rule.*

***Excess emissions SIP call:*** *Due to legal challenge, excess emissions allowance periods (periods of time such as startup, shutdown and malfunction (SSM) that excess emissions are allowed) cannot be automatically granted through rule or permit. Currently, TAL's Title V permits allow a number of minutes of excess emissions to be excluded from compliance*

*determinations of NOx, SO2, and CO pollutant emission limits. These exclusionary periods are based on a number of operating scenarios, such hot and cold start-ups. Exceedances of emissions limits happen frequently due to startup and shutdown and some exceedances are unavoidable (malfunctions). Although regulators consider these short-term exceedances, a part of normal operation, it forces facilities to operate in a manner to mitigate exceedance periods by operating units longer than necessary, so as to reduce high average pollutant concentrations and to possibly generate electricity that is not needed. This area of uncertainty limits the ability to effectively dispatch electrical generating units, increases maintenance costs, and increases fuel costs that may be passed on to the rate consumer. Additionally, TAL would be required to report each exceedance event as a deviation from permitted limits in the Annual Statement of Compliance. Currently, solutions are being researched that would ease some of the compliance burdens (ie. recordkeeping and recording) if each facility can identify alternate compliance scenarios, alternate emissions limits (during these events that are not caused by operator error or poor maintenance), and best operating practices to the maximum extent possible that would limit emissions exceedances during periods of SSM.*

***Water***

***Cooling Water Intake Structure (CWIS) Rule:*** *The CWIS Rule has no impact given that Purdom does not meet the established regulatory threshold under section 316(b) of the Clean Water Act for existing power generating facilities.*

***Effluent Limitation Guidelines:*** *Neither Purdom nor Hopkins use coal as a fuel and therefore no impacts are expected from the ELG revisions.*

***Numeric Nutrient Criteria Rule (NNC):*** *Purdom continues to implement strategies to comply with the Numeric Nutrient Criteria Rule. On March 14, 2019, the Florida Department of Environmental Protection (FDEP) terminated Purdom's Administrative Order (AO) A0-030-TL, as TAL demonstrated all requirements had been met. Purdom continues to implement operation training for all shifts on the zero-discharge system, which focuses on running the process to meet the new nutrient criteria.*

***Lake Talquin Total Maximum Daily Load (TMDL) Rule:*** *The proposed Lake Talquin TMDL Rule, which would have provided a Waste Load Allocation (WLA) of total Phosphorus (TP) of 2,187 kg/year and WLA of total Nitrogen (TN) of 1,020 kg/year for Hopkins was legally challenged and subsequently invalidated on March 2, 2018. This decision invalidating the FDEP rule does not affect TAL operations as Hopkins' NPDES permit remains administratively continued. There are no current WLA for TP and TN at Hopkins. Hopkins will need to comply with the Water Quality Standard of TP at Beaver Creek. This step will require two temporally independent Stream Condition Index studies to be performed, with an average score of 40 (but no sample less than 35) being achieved.*

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***Water Management District Issues - Rule 40A-8.031- Minimum Flows for the St. Marks River Rise:*** *The minimum flow for St. Marks River Rise is established as an allowable*

*reduction of 33 cubic feet per second from the baseline period average daily spring flow. The Rule does not impact TAL.*

***Water Quality Triennial Review:*** *FDEP initiated the Triennial Review of state surface water quality standards as required by the Federal Clean Water Act. All surface water quality standards in Chapters 62-4, 62-302, 62-303, and 62-304, Florida Administrative Code, are under review and may be revised as part of the Triennial Review. The workshops/hearings began early 2019 and continue. The Triennial Review rulemaking process has slowed to collaborate with the Blue-Green Algae Task Force. No impacts are expected at this time.*

***Hydrologic Connectivity:*** *On April 23, 2020, the U.S. Supreme Court issued its opinion in County of Maui, Hawaii v. Hawaii Wildlife Fund, adopting a functional equivalent test for determining when a NPDES permit is required for discharges to groundwater that result in the addition of pollutants to jurisdictional surface waters. By applying the Supreme Court's opinion, a discharge of pollutants to a surface water that first pass through groundwater, would need an NPDES permit if the addition of pollutants from the point source is the "functional equivalent" of a direct discharge. The Court did not define the term "functional equivalent" and suggested that would be determined on a fact specific basis. Additional litigation relating to the application of the "functional equivalent" test is to be expected. This decision should not affect the TAL. Purdom discharges infrequently, directly to the regulated point of discharge, and Hopkins utilizes three lined process water treatment ponds, which should not be an issue if the integrity of the pond liners remain sound.*

***The Navigable Water Protection Rule:*** *Waters of the United States: The final rule was published in the Federal Register on April 21, 2020 and will become effective June 22, 2020. The final rule clarifies ambiguities in the old definition and makes clear that it the intent of the rule that wastewater treatment ponds and cooling ponds are not considered jurisdictional waters. Affected parties may challenge the rule and request a stay, delaying implementation of the rule. If a stay is entered, EPA and the Corps have acknowledged that the old definition will remain in place and existing guidance documents will be used to determine jurisdictional issues. At this time, no impacts are expected by this rule.*

***Waste***

***Tanks:*** *Field erected storage tank systems have to be maintained and inspected according to the frequency established and implemented in accordance with API std 653 and repairs performed based on the recommendations in the inspection report in compliance with the Rule 62-762.702, Florida Administrative Code. Five year in-service external API-653 inspections for both generating stations are required.*

66. For the U.S. EPA's Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units Rule:

    a. Will your Company be materially affected by the rule?

    *The impacts to TAL are expected to be minimal as none of its existing units are currently nor does TAL expect to construct units in the future that would be subject to this rule.*

b. What compliance strategy does the Company anticipate employing for the rule?

*Not applicable.*

c. If the strategy has not been completed, what is the Company's timeline for completing the compliance strategy?

*Not applicable.*

d. Will there be any regulatory approvals needed for implementing this compliance strategy? How will this affect the timeline?

*Not applicable.*

e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on the costs for the current planning period.

*The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

f. If the answer to any of the above questions is not available, please explain why.

*Not applicable.*

67. Explain any expected reliability impacts resulting from each of the EPA rules listed below. As part of your explanation, please discuss the impacts of transmission constraints and changes to units not modified by the rule that may be required to maintain reliability.

    a. Mercury and Air Toxics Standards (MATS) Rule.

       *No units are subject to this rule. No impacts.*

    b. Cross-State Air Pollution Rule (CSAPR).

       *Rule was repealed. No impacts.*

    c. Cooling Water Intake Structures (CWIS) Rule.

       *No units are subject to this rule. No impacts.*

    d. Coal Combustion Residuals (CCR) Rule.

       *No units are subject to this rule. No impacts.*

    e. Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units.

       *Currently, there are no TAL units subject to this rule.*

    f. Affordable Clean Energy Rule.

       *Only applicable to units that use coal or oil as its primary fuel. No units fit that category for TAL.*

    g. Effluent Limitations Guidelines and Standards (ELGS) from the Steam Electric Power Generating Point Source Category.

       *TAL does not use coal as a fuel and therefore no impacts to TAL as a result of the ELGS revisions.*

68. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit affected by one or more of EPA's rules, what the impact is for each rule, including; unit retirement, curtailment, installation of additional emissions controls, fuel switching, or other impacts identified by the Company.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

69. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit impacted by one or more of the EPA's rules, what the estimated cost is for implementing each rule over the course of the planning period.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

70. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by identifying, for each unit impacted by one or more of EPA's rules, when and for what duration units would be required to be offline due to retirements, curtailments, installation of additional controls, or additional maintenance related to emission controls. Include important dates relating to each rule.

    *The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

71. If applicable, identify any currently approved costs for environmental compliance investments made by your Company, including but not limited to renewable energy or energy efficiency measures, which would mitigate the need for future investments to comply with recently finalized or proposed EPA regulations. Briefly describe the nature of these investments and identify which rule(s) they are intended to address.

    *TAL has two PPAs from solar farm projects totaling 62 $MW_{ac}$. These farms could potentially help TAL accomplish its goals to reduce carbon emissions from its power plants and slightly reduce slightly its carbon intensity ($CO_2$ lbs./MWh).*

**Fuel Supply & Transportation**

72. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing, on a system-wide basis, the actual annual fuel usage (in GWh) and average fuel price (in nominal $/MMBTU) for each fuel type utilized by the Company in the 10-year period prior to the current planning period. Also, provide the forecasted annual fuel usage (in GWh) and forecasted annual average fuel price (in nominal $/MMBTU) for each fuel type forecasted to be used by the Company in the current planning period.

*The requested data is provided in the file entitled "Data Request #1 - Excel Tables – TAL.xls".*

73. Please discuss how the Company compares its fuel price forecasts to recognized, authoritative independent forecasts.

*TAL based its fuel price forecasts for natural gas and distillate fuel oil on the Chicago Mercantile Exchange Group/New York Mercantile Exchange (CME/NYMEX) forward prices. Because TAL does not have a recent fuel forecast performed by a third party, the CME/NYMEX prices were relied on as the basis for the fuel forecasts submitted to the FPSC in the 2020 TYSP. At the time TAL prepared the TYSP forecast, the latest public fuel forecast available was from the Energy Information Administration's (EIA) 2020 Annual Energy Outlook released in January 2020. TAL reviewed the EIA data before the TYSP forecast was prepared and found the EIA natural gas prices, for the ten-year period, to track over 28% higher than TAL's CME/NYMEX based natural gas forecast. EIA's Distillate fuel forecast was much closer, averaging only 3% lower than the TAL's CME/NYMEX distillate forecast. Because market prices solicited from TAL suppliers mirror the CME/NYMEX, TAL used the CME/NYMEX as the basis for the TYSP fuel forecasts for natural gas and distillate fuel oil. Since suppliers specifically quote the CME/NYMEX as a basis for fixed price term deals, TAL believes the CME/NYMEX provides a better basis for fuel forecasting than the EIA forecasts.*

74. Please identify and discuss expected industry trends and factors for each fuel type listed below that may affect the Company during the current planning period.

a. Coal

*TAL does not have or plan to add coal generating resources within the ten-year time horizon. Therefore, TAL has limited insight into expected industry trends for coal.*

b. Natural Gas

*The expansion of shale gas production in the United States (US) has significantly contributed to lower and more stable natural gas prices in recent years. Improvements in fracking and directional drilling technology have decreased production costs and increased supply. There is some potential for upward pressure on prices as the US exports increasing volumes of LNG and conventional gas supplies to Mexico. Fracking is still exposed to regulatory risk, either from state legislation or citizen referendums which advocate for banning the practice or increasing setbacks which limits available drilling sites. Since shale gas production comes from onshore sources, potential interruptions and*

*price volatility related to hurricanes in the Gulf of Mexico are reduced. If shale gas production continues to grow TAL should have reasonably priced and stable natural gas supplies for the ten-year planning horizon.*

c. Nuclear

*TAL does not have or plan to add nuclear generating resources within the ten-year time horizon. Therefore, TAL has limited insight into expected industry trends for nuclear.*

d. Fuel Oil

*Since the re-powering of Hopkins Unit 2 in 2008 TAL no longer uses or stores residual fuel oil on site. Due to the higher price of distillate compared to natural gas and environmental permit limits, TAL uses distillate fuel oil primarily for reliability purposes and testing. Distillate and residual fuel oils are likely to remain volatile and subject to the forces of supply, demand, speculative interests, coronavirus impacts and geo-political influences.*

e. Other (please specify each, if any)

*Not applicable.*

75. Please identify and discuss steps that the Company has taken to ensure natural gas supply availability and transportation over the current planning period.

*Over the past several years, TAL has added pipeline capacity and levelized natural gas consumption through the addition of more efficient generating resources and retirement of less efficient units. In 2011, Florida Gas Transmission (FGT) expanded its natural gas pipeline system with the addition of 820,000 MMBtu/day of additional firm transportation capacity. TAL contracted for 6,000 MMBtu/day (year-round) of additional pipeline capacity from this expansion to enhance reliability. TAL also negotiated with FGT to acquire additional FTS-1 turn-back capacity during the summer and winter months as part of the 2015 rate case settlement. The additional pipeline capacity volumes will enable TAL to meet customer needs based on load growth forecasts for the ten-year planning horizon. In the last two years, the City has added 60 MW of solar capacity which will displace natural gas generation and ensure greater reliability with our existing FGT pipeline capacity.*

76. Please identify and discuss any existing or planned natural gas pipeline expansion project(s), including new pipelines and those occurring or planned to occur outside of Florida that would affect the Company during the current planning period.

*Sabal Trail Transmission, LLC (Sabal Trail), a joint venture of Duke, Spectra Energy and NextEra, constructed a nearly 515-mile interstate natural gas pipeline to provide transportation services for the power generation needs of Florida Power and Light (FPL), Duke Energy of Florida (DEF) and others beginning in July 2017. The Sabal Trail pipeline terminates at the new central Florida hub south of Orlando. The hub also provided a point of interconnect with Gulf Stream Natural Gas and FGT. Additional pipeline infrastructure will benefit the greater Southeastern region of the United States by making available additional*

*supplies and to support the growing demand for clean-burning natural gas. Transco pipeline supplies gas from the Barnett, Haynesville, Fayetteville, Eagle Ford and Marcellus supply areas to the Florida gas market through Sabal Trail. In April 2020 Sabal Trail received FERC approval to add two new compressor stations which will increase capacity to 1.1 Bcf/day by 2021. Sabal Trail has helped to increase regional supply diversity, security and reliability for the Southeastern markets. Although TAL is not connected to Sabal Trail, the additional pipeline capacity benefits the entire State of Florida.*

77. Please identify and discuss expected liquefied natural gas (LNG) industry factors and trends that will impact the Company, including the potential impact on the price and availability of natural gas, during the current planning period.

*TAL does not expect that current industry factors and trends in LNG will adversely impact the price and supply of natural gas use for electric power generation for the period 2020 through 2029. The increased use of LNG as an over-the-road, rail, and water borne transportation fuel is not expected to impact the availability or price of natural gas. The market indications are that, due to the low prices of liquid fuels and the advances in PEVs, the conversion of fleets to LNG has declined to a near zero.*

78. Please identify and discuss the Company's plans for the use of firm natural gas storage during the current planning period.

*TAL has contracts for firm underground storage capacity in Mississippi and Louisiana for a total of 70,781 MMBtus, located along the Southern Natural Gas pipeline which serves TAL's Gas Utility. TAL does not have any firm plans for additional underground natural gas storage but will continue to evaluate the economic viability of all storage options.*

79. Please identify and discuss expected coal transportation industry trends and factors, for transportation by both rail and water that will impact the Company during the current planning period. Please include a discussion of actions taken by the Company to promote competition among coal transportation modes, as well as expected changes to terminals and port facilities that could affect coal transportation.

*TAL does not have or plan to add coal generating resources within the ten-year time horizon. Therefore, TAL has limited insight into coal transportation trends.*

80. Please identify and discuss any expected changes in coal handling, blending, unloading, and storage at coal generating units during the current planning period. Please discuss any planned construction projects that may be related to these changes.

*TAL does not have or plan to add coal generating resources within the ten-year time horizon. Therefore, TAL has limited insight into coal handling or storage trends.*

81. Please identify and discuss the Company's plans for the storage and disposal of spent nuclear fuel during the current planning period. As part of this discussion, please include the Company's expectation regarding short-term and long-term storage, dry cask storage, litigation involving spent nuclear fuel, and any relevant legislation.

*Not applicable. TAL does not have or plan to add nuclear generating resources within the ten-year time horizon.*

82. Please identify and discuss expected uranium production industry trends and factors that will affect the Company during the current planning period.

*TAL does not have or plan to add nuclear generating resources within the ten-year time horizon. Therefore, TAL has limited insight into uranium production industry trends.*

# Non-Narrative Responses

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## Existing Generating Unit Operating Performance

| Plant Name | Unit No. | Planned Outage Factor (POF) [1] Historical | Planned Outage Factor (POF) [1] Projected | Forced Outage Factor (FOF) Historical | Forced Outage Factor (FOF) Projected | Equivalent Availability Factor (EAF) Historical | Equivalent Availability Factor (EAF) Projected | Average Net Operating Heat Rate (ANOHR) Historical | Average Net Operating Heat Rate (ANOHR) Projected | |
|---|---|---|---|---|---|---|---|---|---|---|
| Existing Units | | | | | | | | | | |
| A. B. Hopkins | CC 2 | 4.54% | 8.17% | 0.28% | 2.34% | 95.18% | 84.90% | 7,958 | 7,916 | |
| A. B. Hopkins | GT 3 | 5.04% | 3.26% | 2.54% | 3.48% | 92.42% | 88.20% | 9,993 | 10,100 | [2] |
| A. B. Hopkins | GT 4 | 17.40% | 3.26% | 1.05% | 3.48% | 81.55% | 88.20% | 9,824 | 10,100 | [2] |
| A. B. Hopkins | IC 1 | 2.30% | 2.24% | 0.03% | 1.76% | 97.67% | 93.49% | 8,419 | 8,532 | [2] |
| A. B. Hopkins | IC 2 | 3.65% | 2.24% | 0.13% | 1.76% | 96.22% | 93.49% | 8,461 | 8,532 | [2] |
| A. B. Hopkins | IC 3 | 4.15% | 2.24% | 0.06% | 1.76% | 95.79% | 93.49% | 8,432 | 8,532 | [2] |
| A. B. Hopkins | IC 4 | 2.77% | 2.24% | 0.10% | 1.76% | 97.12% | 93.49% | 8,468 | 8,532 | [2] |
| S. O. Purdom | CC 8 | 5.44% | 8.17% | 1.05% | 2.34% | 93.50% | 84.90% | 7,817 | 7,754 | |
| Substation 12 | IC 1 | 4.81% | 2.24% | 0.03% | 1.76% | 95.16% | 93.49% | 8,512 | 8,877 | [2] |
| Substation 12 | IC 2 | 1.03% | 2.24% | 0.01% | 1.76% | 98.96% | 93.49% | 8,391 | 8,877 | [2] |
| Future Units | | | | | | | | | | |
| A. B. Hopkins | IC 5 | NA | 2.24% | NA | 1.76% | NA | 93.49% | NA | 8,532 | |
| Future Unit | IC 1 | NA | 2.24% | NA | 1.76% | NA | 93.49% | NA | 8,532 | |

NOTE: Historical - average of past three years (taken from Electric Utility's "Operational Recap" report for 2017-19)
Projected - average of next ten years (POF/FOF/EAF taken from NERC GADS "2014-2018 Generating Unit Statistical Brochure, All Units Reporting")

[1] Historical values reflect sum of scheduled and maintenance outage factors. Projected values are based on NERC GADS 2014-18 actual planned outage factors (POF) for peer units.
[2] Historical data reflects average gross operating heat rate (Btu/kWh).

| | |
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## Nominal, Firm Purchases

| | | Firm Purchases | |
|---|---|---|---|
| Year | | $/MWh | Escalation % |
| **HISTORY:** | | | |
| | 2017 | NA | NA |
| | 2018 | NA | NA |
| | 2019 | NA | NA |
| **FORECAST:** | | | |
| | 2020 | NA | NA |
| | 2021 | NA | NA |
| | 2022 | NA | NA |
| | 2023 | NA | NA |
| | 2024 | NA | NA |
| | 2025 | NA | NA |
| | 2026 | NA | NA |
| | 2027 | NA | NA |
| | 2028 | NA | NA |
| | 2029 | NA | NA |

| | |
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## Financial Assumptions
## Base Case

| | | | |
|---|---|---|---|
| AFUDC RATE | 5.36% | | (1) |
| CAPITALIZATION RATIOS: | | | |
| DEBT | 54.49% | | (2) |
| PREFERRED | N/A | % | |
| EQUITY | 173.21% | | (2) |
| RATE OF RETURN | | | |
| DEBT | 8.49% | | (3) |
| PREFERRED | N/A | % | |
| EQUITY | 11.99% | | (4) |
| INCOME TAX RATE: | | | |
| STATE | N/A | % | |
| FEDERAL | N/A | % | |
| EFFECTIVE | N/A | % | |
| OTHER TAX RATE: | 750.00% | % | (5) |
| DISCOUNT RATE: | 325.00% | % | (6) |
| TAX | | | |
| DEPRECIATION RATE: | N/A | % | |

(1) Equals 2019 Capitalized Interest divided by Amount subject to interest (see Accounting Services Cap Interest workpapers)
(2) per 2019 CAFR for electric fund
(3) Equals FY2019 "Income before Contibutions and Transfers" divided total debt
(4) Equals FY2019 "Income before Contibutions and Transfers" divided total net position
(5) Sales tax
(6) WSJ prime rate at 3/31/2021

| | |
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## Financial Escalation Assumptions

| Year | General Inflation % | Plant Construction Cost % | Fixed O&M Cost % | Variable O&M Cost % |
|---|---|---|---|---|
| 2020 | 2.4% | 2.5% | 2.5% | 2.5% |
| 2021 | 2.6% | 2.7% | 2.7% | 2.7% |
| 2022 | 2.5% | 2.6% | 2.6% | 2.6% |
| 2023 | 2.4% | 2.5% | 2.5% | 2.5% |
| 2024 | 2.4% | 2.5% | 2.5% | 2.5% |
| 2025 | 2.3% | 2.4% | 2.4% | 2.4% |
| 2026 | 2.3% | 2.4% | 2.4% | 2.4% |
| 2027 | 2.3% | 2.4% | 2.4% | 2.4% |
| 2028 | 2.3% | 2.4% | 2.4% | 2.4% |
| 2029 | 2.4% | 2.5% | 2.5% | 2.5% |

Source: Congressional Budget Office-link below
https://www.cbo.gov/system/files/2019-03/54918-Outlook-3.pdf

| | |
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**Loss of Load Probability, Reserve Margin, and Expected Unserved Energy**
**Base Case Load Forecast**

| Year | Annual Isolated Loss of Load Probability (Days/Yr) | Annual Isolated Reserve Margin (%) (Including Firm Purchases) | Annual Isolated Expected Unserved Energy (MWh) | Annual Assisted Loss of Load Probability (Days/Yr) | Annual Assisted Reserve Margin (%) (Including Firm Purchases) | Annual Assisted Expected Unserved Energy (MWh) |
|---|---|---|---|---|---|---|
| 2020 | 7.3591 | 19 | 6,917.5 | 0.7405 | 19 | 235.3 |
| 2021 | 15.6600 | 18 | 7,680.6 | 0.6005 | 18 | 272.8 |
| 2022 | 6.8026 | 18 | 4,331.5 | 0.2032 | 18 | 109.6 |
| 2023 | 8.0712 | 18 | 4,805.8 | 0.3519 | 18 | 135.7 |
| 2024 | 10.4179 | 18 | 7,045.0 | 0.5527 | 18 | 224.9 |
| 2025 | 7.8761 | 18 | 4,846.4 | 0.2353 | 18 | 123.8 |
| 2026 | 7.6725 | 18 | 4,703.8 | 0.2179 | 18 | 111.2 |
| 2027 | 23.4794 | 17 | 9,204.3 | 0.8922 | 17 | 388.8 |
| 2028 | 7.4256 | 20 | 5,230.2 | 0.3091 | 20 | 128.0 |
| 2029 | 6.5303 | 19 | 4,014.6 | 0.2449 | 19 | 106.7 |

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| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 1/1/2019 | 220 | 212 | 204 | 198 | 196 | 199 | 205 | 207 | 216 | 234 | 258 | 279 | 294 | 303 | 309 | 307 | 303 | 301 | 306 | 298 | 284 | 270 | 252 | 234 |
| 1/2/2019 | 217 | 204 | 196 | 192 | 192 | 203 | 226 | 245 | 250 | 259 | 275 | 287 | 294 | 299 | 302 | 302 | 300 | 299 | 310 | 304 | 289 | 272 | 251 | 230 |
| 1/3/2019 | 212 | 200 | 192 | 189 | 190 | 200 | 225 | 246 | 251 | 260 | 270 | 273 | 276 | 281 | 286 | 288 | 289 | 292 | 306 | 302 | 292 | 277 | 258 | 240 |
| 1/4/2019 | 222 | 209 | 202 | 199 | 201 | 212 | 235 | 259 | 269 | 271 | 276 | 280 | 281 | 277 | 275 | 270 | 266 | 267 | 280 | 278 | 272 | 261 | 248 | 234 |
| 1/5/2019 | 222 | 212 | 207 | 205 | 209 | 219 | 234 | 251 | 268 | 285 | 291 | 289 | 281 | 269 | 260 | 255 | 257 | 268 | 293 | 297 | 296 | 290 | 280 | 269 |
| 1/6/2019 | 258 | 251 | 247 | 246 | 250 | 261 | 276 | 292 | 308 | 306 | 292 | 278 | 269 | 264 | 260 | 258 | 261 | 271 | 294 | 296 | 292 | 282 | 266 | 250 |
| 1/7/2019 | 237 | 230 | 228 | 230 | 240 | 264 | 306 | 338 | 341 | 328 | 310 | 296 | 287 | 281 | 279 | 278 | 278 | 283 | 310 | 315 | 303 | 285 | 268 | 250 |
| 1/8/2019 | 236 | 225 | 219 | 219 | 226 | 248 | 293 | 318 | 312 | 301 | 290 | 286 | 282 | 279 | 277 | 279 | 281 | 284 | 306 | 308 | 298 | 280 | 257 | 235 |
| 1/9/2019 | 218 | 206 | 200 | 198 | 202 | 219 | 259 | 288 | 288 | 290 | 292 | 289 | 284 | 280 | 277 | 276 | 280 | 293 | 327 | 335 | 331 | 320 | 303 | 286 |
| 1/10/2019 | 274 | 267 | 265 | 270 | 281 | 309 | 361 | 392 | 387 | 374 | 358 | 339 | 321 | 307 | 296 | 292 | 296 | 313 | 349 | 362 | 364 | 356 | 338 | 321 |
| 1/11/2019 | 311 | 309 | 312 | 320 | 336 | 367 | 417 | 446 | 433 | 404 | 372 | 343 | 321 | 305 | 293 | 286 | 287 | 295 | 318 | 319 | 313 | 305 | 290 | 274 |
| 1/12/2019 | 260 | 252 | 250 | 250 | 254 | 261 | 273 | 286 | 297 | 299 | 294 | 284 | 277 | 269 | 262 | 257 | 257 | 270 | 292 | 287 | 280 | 266 | 250 | 234 |
| 1/13/2019 | 220 | 209 | 203 | 199 | 198 | 201 | 209 | 219 | 231 | 246 | 239 | 240 | 254 | 269 | 270 | 271 | 276 | 287 | 307 | 299 | 290 | 275 | 255 | 235 |
| 1/14/2019 | 219 | 208 | 204 | 206 | 216 | 243 | 293 | 326 | 328 | 322 | 325 | 322 | 325 | 326 | 317 | 316 | 328 | 353 | 387 | 377 | 367 | 347 | 323 | 298 |
| 1/15/2019 | 280 | 268 | 262 | 262 | 269 | 291 | 336 | 363 | 357 | 355 | 362 | 365 | 359 | 341 | 344 | 341 | 344 | 361 | 403 | 418 | 417 | 407 | 386 | 367 |
| 1/16/2019 | 354 | 351 | 353 | 360 | 375 | 398 | 442 | 457 | 436 | 419 | 398 | 365 | 338 | 318 | 303 | 303 | 313 | 326 | 360 | 384 | 385 | 369 | 354 | 321 |
| 1/17/2019 | 311 | 307 | 310 | 317 | 334 | 366 | 421 | 448 | 434 | 398 | 360 | 337 | 308 | 301 | 292 | 299 | 301 | 305 | 324 | 326 | 318 | 302 | 276 | 253 |
| 1/18/2019 | 236 | 224 | 219 | 219 | 224 | 242 | 280 | 306 | 302 | 298 | 290 | 285 | 282 | 279 | 277 | 275 | 274 | 275 | 291 | 288 | 279 | 266 | 250 | 233 |
| 1/19/2019 | 219 | 208 | 201 | 196 | 195 | 200 | 209 | 221 | 232 | 246 | 256 | 260 | 262 | 260 | 258 | 258 | 264 | 274 | 287 | 285 | 278 | 263 | 246 | 228 |
| 1/20/2019 | 214 | 204 | 199 | 196 | 198 | 208 | 226 | 251 | 285 | 317 | 336 | 345 | 348 | 341 | 331 | 320 | 323 | 342 | 376 | 388 | 387 | 380 | 371 | 360 |
| 1/21/2019 | 354 | 351 | 352 | 359 | 372 | 393 | 422 | 446 | 454 | 445 | 419 | 390 | 362 | 338 | 320 | 309 | 310 | 328 | 367 | 382 | 382 | 373 | 354 | 335 |
| 1/22/2019 | 324 | 320 | 322 | 328 | 341 | 369 | 415 | 439 | 427 | 408 | 380 | 358 | 341 | 312 | 300 | 289 | 286 | 296 | 319 | 330 | 326 | 303 | 279 | 250 |
| 1/23/2019 | 235 | 222 | 213 | 209 | 213 | 232 | 274 | 308 | 311 | 302 | 296 | 302 | 299 | 294 | 291 | 291 | 281 | 285 | 315 | 312 | 303 | 288 | 266 | 242 |
| 1/24/2019 | 223 | 209 | 199 | 193 | 195 | 207 | 246 | 280 | 290 | 296 | 301 | 304 | 301 | 296 | 294 | 288 | 288 | 307 | 345 | 379 | 374 | 365 | 347 | 336 |
| 1/25/2019 | 347 | 344 | 340 | 327 | 340 | 369 | 422 | 449 | 439 | 424 | 405 | 379 | 349 | 344 | 322 | 307 | 304 | 318 | 343 | 352 | 347 | 347 | 338 | 344 |
| 1/26/2019 | 303 | 298 | 307 | 300 | 311 | 331 | 359 | 389 | 405 | 389 | 359 | 334 | 316 | 300 | 292 | 289 | 291 | 303 | 333 | 346 | 350 | 345 | 333 | 319 |
| 1/27/2019 | 307 | 298 | 294 | 293 | 294 | 302 | 316 | 332 | 342 | 342 | 338 | 337 | 337 | 333 | 331 | 330 | 336 | 352 | 371 | 371 | 362 | 347 | 324 | 302 |
| 1/28/2019 | 292 | 291 | 296 | 308 | 328 | 365 | 422 | 454 | 443 | 404 | 364 | 336 | 316 | 301 | 290 | 284 | 287 | 300 | 349 | 366 | 352 | 336 | 317 | 300 |
| 1/29/2019 | 290 | 286 | 287 | 292 | 303 | 328 | 371 | 385 | 371 | 370 | 366 | 369 | 371 | 359 | 354 | 345 | 360 | 366 | 393 | 410 | 407 | 401 | 399 | 386 |
| 1/30/2019 | 381 | 372 | 361 | 370 | 386 | 417 | 467 | 508 | 500 | 491 | 466 | 452 | 426 | 417 | 401 | 395 | 377 | 404 | 454 | 472 | 474 | 455 | 434 | 420 |
| 1/31/2019 | 417 | 422 | 411 | 419 | 432 | 459 | 498 | 502 | 491 | 464 | 424 | 390 | 368 | 348 | 336 | 325 | 309 | 331 | 366 | 384 | 394 | 389 | 365 | 337 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 2/1/2019 | 319 | 314 | 300 | 294 | 302 | 324 | 367 | 388 | 401 | 394 | 377 | 367 | 353 | 349 | 344 | 328 | 323 | 339 | 353 | 351 | 331 | 317 | 310 | 295 |
| 2/2/2019 | 268 | 249 | 238 | 232 | 232 | 238 | 248 | 261 | 273 | 284 | 287 | 283 | 278 | 271 | 262 | 259 | 259 | 267 | 286 | 287 | 280 | 268 | 253 | 237 |
| 2/3/2019 | 222 | 210 | 203 | 200 | 199 | 204 | 214 | 226 | 240 | 257 | 266 | 271 | 274 | 275 | 274 | 272 | 275 | 281 | 294 | 291 | 284 | 273 | 261 | 243 |
| 2/4/2019 | 226 | 215 | 210 | 210 | 217 | 237 | 278 | 303 | 299 | 291 | 287 | 284 | 281 | 278 | 277 | 278 | 287 | 293 | 317 | 318 | 302 | 284 | 266 | 245 |
| 2/5/2019 | 221 | 210 | 205 | 204 | 211 | 231 | 273 | 308 | 318 | 311 | 302 | 300 | 306 | 311 | 312 | 315 | 300 | 311 | 314 | 322 | 308 | 287 | 271 | 246 |
| 2/6/2019 | 229 | 214 | 197 | 193 | 196 | 215 | 256 | 295 | 300 | 303 | 304 | 306 | 311 | 317 | 321 | 316 | 301 | 305 | 320 | 327 | 308 | 288 | 270 | 241 |
| 2/7/2019 | 220 | 204 | 195 | 191 | 194 | 211 | 250 | 286 | 303 | 305 | 310 | 308 | 313 | 320 | 324 | 328 | 315 | 318 | 324 | 335 | 330 | 303 | 271 | 246 |
| 2/8/2019 | 223 | 215 | 196 | 190 | 194 | 210 | 248 | 274 | 289 | 292 | 298 | 310 | 313 | 311 | 307 | 301 | 282 | 295 | 293 | 299 | 287 | 277 | 257 | 241 |
| 2/9/2019 | 227 | 211 | 202 | 201 | 206 | 217 | 235 | 256 | 278 | 290 | 290 | 281 | 270 | 262 | 255 | 251 | 251 | 256 | 276 | 282 | 275 | 264 | 250 | 235 |
| 2/10/2019 | 222 | 212 | 206 | 203 | 203 | 208 | 219 | 230 | 245 | 260 | 264 | 265 | 264 | 263 | 261 | 258 | 261 | 270 | 289 | 299 | 290 | 275 | 254 | 232 |
| 2/11/2019 | 215 | 203 | 196 | 194 | 199 | 218 | 255 | 281 | 279 | 280 | 284 | 286 | 288 | 298 | 302 | 293 | 307 | 310 | 332 | 336 | 316 | 295 | 272 | 243 |
| 2/12/2019 | 219 | 205 | 196 | 193 | 195 | 210 | 248 | 286 | 285 | 286 | 313 | 314 | 333 | 318 | 343 | 321 | 307 | 311 | 317 | 319 | 307 | 288 | 266 | 242 |
| 2/13/2019 | 223 | 209 | 199 | 191 | 195 | 215 | 260 | 298 | 317 | 339 | 322 | 323 | 313 | 308 | 294 | 282 | 278 | 288 | 308 | 328 | 330 | 321 | 305 | 290 |
| 2/14/2019 | 284 | 279 | 274 | 276 | 290 | 319 | 371 | 397 | 407 | 382 | 352 | 329 | 307 | 303 | 322 | 282 | 279 | 285 | 312 | 332 | 329 | 318 | 306 | 295 |
| 2/15/2019 | 285 | 282 | 277 | 279 | 288 | 310 | 354 | 383 | 369 | 340 | 325 | 314 | 304 | 295 | 291 | 302 | 272 | 276 | 290 | 293 | 284 | 272 | 264 | 240 |
| 2/16/2019 | 226 | 215 | 206 | 196 | 196 | 201 | 212 | 223 | 234 | 248 | 260 | 266 | 270 | 271 | 268 | 267 | 267 | 270 | 284 | 292 | 282 | 268 | 251 | 234 |
| 2/17/2019 | 218 | 206 | 198 | 193 | 192 | 195 | 203 | 211 | 225 | 244 | 258 | 267 | 276 | 282 | 284 | 285 | 287 | 290 | 302 | 312 | 305 | 290 | 270 | 250 |
| 2/18/2019 | 231 | 216 | 207 | 203 | 205 | 219 | 246 | 268 | 278 | 288 | 287 | 287 | 288 | 287 | 284 | 280 | 286 | 284 | 310 | 326 | 309 | 297 | 276 | 247 |
| 2/19/2019 | 218 | 205 | 197 | 193 | 194 | 211 | 248 | 276 | 286 | 289 | 292 | 311 | 305 | 305 | 307 | 307 | 293 | 309 | 326 | 330 | 318 | 291 | 273 | 241 |
| 2/20/2019 | 230 | 206 | 204 | 193 | 196 | 213 | 251 | 283 | 296 | 304 | 311 | 304 | 308 | 311 | 306 | 305 | 301 | 312 | 328 | 335 | 332 | 316 | 295 | 268 |
| 2/21/2019 | 247 | 236 | 218 | 205 | 206 | 220 | 256 | 293 | 315 | 316 | 327 | 344 | 359 | 371 | 376 | 367 | 371 | 371 | 367 | 370 | 354 | 326 | 307 | 280 |
| 2/22/2019 | 248 | 236 | 212 | 206 | 207 | 219 | 252 | 285 | 307 | 324 | 315 | 322 | 329 | 338 | 352 | 350 | 351 | 345 | 346 | 341 | 330 | 315 | 286 | 269 |
| 2/23/2019 | 253 | 240 | 221 | 209 | 207 | 210 | 219 | 228 | 246 | 270 | 298 | 321 | 334 | 343 | 348 | 350 | 348 | 342 | 337 | 338 | 325 | 309 | 291 | 271 |
| 2/24/2019 | 251 | 237 | 226 | 219 | 216 | 218 | 226 | 232 | 252 | 267 | 261 | 268 | 278 | 285 | 290 | 297 | 295 | 291 | 297 | 306 | 294 | 276 | 252 | 228 |
| 2/25/2019 | 209 | 195 | 189 | 186 | 192 | 212 | 256 | 284 | 287 | 287 | 285 | 280 | 278 | 276 | 275 | 275 | 278 | 285 | 291 | 309 | 301 | 285 | 258 | 237 |
| 2/26/2019 | 214 | 202 | 196 | 194 | 198 | 215 | 253 | 276 | 275 | 275 | 277 | 282 | 285 | 284 | 291 | 288 | 285 | 285 | 301 | 315 | 304 | 286 | 267 | 247 |
| 2/27/2019 | 224 | 210 | 200 | 190 | 192 | 207 | 242 | 261 | 275 | 288 | 295 | 296 | 305 | 300 | 299 | 296 | 292 | 290 | 312 | 318 | 308 | 297 | 268 | 245 |
| 2/28/2019 | 221 | 219 | 199 | 194 | 196 | 211 | 247 | 274 | 279 | 289 | 293 | 297 | 298 | 294 | 282 | 281 | 287 | 292 | 300 | 313 | 312 | 287 | 271 | 250 |
| Leave Row Blank | | | | | | | | | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 3/1/2019 | 223 | 213 | 203 | 193 | 195 | 209 | 243 | 263 | 268 | 277 | 299 | 303 | 298 | 298 | 299 | 291 | 292 | 282 | 289 | 297 | 287 | 277 | 269 | 240 |
| 3/2/2019 | 224 | 218 | 205 | 195 | 194 | 199 | 209 | 220 | 235 | 255 | 267 | 272 | 274 | 280 | 281 | 281 | 284 | 288 | 292 | 300 | 293 | 280 | 264 | 245 |
| 3/3/2019 | 230 | 218 | 208 | 202 | 199 | 200 | 207 | 212 | 230 | 248 | 264 | 278 | 297 | 306 | 312 | 316 | 311 | 312 | 327 | 334 | 310 | 291 | 269 | 244 |
| 3/4/2019 | 224 | 207 | 194 | 189 | 191 | 204 | 240 | 265 | 271 | 277 | 281 | 282 | 280 | 276 | 273 | 271 | 274 | 291 | 312 | 343 | 349 | 336 | 307 | 296 |
| 3/5/2019 | 272 | 261 | 253 | 253 | 259 | 286 | 341 | 378 | 374 | 378 | 361 | 341 | 325 | 310 | 303 | 293 | 299 | 312 | 336 | 361 | 361 | 351 | 339 | 323 |
| 3/6/2019 | 310 | 310 | 302 | 308 | 321 | 355 | 419 | 447 | 428 | 415 | 391 | 369 | 349 | 327 | 316 | 310 | 299 | 307 | 333 | 365 | 379 | 366 | 349 | 332 |
| 3/7/2019 | 321 | 322 | 328 | 330 | 345 | 367 | 424 | 445 | 416 | 375 | 343 | 320 | 304 | 294 | 303 | 290 | 280 | 285 | 294 | 317 | 317 | 304 | 299 | 283 |
| 3/8/2019 | 264 | 256 | 252 | 256 | 267 | 292 | 344 | 357 | 343 | 327 | 299 | 289 | 295 | 293 | 279 | 288 | 284 | 275 | 285 | 294 | 281 | 270 | 255 | 240 |
| 3/9/2019 | 218 | 207 | 199 | 195 | 195 | 201 | 211 | 220 | 236 | 250 | 256 | 260 | 264 | 267 | 270 | 276 | 280 | 282 | 285 | 296 | 287 | 272 | 254 | 233 |
| 3/10/2019 | 217 | 210 | 203 | 195 | 191 | 191 | 197 | 205 | 215 | 233 | 251 | 268 | 285 | 301 | 312 | 321 | 321 | 317 | 316 | 317 | 329 | 316 | 291 | 264 |
| 3/11/2019 | 239 | 220 | 209 | 203 | 202 | 212 | 245 | 275 | 277 | 281 | 290 | 296 | 300 | 305 | 327 | 339 | 338 | 354 | 342 | 355 | 351 | 326 | 296 | 268 |
| 3/12/2019 | 242 | 224 | 210 | 201 | 198 | 205 | 238 | 265 | 262 | 266 | 273 | 280 | 292 | 313 | 319 | 319 | 338 | 327 | 328 | 330 | 336 | 326 | 299 | 270 |
| 3/13/2019 | 236 | 216 | 200 | 188 | 188 | 201 | 236 | 265 | 263 | 266 | 274 | 282 | 288 | 299 | 311 | 340 | 355 | 338 | 336 | 332 | 336 | 338 | 307 | 270 |
| 3/14/2019 | 245 | 221 | 202 | 194 | 193 | 203 | 237 | 269 | 280 | 289 | 301 | 313 | 322 | 334 | 342 | 342 | 338 | 334 | 327 | 329 | 337 | 320 | 296 | 269 |
| 3/15/2019 | 264 | 223 | 216 | 199 | 198 | 210 | 242 | 278 | 294 | 297 | 312 | 306 | 329 | 352 | 361 | 363 | 349 | 360 | 361 | 341 | 337 | 316 | 295 | 274 |
| 3/16/2019 | 260 | 229 | 211 | 189 | 186 | 188 | 196 | 206 | 216 | 232 | 241 | 244 | 245 | 242 | 240 | 239 | 241 | 242 | 243 | 251 | 262 | 256 | 244 | 231 |
| 3/17/2019 | 217 | 207 | 200 | 197 | 196 | 201 | 210 | 224 | 238 | 253 | 259 | 260 | 254 | 250 | 244 | 240 | 239 | 241 | 244 | 253 | 264 | 257 | 243 | 226 |
| 3/18/2019 | 212 | 204 | 200 | 202 | 209 | 227 | 261 | 291 | 297 | 293 | 285 | 274 | 267 | 262 | 259 | 255 | 258 | 270 | 271 | 282 | 287 | 278 | 255 | 239 |
| 3/19/2019 | 217 | 207 | 202 | 202 | 208 | 224 | 256 | 300 | 312 | 313 | 316 | 303 | 293 | 287 | 282 | 274 | 265 | 261 | 261 | 268 | 275 | 267 | 249 | 232 |
| 3/20/2019 | 221 | 213 | 206 | 204 | 212 | 230 | 266 | 303 | 306 | 294 | 287 | 275 | 266 | 260 | 258 | 267 | 253 | 258 | 258 | 264 | 273 | 267 | 252 | 236 |
| 3/21/2019 | 225 | 220 | 218 | 216 | 224 | 243 | 279 | 308 | 310 | 302 | 289 | 273 | 285 | 281 | 271 | 279 | 268 | 260 | 264 | 274 | 284 | 278 | 260 | 233 |
| 3/22/2019 | 220 | 219 | 213 | 204 | 211 | 228 | 261 | 302 | 309 | 305 | 301 | 293 | 297 | 292 | 271 | 263 | 260 | 262 | 260 | 256 | 263 | 253 | 241 | 228 |
| 3/23/2019 | 216 | 210 | 205 | 202 | 206 | 216 | 234 | 253 | 269 | 272 | 261 | 250 | 242 | 239 | 238 | 242 | 248 | 254 | 254 | 252 | 259 | 249 | 233 | 216 |
| 3/24/2019 | 201 | 191 | 185 | 184 | 185 | 192 | 204 | 218 | 233 | 243 | 243 | 243 | 248 | 252 | 256 | 260 | 264 | 269 | 272 | 273 | 284 | 274 | 254 | 229 |
| 3/25/2019 | 209 | 194 | 186 | 183 | 187 | 201 | 231 | 257 | 261 | 266 | 274 | 280 | 289 | 296 | 302 | 308 | 318 | 329 | 326 | 324 | 327 | 312 | 283 | 252 |
| 3/26/2019 | 221 | 205 | 195 | 191 | 191 | 203 | 239 | 278 | 288 | 295 | 297 | 299 | 305 | 308 | 318 | 324 | 313 | 311 | 312 | 309 | 317 | 300 | 265 | 236 |
| 3/27/2019 | 218 | 202 | 191 | 185 | 186 | 200 | 236 | 272 | 282 | 294 | 300 | 299 | 289 | 283 | 288 | 284 | 281 | 285 | 289 | 292 | 301 | 291 | 267 | 241 |
| 3/28/2019 | 224 | 215 | 205 | 201 | 207 | 226 | 271 | 320 | 322 | 306 | 300 | 293 | 292 | 287 | 303 | 296 | 290 | 290 | 291 | 296 | 302 | 291 | 267 | 237 |
| 3/29/2019 | 218 | 204 | 194 | 188 | 191 | 208 | 248 | 287 | 305 | 301 | 303 | 293 | 297 | 309 | 309 | 317 | 306 | 307 | 301 | 291 | 295 | 281 | 265 | 244 |
| 3/30/2019 | 225 | 205 | 194 | 185 | 184 | 189 | 200 | 212 | 223 | 238 | 252 | 262 | 268 | 274 | 281 | 287 | 295 | 301 | 298 | 291 | 296 | 286 | 266 | 247 |
| 3/31/2019 | 227 | 211 | 200 | 192 | 189 | 191 | 197 | 204 | 218 | 238 | 256 | 267 | 278 | 286 | 283 | 289 | 290 | 283 | 275 | 276 | 282 | 271 | 250 | 229 |

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
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| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 4/1/2019 | 210 | 196 | 189 | 187 | 191 | 209 | 248 | 279 | 283 | 287 | 293 | 296 | 296 | 294 | 290 | 288 | 294 | 306 | 320 | 333 | 326 | 310 | 286 | 258 |
| 4/2/2019 | 236 | 224 | 217 | 214 | 218 | 234 | 273 | 298 | 296 | 296 | 324 | 305 | 316 | 306 | 298 | 299 | 285 | 285 | 298 | 306 | 323 | 295 | 267 | 241 |
| 4/3/2019 | 224 | 214 | 211 | 202 | 209 | 230 | 273 | 324 | 331 | 317 | 313 | 303 | 293 | 304 | 306 | 304 | 300 | 315 | 317 | 311 | 318 | 299 | 270 | 244 |
| 4/4/2019 | 222 | 204 | 197 | 188 | 192 | 209 | 248 | 291 | 290 | 303 | 304 | 308 | 304 | 322 | 322 | 330 | 313 | 310 | 313 | 317 | 320 | 303 | 274 | 251 |
| 4/5/2019 | 232 | 215 | 201 | 191 | 193 | 204 | 236 | 286 | 288 | 302 | 312 | 293 | 301 | 307 | 309 | 305 | 298 | 284 | 280 | 289 | 295 | 286 | 271 | 250 |
| 4/6/2019 | 232 | 220 | 209 | 199 | 198 | 201 | 211 | 223 | 237 | 256 | 273 | 283 | 292 | 302 | 309 | 319 | 330 | 337 | 335 | 327 | 329 | 314 | 291 | 268 |
| 4/7/2019 | 245 | 227 | 215 | 207 | 202 | 203 | 209 | 214 | 228 | 253 | 274 | 295 | 315 | 332 | 349 | 358 | 361 | 362 | 357 | 349 | 352 | 335 | 306 | 273 |
| 4/8/2019 | 246 | 225 | 213 | 207 | 207 | 219 | 252 | 276 | 283 | 293 | 312 | 326 | 334 | 337 | 329 | 306 | 315 | 325 | 324 | 334 | 336 | 336 | 314 | 278 |
| 4/9/2019 | 236 | 219 | 209 | 204 | 204 | 217 | 251 | 289 | 293 | 304 | 313 | 325 | 331 | 340 | 338 | 349 | 359 | 373 | 368 | 360 | 359 | 342 | 306 | 279 |
| 4/10/2019 | 261 | 236 | 213 | 200 | 201 | 212 | 247 | 284 | 286 | 292 | 308 | 322 | 343 | 352 | 365 | 373 | 389 | 398 | 391 | 382 | 378 | 355 | 321 | 285 |
| 4/11/2019 | 246 | 225 | 211 | 204 | 203 | 214 | 245 | 274 | 279 | 297 | 316 | 331 | 347 | 361 | 381 | 377 | 387 | 392 | 388 | 372 | 363 | 342 | 314 | 283 |
| 4/12/2019 | 254 | 234 | 215 | 208 | 207 | 217 | 248 | 282 | 292 | 306 | 311 | 330 | 349 | 360 | 375 | 389 | 393 | 403 | 389 | 363 | 354 | 337 | 323 | 294 |
| 4/13/2019 | 256 | 228 | 214 | 206 | 200 | 202 | 209 | 215 | 231 | 254 | 280 | 308 | 333 | 350 | 366 | 382 | 392 | 387 | 375 | 352 | 343 | 347 | 323 | 297 |
| 4/14/2019 | 271 | 252 | 238 | 230 | 225 | 225 | 232 | 243 | 265 | 286 | 302 | 316 | 324 | 325 | 313 | 307 | 307 | 309 | 310 | 309 | 316 | 300 | 276 | 247 |
| 4/15/2019 | 222 | 203 | 190 | 184 | 185 | 198 | 231 | 253 | 260 | 266 | 270 | 272 | 273 | 275 | 279 | 284 | 290 | 298 | 303 | 298 | 301 | 287 | 270 | 244 |
| 4/16/2019 | 211 | 197 | 188 | 185 | 188 | 203 | 241 | 268 | 268 | 270 | 287 | 284 | 287 | 297 | 300 | 314 | 326 | 334 | 325 | 328 | 319 | 312 | 282 | 250 |
| 4/17/2019 | 245 | 206 | 193 | 188 | 189 | 203 | 239 | 274 | 265 | 273 | 296 | 307 | 329 | 338 | 350 | 369 | 368 | 372 | 364 | 358 | 362 | 347 | 300 | 271 |
| 4/18/2019 | 247 | 225 | 204 | 196 | 197 | 209 | 245 | 280 | 283 | 293 | 309 | 323 | 334 | 352 | 371 | 382 | 381 | 379 | 369 | 375 | 367 | 351 | 322 | 305 |
| 4/19/2019 | 278 | 253 | 236 | 229 | 232 | 244 | 271 | 295 | 295 | 298 | 307 | 326 | 331 | 337 | 328 | 334 | 333 | 318 | 296 | 282 | 287 | 284 | 265 | 244 |
| 4/20/2019 | 218 | 201 | 191 | 185 | 185 | 188 | 198 | 209 | 227 | 241 | 248 | 250 | 249 | 249 | 248 | 250 | 253 | 257 | 258 | 256 | 260 | 256 | 244 | 226 |
| 4/21/2019 | 209 | 197 | 190 | 186 | 186 | 192 | 202 | 213 | 231 | 243 | 244 | 244 | 246 | 248 | 251 | 257 | 264 | 271 | 275 | 274 | 279 | 270 | 250 | 226 |
| 4/22/2019 | 206 | 192 | 184 | 181 | 186 | 200 | 233 | 256 | 262 | 267 | 274 | 283 | 290 | 298 | 310 | 321 | 338 | 373 | 358 | 358 | 334 | 321 | 290 | 252 |
| 4/23/2019 | 221 | 203 | 191 | 185 | 186 | 198 | 231 | 267 | 264 | 271 | 283 | 296 | 313 | 341 | 358 | 361 | 376 | 381 | 384 | 359 | 352 | 337 | 303 | 268 |
| 4/24/2019 | 245 | 218 | 203 | 195 | 195 | 206 | 238 | 279 | 282 | 301 | 307 | 306 | 316 | 321 | 327 | 354 | 337 | 337 | 338 | 332 | 343 | 337 | 302 | 260 |
| 4/25/2019 | 231 | 211 | 198 | 192 | 192 | 203 | 233 | 269 | 285 | 274 | 285 | 299 | 324 | 352 | 348 | 347 | 340 | 342 | 338 | 345 | 351 | 342 | 321 | 294 |
| 4/26/2019 | 257 | 240 | 215 | 199 | 199 | 209 | 239 | 274 | 289 | 300 | 297 | 303 | 307 | 315 | 342 | 353 | 352 | 362 | 367 | 339 | 332 | 316 | 283 | 257 |
| 4/27/2019 | 232 | 213 | 197 | 187 | 183 | 186 | 194 | 202 | 221 | 239 | 255 | 265 | 273 | 283 | 295 | 311 | 327 | 335 | 328 | 310 | 301 | 290 | 268 | 243 |
| 4/28/2019 | 220 | 203 | 192 | 185 | 182 | 184 | 189 | 195 | 214 | 234 | 249 | 261 | 275 | 289 | 307 | 326 | 344 | 356 | 355 | 340 | 331 | 312 | 279 | 253 |
| 4/29/2019 | 226 | 208 | 196 | 192 | 193 | 204 | 233 | 252 | 262 | 279 | 302 | 324 | 346 | 372 | 395 | 414 | 433 | 435 | 445 | 438 | 409 | 382 | 345 | 305 |
| 4/30/2019 | 268 | 244 | 226 | 217 | 214 | 222 | 251 | 275 | 284 | 309 | 335 | 361 | 398 | 394 | 412 | 427 | 443 | 449 | 443 | 427 | 410 | 390 | 361 | 311 |

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
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| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 5/1/2019 | 279 | 260 | 241 | 230 | 228 | 238 | 270 | 297 | 325 | 322 | 347 | 371 | 391 | 410 | 442 | 461 | 460 | 461 | 464 | 443 | 418 | 400 | 371 | 329 |
| 5/2/2019 | 293 | 266 | 238 | 226 | 223 | 233 | 262 | 312 | 298 | 319 | 341 | 361 | 379 | 396 | 422 | 435 | 443 | 438 | 409 | 395 | 384 | 371 | 340 | 307 |
| 5/3/2019 | 279 | 258 | 240 | 228 | 227 | 239 | 270 | 316 | 312 | 323 | 344 | 358 | 373 | 403 | 437 | 459 | 440 | 434 | 429 | 401 | 393 | 386 | 361 | 333 |
| 5/4/2019 | 306 | 278 | 251 | 238 | 231 | 232 | 238 | 246 | 268 | 299 | 330 | 351 | 374 | 386 | 375 | 362 | 364 | 368 | 353 | 337 | 337 | 331 | 309 | 282 |
| 5/5/2019 | 258 | 240 | 230 | 223 | 220 | 220 | 224 | 229 | 247 | 275 | 297 | 305 | 317 | 335 | 351 | 364 | 383 | 391 | 384 | 372 | 363 | 347 | 317 | 286 |
| 5/6/2019 | 257 | 236 | 222 | 215 | 215 | 225 | 254 | 269 | 279 | 299 | 320 | 342 | 364 | 385 | 404 | 423 | 446 | 447 | 431 | 410 | 391 | 365 | 322 | 284 |
| 5/7/2019 | 254 | 232 | 217 | 208 | 208 | 218 | 251 | 274 | 288 | 306 | 332 | 356 | 385 | 407 | 428 | 447 | 459 | 463 | 452 | 434 | 406 | 378 | 335 | 299 |
| 5/8/2019 | 284 | 263 | 248 | 230 | 228 | 238 | 269 | 297 | 311 | 331 | 360 | 386 | 409 | 431 | 445 | 465 | 464 | 465 | 456 | 428 | 408 | 384 | 357 | 318 |
| 5/9/2019 | 292 | 268 | 256 | 232 | 230 | 240 | 275 | 300 | 306 | 324 | 347 | 373 | 393 | 413 | 432 | 439 | 454 | 457 | 434 | 423 | 408 | 389 | 346 | 299 |
| 5/10/2019 | 277 | 259 | 242 | 228 | 226 | 236 | 268 | 292 | 305 | 329 | 354 | 382 | 398 | 419 | 455 | 448 | 424 | 396 | 376 | 360 | 343 | 337 | 319 | 287 |
| 5/11/2019 | 264 | 257 | 239 | 221 | 217 | 218 | 224 | 231 | 254 | 288 | 319 | 345 | 371 | 396 | 414 | 423 | 423 | 418 | 402 | 382 | 372 | 360 | 334 | 307 |
| 5/12/2019 | 281 | 261 | 246 | 238 | 233 | 233 | 238 | 244 | 269 | 304 | 335 | 355 | 365 | 366 | 328 | 307 | 305 | 309 | 307 | 307 | 311 | 306 | 284 | 261 |
| 5/13/2019 | 238 | 222 | 212 | 207 | 210 | 224 | 257 | 277 | 286 | 301 | 317 | 329 | 337 | 346 | 363 | 376 | 395 | 406 | 413 | 402 | 379 | 362 | 327 | 286 |
| 5/14/2019 | 250 | 229 | 216 | 207 | 206 | 214 | 242 | 268 | 279 | 295 | 311 | 331 | 340 | 352 | 369 | 389 | 387 | 389 | 377 | 359 | 346 | 337 | 302 | 267 |
| 5/15/2019 | 244 | 221 | 203 | 193 | 193 | 203 | 233 | 257 | 266 | 291 | 305 | 323 | 336 | 354 | 371 | 387 | 406 | 412 | 401 | 378 | 365 | 345 | 307 | 275 |
| 5/16/2019 | 244 | 218 | 205 | 198 | 197 | 207 | 233 | 257 | 273 | 296 | 322 | 341 | 363 | 378 | 412 | 426 | 442 | 440 | 431 | 412 | 409 | 379 | 341 | 301 |
| 5/17/2019 | 273 | 246 | 227 | 218 | 215 | 222 | 248 | 274 | 283 | 304 | 330 | 358 | 389 | 414 | 441 | 453 | 464 | 431 | 416 | 402 | 383 | 365 | 338 | 307 |
| 5/18/2019 | 276 | 253 | 237 | 227 | 220 | 220 | 223 | 230 | 258 | 292 | 323 | 352 | 379 | 404 | 423 | 434 | 434 | 435 | 425 | 406 | 388 | 371 | 340 | 310 |
| 5/19/2019 | 282 | 261 | 245 | 234 | 228 | 226 | 227 | 232 | 258 | 295 | 332 | 362 | 389 | 413 | 432 | 449 | 460 | 463 | 451 | 429 | 411 | 385 | 348 | 312 |
| 5/20/2019 | 278 | 255 | 239 | 229 | 228 | 241 | 269 | 290 | 307 | 328 | 357 | 383 | 408 | 435 | 460 | 479 | 490 | 497 | 481 | 461 | 436 | 406 | 371 | 320 |
| 5/21/2019 | 283 | 259 | 243 | 235 | 232 | 243 | 270 | 289 | 309 | 347 | 376 | 416 | 454 | 486 | 513 | 521 | 520 | 516 | 513 | 493 | 457 | 434 | 398 | 346 |
| 5/22/2019 | 304 | 273 | 253 | 241 | 238 | 248 | 276 | 309 | 330 | 361 | 414 | 435 | 486 | 496 | 532 | 553 | 524 | 499 | 488 | 470 | 456 | 448 | 407 | 381 |
| 5/23/2019 | 347 | 310 | 284 | 264 | 257 | 263 | 289 | 321 | 344 | 369 | 400 | 439 | 482 | 517 | 518 | 523 | 527 | 520 | 499 | 478 | 459 | 434 | 402 | 359 |
| 5/24/2019 | 325 | 297 | 272 | 254 | 247 | 254 | 277 | 314 | 359 | 384 | 413 | 428 | 447 | 477 | 499 | 522 | 513 | 511 | 494 | 469 | 438 | 412 | 372 | 335 |
| 5/25/2019 | 315 | 281 | 267 | 239 | 232 | 231 | 232 | 238 | 268 | 308 | 349 | 392 | 431 | 463 | 487 | 504 | 512 | 510 | 501 | 482 | 459 | 440 | 405 | 371 |
| 5/26/2019 | 340 | 316 | 296 | 282 | 271 | 266 | 263 | 267 | 299 | 339 | 382 | 419 | 454 | 483 | 501 | 514 | 515 | 514 | 503 | 477 | 450 | 429 | 393 | 358 |
| 5/27/2019 | 325 | 301 | 284 | 274 | 267 | 267 | 271 | 277 | 305 | 346 | 393 | 438 | 474 | 503 | 524 | 538 | 546 | 547 | 532 | 504 | 478 | 459 | 419 | 380 |
| 5/28/2019 | 347 | 321 | 303 | 291 | 286 | 294 | 316 | 347 | 373 | 401 | 436 | 466 | 509 | 539 | 562 | 571 | 577 | 586 | 573 | 552 | 525 | 497 | 445 | 398 |
| 5/29/2019 | 360 | 332 | 300 | 283 | 278 | 286 | 314 | 341 | 372 | 406 | 443 | 475 | 516 | 549 | 581 | 587 | 592 | 591 | 574 | 544 | 509 | 482 | 431 | 383 |
| 5/30/2019 | 340 | 313 | 295 | 282 | 276 | 282 | 305 | 331 | 368 | 397 | 430 | 461 | 487 | 518 | 538 | 547 | 553 | 547 | 532 | 509 | 485 | 465 | 421 | 387 |
| 5/31/2019 | 353 | 323 | 302 | 287 | 283 | 290 | 315 | 342 | 382 | 409 | 447 | 467 | 498 | 525 | 536 | 545 | 529 | 510 | 492 | 458 | 438 | 423 | 390 | 360 |

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
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| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 6/1/2019 | 326 | 305 | 285 | 270 | 263 | 263 | 265 | 273 | 305 | 340 | 379 | 418 | 455 | 484 | 497 | 503 | 481 | 452 | 428 | 416 | 399 | 387 | 360 | 330 |
| 6/2/2019 | 300 | 277 | 261 | 252 | 248 | 246 | 248 | 255 | 281 | 321 | 362 | 403 | 435 | 464 | 480 | 493 | 502 | 507 | 494 | 478 | 458 | 438 | 399 | 367 |
| 6/3/2019 | 332 | 306 | 288 | 276 | 272 | 279 | 298 | 316 | 338 | 372 | 410 | 447 | 481 | 509 | 531 | 549 | 563 | 574 | 550 | 529 | 507 | 478 | 442 | 388 |
| 6/4/2019 | 346 | 320 | 300 | 289 | 286 | 293 | 314 | 349 | 373 | 403 | 439 | 478 | 528 | 558 | 578 | 580 | 571 | 567 | 561 | 540 | 507 | 484 | 445 | 407 |
| 6/5/2019 | 369 | 344 | 319 | 300 | 295 | 304 | 325 | 365 | 394 | 428 | 462 | 488 | 516 | 540 | 552 | 548 | 541 | 542 | 519 | 498 | 485 | 460 | 425 | 385 |
| 6/6/2019 | 360 | 337 | 317 | 298 | 295 | 305 | 329 | 351 | 366 | 376 | 390 | 399 | 409 | 397 | 419 | 414 | 395 | 400 | 393 | 385 | 385 | 385 | 361 | 333 |
| 6/7/2019 | 311 | 289 | 272 | 260 | 257 | 267 | 291 | 329 | 359 | 388 | 398 | 424 | 411 | 404 | 436 | 458 | 464 | 450 | 436 | 418 | 398 | 377 | 349 | 321 |
| 6/8/2019 | 295 | 275 | 261 | 254 | 251 | 252 | 257 | 265 | 285 | 311 | 337 | 361 | 372 | 377 | 376 | 367 | 356 | 339 | 326 | 316 | 312 | 312 | 298 | 281 |
| 6/9/2019 | 261 | 249 | 241 | 236 | 234 | 236 | 241 | 249 | 269 | 301 | 339 | 365 | 378 | 362 | 349 | 351 | 367 | 379 | 386 | 382 | 377 | 369 | 348 | 320 |
| 6/10/2019 | 294 | 276 | 265 | 259 | 260 | 270 | 293 | 311 | 332 | 364 | 395 | 428 | 444 | 444 | 475 | 499 | 498 | 444 | 416 | 398 | 375 | 380 | 344 | 312 |
| 6/11/2019 | 285 | 265 | 253 | 245 | 244 | 255 | 279 | 312 | 324 | 347 | 365 | 396 | 434 | 468 | 488 | 471 | 439 | 430 | 406 | 390 | 390 | 383 | 350 | 320 |
| 6/12/2019 | 300 | 274 | 258 | 251 | 252 | 260 | 289 | 313 | 325 | 345 | 379 | 412 | 404 | 426 | 406 | 395 | 386 | 411 | 403 | 394 | 384 | 375 | 357 | 321 |
| 6/13/2019 | 290 | 274 | 255 | 247 | 246 | 250 | 272 | 305 | 331 | 352 | 373 | 392 | 407 | 402 | 413 | 415 | 410 | 412 | 408 | 388 | 371 | 363 | 334 | 299 |
| 6/14/2019 | 284 | 254 | 233 | 226 | 224 | 232 | 251 | 277 | 296 | 323 | 357 | 379 | 393 | 428 | 458 | 451 | 462 | 457 | 446 | 431 | 412 | 382 | 343 | 314 |
| 6/15/2019 | 306 | 274 | 251 | 237 | 231 | 232 | 235 | 243 | 269 | 304 | 339 | 373 | 402 | 424 | 441 | 451 | 460 | 464 | 459 | 438 | 417 | 404 | 376 | 342 |
| 6/16/2019 | 310 | 285 | 267 | 257 | 250 | 248 | 246 | 254 | 286 | 325 | 359 | 391 | 423 | 448 | 460 | 478 | 489 | 492 | 484 | 468 | 447 | 431 | 388 | 348 |
| 6/17/2019 | 314 | 289 | 271 | 260 | 258 | 266 | 284 | 304 | 329 | 359 | 381 | 391 | 396 | 395 | 419 | 435 | 445 | 436 | 432 | 417 | 405 | 382 | 353 | 321 |
| 6/18/2019 | 290 | 271 | 257 | 249 | 249 | 259 | 282 | 312 | 326 | 351 | 386 | 434 | 456 | 483 | 481 | 451 | 452 | 426 | 397 | 380 | 369 | 364 | 336 | 315 |
| 6/19/2019 | 284 | 271 | 252 | 246 | 248 | 261 | 285 | 321 | 340 | 370 | 361 | 373 | 392 | 433 | 435 | 402 | 432 | 453 | 446 | 440 | 422 | 405 | 373 | 339 |
| 6/20/2019 | 309 | 289 | 274 | 268 | 270 | 283 | 310 | 357 | 357 | 383 | 403 | 416 | 438 | 473 | 505 | 532 | 521 | 512 | 504 | 482 | 469 | 448 | 414 | 379 |
| 6/21/2019 | 349 | 333 | 307 | 299 | 297 | 306 | 326 | 351 | 375 | 405 | 448 | 467 | 504 | 524 | 549 | 558 | 551 | 560 | 544 | 516 | 499 | 480 | 447 | 411 |
| 6/22/2019 | 365 | 339 | 317 | 302 | 293 | 290 | 290 | 296 | 324 | 364 | 401 | 426 | 444 | 461 | 482 | 502 | 512 | 465 | 426 | 412 | 396 | 386 | 359 | 331 |
| 6/23/2019 | 306 | 287 | 269 | 255 | 247 | 245 | 245 | 251 | 282 | 323 | 369 | 408 | 444 | 476 | 501 | 519 | 531 | 534 | 518 | 463 | 423 | 409 | 379 | 345 |
| 6/24/2019 | 316 | 293 | 278 | 271 | 271 | 279 | 300 | 322 | 347 | 381 | 416 | 454 | 489 | 518 | 542 | 558 | 563 | 560 | 538 | 492 | 466 | 453 | 422 | 387 |
| 6/25/2019 | 356 | 333 | 316 | 306 | 304 | 314 | 335 | 354 | 377 | 409 | 442 | 475 | 504 | 528 | 550 | 564 | 565 | 559 | 532 | 503 | 472 | 447 | 408 | 371 |
| 6/26/2019 | 336 | 311 | 296 | 286 | 281 | 290 | 307 | 327 | 353 | 387 | 423 | 463 | 490 | 513 | 533 | 552 | 554 | 559 | 546 | 511 | 478 | 454 | 413 | 374 |
| 6/27/2019 | 339 | 314 | 296 | 287 | 284 | 293 | 312 | 324 | 339 | 364 | 394 | 441 | 477 | 491 | 476 | 467 | 475 | 472 | 459 | 448 | 422 | 412 | 377 | 342 |
| 6/28/2019 | 313 | 291 | 275 | 269 | 268 | 274 | 293 | 312 | 341 | 376 | 404 | 440 | 476 | 495 | 517 | 523 | 512 | 497 | 478 | 455 | 429 | 417 | 388 | 349 |
| 6/29/2019 | 309 | 286 | 269 | 258 | 252 | 250 | 250 | 256 | 278 | 298 | 319 | 332 | 351 | 385 | 418 | 440 | 444 | 452 | 443 | 417 | 393 | 376 | 347 | 317 |
| 6/30/2019 | 290 | 271 | 256 | 246 | 240 | 240 | 240 | 243 | 268 | 306 | 346 | 381 | 412 | 437 | 456 | 469 | 485 | 496 | 490 | 470 | 445 | 433 | 402 | 363 |

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
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| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 7/1/2019 | 329 | 303 | 288 | 279 | 278 | 288 | 308 | 326 | 352 | 386 | 421 | 461 | 512 | 535 | 544 | 552 | 562 | 551 | 542 | 518 | 495 | 477 | 440 | 398 |
| 7/2/2019 | 362 | 338 | 319 | 307 | 301 | 306 | 321 | 338 | 371 | 410 | 444 | 478 | 516 | 544 | 562 | 572 | 576 | 559 | 525 | 500 | 477 | 454 | 419 | 379 |
| 7/3/2019 | 345 | 319 | 299 | 289 | 285 | 294 | 311 | 330 | 353 | 390 | 429 | 476 | 515 | 540 | 568 | 539 | 535 | 525 | 498 | 475 | 452 | 436 | 405 | 372 |
| 7/4/2019 | 344 | 321 | 303 | 291 | 284 | 283 | 284 | 288 | 315 | 357 | 401 | 445 | 482 | 509 | 530 | 542 | 547 | 545 | 518 | 464 | 433 | 412 | 383 | 357 |
| 7/5/2019 | 329 | 306 | 291 | 281 | 277 | 281 | 292 | 301 | 323 | 357 | 393 | 435 | 462 | 462 | 465 | 486 | 504 | 504 | 464 | 431 | 420 | 410 | 374 | 337 |
| 7/6/2019 | 320 | 303 | 288 | 277 | 269 | 270 | 273 | 276 | 292 | 318 | 344 | 358 | 382 | 408 | 369 | 335 | 332 | 330 | 326 | 321 | 319 | 320 | 307 | 288 |
| 7/7/2019 | 269 | 256 | 245 | 238 | 233 | 235 | 238 | 244 | 271 | 307 | 351 | 394 | 437 | 472 | 493 | 478 | 447 | 442 | 435 | 424 | 410 | 403 | 366 | 330 |
| 7/8/2019 | 302 | 280 | 268 | 260 | 260 | 270 | 290 | 309 | 331 | 359 | 392 | 425 | 455 | 481 | 507 | 519 | 526 | 508 | 481 | 453 | 430 | 427 | 396 | 360 |
| 7/9/2019 | 319 | 298 | 282 | 271 | 269 | 280 | 303 | 332 | 359 | 391 | 430 | 468 | 492 | 516 | 542 | 531 | 479 | 472 | 449 | 446 | 437 | 415 | 370 | 354 |
| 7/10/2019 | 331 | 315 | 296 | 283 | 285 | 299 | 322 | 352 | 365 | 387 | 419 | 442 | 471 | 473 | 467 | 474 | 461 | 436 | 418 | 410 | 399 | 396 | 375 | 338 |
| 7/11/2019 | 316 | 304 | 276 | 268 | 266 | 276 | 300 | 332 | 351 | 376 | 407 | 437 | 468 | 493 | 478 | 483 | 493 | 500 | 483 | 469 | 460 | 433 | 395 | 358 |
| 7/12/2019 | 326 | 305 | 289 | 279 | 275 | 284 | 304 | 319 | 340 | 354 | 393 | 425 | 432 | 467 | 428 | 409 | 388 | 371 | 355 | 349 | 357 | 352 | 343 | 319 |
| 7/13/2019 | 307 | 272 | 252 | 243 | 240 | 242 | 249 | 253 | 275 | 313 | 354 | 388 | 416 | 434 | 455 | 470 | 480 | 479 | 466 | 450 | 437 | 424 | 394 | 361 |
| 7/14/2019 | 333 | 308 | 291 | 279 | 272 | 268 | 268 | 271 | 293 | 330 | 372 | 412 | 447 | 474 | 495 | 507 | 513 | 507 | 494 | 473 | 452 | 435 | 399 | 361 |
| 7/15/2019 | 328 | 303 | 287 | 277 | 275 | 284 | 304 | 321 | 342 | 374 | 410 | 450 | 488 | 519 | 541 | 554 | 564 | 570 | 556 | 517 | 490 | 470 | 422 | 387 |
| 7/16/2019 | 337 | 313 | 294 | 283 | 280 | 288 | 310 | 347 | 376 | 395 | 446 | 482 | 518 | 550 | 568 | 578 | 567 | 552 | 534 | 524 | 509 | 496 | 456 | 413 |
| 7/17/2019 | 379 | 352 | 316 | 297 | 294 | 303 | 323 | 355 | 387 | 414 | 455 | 488 | 523 | 545 | 562 | 534 | 518 | 510 | 487 | 471 | 455 | 449 | 436 | 403 |
| 7/18/2019 | 370 | 345 | 312 | 294 | 290 | 299 | 320 | 352 | 377 | 410 | 437 | 481 | 515 | 540 | 534 | 536 | 494 | 474 | 475 | 474 | 452 | 432 | 399 | 380 |
| 7/19/2019 | 352 | 319 | 295 | 281 | 278 | 287 | 311 | 348 | 365 | 385 | 405 | 433 | 456 | 484 | 517 | 468 | 412 | 393 | 382 | 378 | 385 | 365 | 342 | 325 |
| 7/20/2019 | 299 | 281 | 255 | 243 | 238 | 238 | 243 | 250 | 276 | 315 | 357 | 392 | 423 | 439 | 418 | 426 | 421 | 397 | 393 | 385 | 373 | 363 | 339 | 313 |
| 7/21/2019 | 289 | 272 | 259 | 251 | 245 | 244 | 246 | 250 | 275 | 310 | 352 | 391 | 422 | 453 | 469 | 471 | 463 | 439 | 429 | 414 | 398 | 388 | 362 | 329 |
| 7/22/2019 | 300 | 276 | 262 | 252 | 251 | 259 | 277 | 295 | 316 | 343 | 375 | 414 | 447 | 473 | 471 | 448 | 439 | 442 | 426 | 426 | 412 | 401 | 376 | 342 |
| 7/23/2019 | 302 | 282 | 266 | 258 | 255 | 265 | 291 | 332 | 345 | 378 | 417 | 403 | 399 | 385 | 387 | 412 | 427 | 449 | 414 | 388 | 388 | 368 | 341 | 312 |
| 7/24/2019 | 289 | 270 | 256 | 252 | 251 | 263 | 291 | 324 | 340 | 347 | 355 | 373 | 396 | 424 | 439 | 459 | 467 | 462 | 447 | 426 | 407 | 391 | 365 | 330 |
| 7/25/2019 | 301 | 270 | 254 | 245 | 243 | 252 | 276 | 299 | 326 | 350 | 377 | 404 | 430 | 452 | 473 | 487 | 496 | 496 | 477 | 454 | 434 | 417 | 375 | 345 |
| 7/26/2019 | 318 | 290 | 274 | 260 | 256 | 265 | 287 | 308 | 326 | 343 | 362 | 387 | 405 | 424 | 445 | 470 | 480 | 485 | 474 | 447 | 420 | 399 | 375 | 343 |
| 7/27/2019 | 308 | 281 | 263 | 249 | 242 | 240 | 244 | 248 | 275 | 308 | 344 | 374 | 401 | 426 | 444 | 459 | 467 | 469 | 459 | 434 | 414 | 404 | 377 | 346 |
| 7/28/2019 | 315 | 294 | 278 | 266 | 258 | 258 | 262 | 262 | 282 | 320 | 356 | 387 | 416 | 438 | 457 | 467 | 478 | 478 | 449 | 426 | 407 | 395 | 364 | 332 |
| 7/29/2019 | 301 | 279 | 263 | 254 | 252 | 260 | 279 | 295 | 315 | 341 | 372 | 403 | 435 | 465 | 488 | 506 | 514 | 518 | 511 | 484 | 449 | 423 | 388 | 350 |
| 7/30/2019 | 308 | 287 | 271 | 259 | 255 | 263 | 285 | 301 | 321 | 352 | 386 | 422 | 457 | 489 | 507 | 520 | 524 | 521 | 498 | 477 | 465 | 437 | 406 | 365 |
| 7/31/2019 | 332 | 308 | 285 | 268 | 265 | 272 | 293 | 309 | 327 | 357 | 395 | 434 | 471 | 496 | 516 | 528 | 541 | 536 | 509 | 514 | 486 | 471 | 429 | 390 |

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
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| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 8/1/2019 | 354 | 324 | 306 | 283 | 280 | 288 | 316 | 332 | 354 | 385 | 409 | 443 | 478 | 491 | 505 | 523 | 500 | 476 | 442 | 438 | 438 | 412 | 377 | 340 |
| 8/2/2019 | 315 | 287 | 271 | 258 | 255 | 264 | 288 | 317 | 337 | 365 | 393 | 424 | 453 | 482 | 504 | 503 | 454 | 428 | 415 | 396 | 390 | 392 | 365 | 336 |
| 8/3/2019 | 305 | 288 | 269 | 258 | 253 | 254 | 260 | 264 | 288 | 323 | 356 | 388 | 415 | 437 | 430 | 414 | 433 | 450 | 451 | 436 | 406 | 381 | 349 | 320 |
| 8/4/2019 | 293 | 272 | 257 | 248 | 242 | 241 | 243 | 245 | 270 | 304 | 343 | 380 | 416 | 446 | 472 | 490 | 502 | 505 | 496 | 477 | 456 | 437 | 412 | 376 |
| 8/5/2019 | 342 | 316 | 297 | 286 | 282 | 288 | 305 | 320 | 344 | 369 | 395 | 432 | 462 | 489 | 474 | 422 | 413 | 405 | 400 | 404 | 390 | 385 | 353 | 325 |
| 8/6/2019 | 290 | 272 | 259 | 252 | 250 | 260 | 286 | 303 | 326 | 370 | 397 | 433 | 465 | 495 | 509 | 479 | 483 | 492 | 473 | 468 | 462 | 436 | 405 | 375 |
| 8/7/2019 | 349 | 319 | 295 | 278 | 276 | 287 | 311 | 334 | 370 | 400 | 430 | 465 | 502 | 532 | 560 | 568 | 563 | 559 | 536 | 502 | 464 | 438 | 406 | 381 |
| 8/8/2019 | 347 | 316 | 295 | 283 | 282 | 293 | 319 | 345 | 369 | 402 | 445 | 482 | 522 | 552 | 566 | 531 | 516 | 510 | 487 | 467 | 464 | 450 | 406 | 371 |
| 8/9/2019 | 347 | 328 | 302 | 292 | 291 | 302 | 324 | 349 | 380 | 408 | 449 | 485 | 513 | 544 | 576 | 590 | 580 | 561 | 541 | 518 | 484 | 471 | 447 | 408 |
| 8/10/2019 | 369 | 346 | 331 | 315 | 308 | 307 | 314 | 316 | 338 | 375 | 415 | 455 | 493 | 524 | 545 | 560 | 564 | 526 | 465 | 438 | 426 | 409 | 382 | 350 |
| 8/11/2019 | 323 | 306 | 291 | 280 | 277 | 278 | 283 | 285 | 312 | 349 | 388 | 429 | 469 | 498 | 518 | 530 | 546 | 554 | 544 | 530 | 514 | 491 | 453 | 414 |
| 8/12/2019 | 380 | 355 | 338 | 328 | 325 | 332 | 356 | 366 | 381 | 412 | 451 | 493 | 527 | 552 | 568 | 553 | 508 | 506 | 511 | 480 | 452 | 449 | 403 | 363 |
| 8/13/2019 | 330 | 311 | 300 | 292 | 291 | 304 | 335 | 376 | 372 | 419 | 472 | 487 | 541 | 551 | 586 | 580 | 585 | 589 | 566 | 498 | 479 | 457 | 420 | 384 |
| 8/14/2019 | 361 | 340 | 311 | 298 | 297 | 309 | 340 | 385 | 396 | 441 | 460 | 517 | 547 | 569 | 606 | 616 | 600 | 591 | 561 | 527 | 485 | 456 | 413 | 375 |
| 8/15/2019 | 342 | 322 | 303 | 287 | 285 | 295 | 324 | 368 | 367 | 408 | 437 | 465 | 496 | 536 | 561 | 576 | 569 | 549 | 519 | 492 | 467 | 436 | 396 | 363 |
| 8/16/2019 | 339 | 320 | 301 | 293 | 291 | 304 | 335 | 382 | 387 | 415 | 436 | 468 | 514 | 537 | 570 | 562 | 551 | 534 | 484 | 460 | 438 | 417 | 386 | 361 |
| 8/17/2019 | 328 | 308 | 291 | 277 | 272 | 275 | 283 | 288 | 310 | 342 | 377 | 415 | 438 | 415 | 396 | 409 | 419 | 408 | 392 | 378 | 374 | 366 | 346 | 322 |
| 8/18/2019 | 301 | 284 | 273 | 264 | 260 | 263 | 270 | 277 | 295 | 321 | 337 | 346 | 349 | 346 | 352 | 357 | 360 | 366 | 371 | 372 | 378 | 370 | 345 | 327 |
| 8/19/2019 | 302 | 281 | 269 | 265 | 267 | 281 | 312 | 328 | 333 | 348 | 366 | 381 | 397 | 427 | 439 | 451 | 453 | 432 | 430 | 416 | 409 | 391 | 357 | 324 |
| 8/20/2019 | 298 | 280 | 267 | 261 | 261 | 275 | 309 | 327 | 332 | 354 | 385 | 416 | 445 | 464 | 473 | 461 | 482 | 482 | 459 | 449 | 443 | 422 | 388 | 354 |
| 8/21/2019 | 328 | 308 | 289 | 279 | 275 | 287 | 315 | 334 | 357 | 384 | 395 | 423 | 447 | 464 | 478 | 472 | 466 | 461 | 452 | 441 | 435 | 422 | 386 | 349 |
| 8/22/2019 | 320 | 303 | 284 | 274 | 272 | 284 | 315 | 329 | 346 | 377 | 425 | 465 | 493 | 508 | 529 | 537 | 517 | 481 | 465 | 448 | 441 | 421 | 388 | 354 |
| 8/23/2019 | 324 | 306 | 292 | 279 | 279 | 291 | 319 | 339 | 365 | 389 | 432 | 464 | 495 | 523 | 544 | 553 | 546 | 528 | 481 | 458 | 448 | 431 | 399 | 375 |
| 8/24/2019 | 340 | 318 | 301 | 290 | 283 | 284 | 288 | 290 | 314 | 357 | 393 | 434 | 470 | 498 | 518 | 532 | 542 | 543 | 533 | 508 | 481 | 448 | 407 | 373 |
| 8/25/2019 | 341 | 318 | 299 | 286 | 277 | 272 | 275 | 277 | 298 | 327 | 356 | 392 | 425 | 445 | 465 | 486 | 496 | 497 | 482 | 467 | 460 | 441 | 407 | 368 |
| 8/26/2019 | 334 | 309 | 292 | 283 | 282 | 293 | 321 | 339 | 349 | 363 | 369 | 373 | 379 | 398 | 423 | 442 | 456 | 482 | 472 | 437 | 424 | 400 | 368 | 331 |
| 8/27/2019 | 299 | 278 | 266 | 258 | 259 | 274 | 310 | 351 | 369 | 367 | 391 | 421 | 449 | 459 | 431 | 426 | 444 | 432 | 404 | 399 | 401 | 384 | 354 | 321 |
| 8/28/2019 | 292 | 272 | 259 | 253 | 254 | 267 | 300 | 318 | 327 | 341 | 356 | 383 | 414 | 454 | 492 | 519 | 530 | 531 | 520 | 497 | 482 | 458 | 410 | 371 |
| 8/29/2019 | 334 | 307 | 288 | 274 | 270 | 282 | 312 | 348 | 351 | 381 | 411 | 431 | 466 | 497 | 523 | 543 | 555 | 554 | 527 | 506 | 480 | 442 | 397 | 354 |
| 8/30/2019 | 316 | 289 | 270 | 257 | 253 | 265 | 293 | 327 | 338 | 360 | 393 | 442 | 478 | 476 | 495 | 511 | 517 | 510 | 490 | 462 | 449 | 423 | 398 | 368 |
| 8/31/2019 | 341 | 317 | 301 | 288 | 281 | 281 | 288 | 296 | 319 | 352 | 382 | 411 | 437 | 465 | 488 | 503 | 509 | 506 | 463 | 434 | 424 | 403 | 374 | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
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| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 9/1/2019 | 324 | 307 | 296 | 286 | 279 | 277 | 281 | 286 | 304 | 333 | 367 | 402 | 438 | 459 | 480 | 487 | 503 | 502 | 468 | 436 | 428 | 409 | 380 | 353 |
| 9/2/2019 | 327 | 306 | 290 | 280 | 277 | 282 | 291 | 294 | 308 | 332 | 360 | 391 | 420 | 444 | 470 | 489 | 501 | 505 | 497 | 478 | 467 | 438 | 400 | 361 |
| 9/3/2019 | 326 | 301 | 284 | 273 | 272 | 283 | 313 | 329 | 342 | 367 | 403 | 430 | 460 | 490 | 515 | 532 | 542 | 546 | 529 | 507 | 494 | 459 | 422 | 375 |
| 9/4/2019 | 345 | 321 | 299 | 280 | 277 | 288 | 318 | 336 | 347 | 377 | 413 | 449 | 482 | 511 | 530 | 547 | 569 | 571 | 552 | 530 | 512 | 478 | 439 | 400 |
| 9/5/2019 | 364 | 336 | 313 | 293 | 289 | 298 | 323 | 345 | 359 | 385 | 417 | 459 | 500 | 542 | 570 | 591 | 597 | 599 | 588 | 560 | 540 | 504 | 459 | 417 |
| 9/6/2019 | 380 | 352 | 323 | 301 | 287 | 291 | 312 | 333 | 345 | 361 | 397 | 425 | 451 | 479 | 504 | 522 | 546 | 537 | 511 | 465 | 448 | 422 | 395 | 354 |
| 9/7/2019 | 332 | 301 | 275 | 255 | 246 | 245 | 249 | 251 | 272 | 310 | 353 | 401 | 445 | 482 | 509 | 526 | 536 | 535 | 521 | 494 | 474 | 444 | 410 | 377 |
| 9/8/2019 | 345 | 320 | 301 | 288 | 279 | 276 | 277 | 279 | 300 | 345 | 399 | 451 | 495 | 525 | 547 | 564 | 572 | 570 | 553 | 527 | 513 | 480 | 439 | 399 |
| 9/9/2019 | 364 | 338 | 319 | 305 | 302 | 312 | 339 | 328 | 364 | 393 | 427 | 464 | 500 | 529 | 553 | 568 | 574 | 582 | 557 | 538 | 510 | 477 | 431 | 384 |
| 9/10/2019 | 336 | 310 | 294 | 282 | 278 | 288 | 316 | 338 | 357 | 379 | 420 | 463 | 515 | 548 | 559 | 539 | 526 | 526 | 515 | 506 | 487 | 464 | 417 | 377 |
| 9/11/2019 | 352 | 323 | 306 | 285 | 282 | 292 | 321 | 351 | 371 | 400 | 429 | 462 | 495 | 522 | 545 | 558 | 552 | 561 | 546 | 520 | 497 | 471 | 431 | 383 |
| 9/12/2019 | 347 | 320 | 290 | 275 | 271 | 280 | 309 | 345 | 367 | 395 | 436 | 466 | 489 | 517 | 542 | 558 | 545 | 546 | 529 | 501 | 491 | 459 | 419 | 379 |
| 9/13/2019 | 355 | 310 | 289 | 276 | 269 | 281 | 310 | 347 | 363 | 393 | 413 | 445 | 468 | 514 | 515 | 518 | 513 | 506 | 480 | 465 | 441 | 412 | 383 | 348 |
| 9/14/2019 | 321 | 306 | 274 | 260 | 254 | 257 | 263 | 269 | 289 | 325 | 363 | 398 | 432 | 458 | 479 | 496 | 505 | 502 | 487 | 461 | 443 | 417 | 388 | 361 |
| 9/15/2019 | 329 | 304 | 285 | 272 | 263 | 262 | 267 | 271 | 289 | 319 | 362 | 406 | 448 | 480 | 504 | 517 | 526 | 530 | 520 | 499 | 482 | 448 | 408 | 370 |
| 9/16/2019 | 335 | 309 | 289 | 278 | 275 | 283 | 308 | 326 | 338 | 371 | 399 | 424 | 448 | 467 | 485 | 510 | 529 | 531 | 515 | 491 | 472 | 440 | 406 | 371 |
| 9/17/2019 | 319 | 295 | 278 | 268 | 265 | 276 | 307 | 338 | 357 | 386 | 415 | 457 | 493 | 528 | 567 | 581 | 582 | 578 | 563 | 547 | 533 | 497 | 450 | 397 |
| 9/18/2019 | 368 | 337 | 311 | 295 | 292 | 303 | 337 | 356 | 369 | 386 | 422 | 450 | 499 | 566 | 587 | 588 | 528 | 507 | 479 | 464 | 456 | 427 | 391 | 358 |
| 9/19/2019 | 325 | 296 | 280 | 269 | 268 | 277 | 309 | 338 | 335 | 361 | 372 | 401 | 425 | 449 | 469 | 473 | 469 | 467 | 444 | 439 | 427 | 396 | 355 | 327 |
| 9/20/2019 | 297 | 277 | 255 | 236 | 234 | 244 | 277 | 304 | 314 | 335 | 361 | 404 | 421 | 447 | 450 | 474 | 469 | 475 | 449 | 428 | 412 | 389 | 368 | 346 |
| 9/21/2019 | 319 | 293 | 263 | 248 | 242 | 241 | 246 | 251 | 266 | 296 | 331 | 365 | 392 | 408 | 421 | 431 | 436 | 435 | 420 | 400 | 392 | 369 | 344 | 318 |
| 9/22/2019 | 291 | 267 | 249 | 237 | 230 | 229 | 232 | 234 | 250 | 285 | 319 | 352 | 379 | 401 | 422 | 438 | 453 | 458 | 446 | 427 | 413 | 383 | 348 | 313 |
| 9/23/2019 | 285 | 263 | 247 | 239 | 238 | 251 | 280 | 301 | 308 | 326 | 357 | 386 | 408 | 436 | 457 | 478 | 493 | 498 | 481 | 456 | 436 | 405 | 357 | 324 |
| 9/24/2019 | 286 | 263 | 248 | 239 | 238 | 250 | 283 | 310 | 305 | 341 | 379 | 416 | 459 | 486 | 516 | 540 | 541 | 541 | 527 | 510 | 490 | 455 | 417 | 376 |
| 9/25/2019 | 344 | 310 | 291 | 274 | 273 | 287 | 324 | 366 | 368 | 388 | 407 | 458 | 507 | 549 | 568 | 580 | 574 | 569 | 546 | 529 | 509 | 485 | 444 | 408 |
| 9/26/2019 | 368 | 333 | 306 | 293 | 289 | 300 | 335 | 375 | 381 | 401 | 437 | 475 | 505 | 535 | 571 | 583 | 583 | 575 | 555 | 538 | 518 | 479 | 438 | 393 |
| 9/27/2019 | 368 | 337 | 313 | 300 | 295 | 306 | 335 | 364 | 374 | 394 | 429 | 474 | 516 | 552 | 572 | 574 | 569 | 545 | 531 | 508 | 492 | 459 | 432 | 398 |
| 9/28/2019 | 372 | 336 | 310 | 294 | 287 | 287 | 292 | 296 | 310 | 334 | 367 | 409 | 439 | 466 | 490 | 503 | 508 | 502 | 484 | 461 | 443 | 413 | 382 | 358 |
| 9/29/2019 | 336 | 311 | 290 | 272 | 260 | 256 | 258 | 260 | 277 | 313 | 348 | 380 | 412 | 440 | 465 | 481 | 490 | 492 | 478 | 458 | 441 | 413 | 380 | 350 |
| 9/30/2019 | 323 | 298 | 281 | 271 | 269 | 278 | 301 | 318 | 328 | 357 | 392 | 431 | 465 | 496 | 522 | 539 | 547 | 547 | 527 | 507 | 485 | 455 | 415 | 370 |

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
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| 10/1/2019 | 333 | 307 | 288 | 276 | 271 | 283 | 317 | 339 | 344 | 371 | 406 | 441 | 467 | 500 | 501 | 520 | 525 | 511 | 469 | 453 | 440 | 418 | 387 | 349 |
| 10/2/2019 | 316 | 295 | 275 | 259 | 256 | 268 | 300 | 327 | 340 | 348 | 380 | 419 | 446 | 488 | 508 | 524 | 543 | 524 | 512 | 495 | 473 | 430 | 396 | 359 |
| 10/3/2019 | 330 | 308 | 282 | 270 | 265 | 272 | 304 | 343 | 335 | 355 | 390 | 428 | 463 | 497 | 534 | 559 | 558 | 557 | 529 | 510 | 488 | 452 | 408 | 365 |
| 10/4/2019 | 334 | 311 | 288 | 269 | 265 | 275 | 304 | 338 | 344 | 381 | 411 | 436 | 481 | 516 | 550 | 566 | 564 | 551 | 523 | 495 | 472 | 445 | 412 | 380 |
| 10/5/2019 | 346 | 325 | 301 | 282 | 273 | 271 | 275 | 278 | 291 | 324 | 364 | 404 | 432 | 456 | 470 | 479 | 482 | 477 | 454 | 435 | 423 | 401 | 375 | 348 |
| 10/6/2019 | 320 | 299 | 283 | 273 | 265 | 263 | 265 | 271 | 285 | 312 | 340 | 363 | 397 | 423 | 441 | 457 | 466 | 467 | 445 | 433 | 420 | 393 | 362 | 332 |
| 10/7/2019 | 304 | 282 | 266 | 257 | 258 | 271 | 300 | 320 | 319 | 333 | 347 | 364 | 382 | 394 | 403 | 412 | 416 | 440 | 443 | 437 | 421 | 396 | 366 | 332 |
| 10/8/2019 | 289 | 266 | 251 | 243 | 241 | 254 | 288 | 324 | 328 | 359 | 373 | 402 | 421 | 446 | 475 | 488 | 496 | 494 | 479 | 471 | 443 | 412 | 372 | 330 |
| 10/9/2019 | 320 | 283 | 269 | 245 | 244 | 257 | 289 | 332 | 324 | 342 | 358 | 395 | 420 | 456 | 474 | 473 | 469 | 469 | 465 | 449 | 442 | 411 | 368 | 321 |
| 10/10/2019 | 293 | 264 | 238 | 225 | 223 | 234 | 268 | 305 | 302 | 312 | 349 | 372 | 397 | 419 | 449 | 463 | 457 | 454 | 429 | 419 | 400 | 372 | 329 | 293 |
| 10/11/2019 | 268 | 244 | 231 | 218 | 215 | 225 | 256 | 287 | 297 | 311 | 331 | 369 | 379 | 401 | 417 | 428 | 433 | 428 | 415 | 394 | 371 | 343 | 322 | 295 |
| 10/12/2019 | 267 | 255 | 224 | 213 | 208 | 209 | 216 | 223 | 236 | 263 | 290 | 320 | 344 | 366 | 388 | 405 | 415 | 412 | 391 | 385 | 370 | 345 | 319 | 293 |
| 10/13/2019 | 270 | 250 | 236 | 226 | 219 | 218 | 222 | 226 | 241 | 273 | 308 | 342 | 372 | 401 | 423 | 436 | 438 | 436 | 422 | 416 | 403 | 378 | 348 | 316 |
| 10/14/2019 | 288 | 267 | 252 | 243 | 242 | 255 | 281 | 301 | 308 | 334 | 364 | 396 | 428 | 453 | 474 | 485 | 488 | 494 | 466 | 437 | 415 | 392 | 365 | 329 |
| 10/15/2019 | 288 | 269 | 257 | 250 | 249 | 262 | 297 | 339 | 342 | 337 | 344 | 358 | 358 | 363 | 374 | 387 | 362 | 378 | 377 | 392 | 388 | 363 | 337 | 314 |
| 10/16/2019 | 288 | 269 | 257 | 247 | 247 | 259 | 295 | 351 | 352 | 356 | 366 | 382 | 397 | 429 | 425 | 420 | 404 | 407 | 403 | 407 | 389 | 358 | 340 | 306 |
| 10/17/2019 | 287 | 260 | 224 | 206 | 203 | 214 | 243 | 282 | 281 | 277 | 293 | 296 | 308 | 302 | 303 | 323 | 311 | 304 | 313 | 324 | 319 | 290 | 270 | 241 |
| 10/18/2019 | 230 | 222 | 197 | 186 | 190 | 201 | 233 | 275 | 267 | 271 | 287 | 288 | 282 | 290 | 286 | 287 | 289 | 279 | 283 | 297 | 286 | 273 | 267 | 249 |
| 10/19/2019 | 213 | 202 | 194 | 192 | 192 | 198 | 208 | 221 | 235 | 257 | 279 | 293 | 302 | 304 | 311 | 320 | 337 | 341 | 337 | 338 | 326 | 308 | 282 | 261 |
| 10/20/2019 | 239 | 222 | 209 | 202 | 198 | 198 | 203 | 212 | 222 | 239 | 253 | 262 | 270 | 276 | 287 | 303 | 317 | 327 | 324 | 330 | 323 | 303 | 276 | 250 |
| 10/21/2019 | 227 | 210 | 199 | 195 | 196 | 208 | 238 | 260 | 265 | 277 | 294 | 310 | 327 | 339 | 348 | 364 | 372 | 377 | 394 | 407 | 383 | 350 | 320 | 297 |
| 10/22/2019 | 267 | 250 | 241 | 235 | 235 | 247 | 283 | 312 | 320 | 319 | 327 | 347 | 360 | 361 | 369 | 372 | 360 | 356 | 337 | 340 | 324 | 304 | 268 | 240 |
| 10/23/2019 | 220 | 205 | 192 | 186 | 186 | 199 | 241 | 269 | 265 | 261 | 268 | 274 | 284 | 294 | 299 | 300 | 299 | 298 | 299 | 305 | 302 | 287 | 265 | 264 |
| 10/24/2019 | 241 | 205 | 192 | 186 | 187 | 201 | 237 | 266 | 274 | 280 | 288 | 294 | 296 | 298 | 318 | 328 | 325 | 327 | 330 | 346 | 334 | 319 | 303 | 299 |
| 10/25/2019 | 275 | 245 | 226 | 216 | 216 | 228 | 261 | 283 | 313 | 335 | 354 | 377 | 395 | 391 | 403 | 418 | 405 | 400 | 393 | 407 | 395 | 358 | 336 | 310 |
| 10/26/2019 | 281 | 262 | 245 | 235 | 230 | 232 | 241 | 251 | 264 | 284 | 306 | 322 | 339 | 361 | 376 | 379 | 374 | 370 | 367 | 373 | 366 | 351 | 333 | 316 |
| 10/27/2019 | 298 | 281 | 269 | 259 | 251 | 248 | 248 | 252 | 259 | 271 | 285 | 298 | 309 | 328 | 348 | 361 | 368 | 367 | 356 | 358 | 343 | 320 | 290 | 260 |
| 10/28/2019 | 235 | 218 | 206 | 200 | 201 | 215 | 246 | 268 | 270 | 282 | 298 | 319 | 339 | 361 | 368 | 377 | 397 | 399 | 396 | 406 | 387 | 358 | 330 | 300 |
| 10/29/2019 | 273 | 255 | 242 | 236 | 236 | 250 | 286 | 329 | 335 | 328 | 340 | 345 | 350 | 361 | 363 | 361 | 349 | 363 | 363 | 377 | 375 | 347 | 319 | 302 |
| 10/30/2019 | 287 | 267 | 244 | 226 | 227 | 244 | 282 | 319 | 329 | 349 | 348 | 364 | 382 | 398 | 398 | 403 | 401 | 396 | 393 | 398 | 388 | 369 | 346 | 324 |
| 10/31/2019 | 299 | 279 | 267 | 259 | 259 | 274 | 308 | 351 | 353 | 380 | 403 | 428 | 445 | 456 | 478 | 457 | 449 | 416 | 372 | 342 | 312 | 288 | 268 | 242 |

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
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| 11/1/2019 | 223 | 213 | 199 | 190 | 191 | 206 | 241 | 273 | 280 | 296 | 313 | 315 | 309 | 301 | 288 | 282 | 273 | 282 | 279 | 296 | 294 | 272 | 265 | 251 |
| 11/2/2019 | 242 | 234 | 225 | 212 | 212 | 218 | 229 | 246 | 259 | 271 | 274 | 272 | 267 | 261 | 254 | 251 | 249 | 251 | 252 | 269 | 267 | 260 | 246 | 230 |
| 11/3/2019 | 216 | 203 | 200 | 201 | 204 | 213 | 227 | 245 | 262 | 270 | 268 | 264 | 262 | 261 | 262 | 263 | 265 | 273 | 291 | 287 | 277 | 261 | 241 | 223 |
| 11/4/2019 | 211 | 201 | 196 | 196 | 201 | 219 | 253 | 270 | 270 | 272 | 277 | 280 | 284 | 287 | 288 | 288 | 293 | 312 | 332 | 331 | 313 | 306 | 282 | 241 |
| 11/5/2019 | 222 | 209 | 199 | 197 | 200 | 214 | 249 | 280 | 299 | 314 | 314 | 321 | 337 | 353 | 365 | 365 | 368 | 370 | 376 | 365 | 342 | 319 | 292 | 269 |
| 11/6/2019 | 250 | 229 | 216 | 206 | 207 | 220 | 252 | 280 | 294 | 314 | 321 | 331 | 347 | 359 | 364 | 371 | 376 | 362 | 380 | 361 | 341 | 318 | 292 | 267 |
| 11/7/2019 | 243 | 227 | 207 | 202 | 205 | 220 | 254 | 276 | 284 | 293 | 305 | 319 | 340 | 341 | 337 | 335 | 356 | 335 | 366 | 366 | 333 | 311 | 287 | 264 |
| 11/8/2019 | 245 | 231 | 214 | 211 | 214 | 226 | 252 | 284 | 299 | 295 | 310 | 304 | 293 | 291 | 290 | 288 | 292 | 302 | 308 | 307 | 290 | 263 | 246 | 233 |
| 11/9/2019 | 213 | 205 | 195 | 189 | 191 | 196 | 208 | 222 | 241 | 252 | 256 | 256 | 255 | 253 | 251 | 252 | 253 | 257 | 271 | 267 | 264 | 255 | 245 | 233 |
| 11/10/2019 | 225 | 218 | 215 | 215 | 218 | 225 | 240 | 257 | 273 | 275 | 270 | 263 | 260 | 257 | 254 | 254 | 257 | 264 | 280 | 277 | 270 | 259 | 246 | 232 |
| 11/11/2019 | 222 | 214 | 211 | 211 | 216 | 228 | 247 | 262 | 271 | 273 | 272 | 273 | 276 | 280 | 283 | 283 | 287 | 295 | 312 | 306 | 292 | 274 | 251 | 230 |
| 11/12/2019 | 213 | 201 | 195 | 192 | 194 | 209 | 244 | 264 | 270 | 278 | 285 | 282 | 281 | 280 | 279 | 280 | 292 | 315 | 342 | 345 | 341 | 332 | 318 | 306 |
| 11/13/2019 | 295 | 289 | 288 | 292 | 308 | 339 | 385 | 409 | 400 | 380 | 359 | 340 | 324 | 313 | 305 | 303 | 311 | 334 | 367 | 373 | 367 | 349 | 324 | 302 |
| 11/14/2019 | 284 | 272 | 266 | 264 | 269 | 289 | 330 | 345 | 339 | 331 | 326 | 323 | 317 | 310 | 306 | 306 | 312 | 332 | 349 | 346 | 335 | 318 | 296 | 276 |
| 11/15/2019 | 261 | 252 | 249 | 250 | 258 | 277 | 315 | 334 | 333 | 331 | 332 | 333 | 330 | 326 | 321 | 320 | 327 | 338 | 346 | 336 | 324 | 309 | 293 | 277 |
| 11/16/2019 | 263 | 254 | 248 | 246 | 247 | 256 | 271 | 286 | 305 | 321 | 327 | 324 | 318 | 311 | 302 | 297 | 298 | 307 | 319 | 314 | 306 | 293 | 278 | 262 |
| 11/17/2019 | 249 | 240 | 237 | 235 | 236 | 244 | 258 | 271 | 285 | 289 | 285 | 279 | 274 | 270 | 265 | 264 | 267 | 282 | 300 | 298 | 290 | 277 | 258 | 239 |
| 11/18/2019 | 224 | 214 | 209 | 210 | 216 | 236 | 276 | 300 | 297 | 292 | 287 | 284 | 282 | 280 | 279 | 278 | 278 | 286 | 308 | 308 | 300 | 285 | 266 | 247 |
| 11/19/2019 | 234 | 227 | 225 | 229 | 239 | 266 | 313 | 339 | 333 | 317 | 304 | 293 | 287 | 282 | 278 | 277 | 285 | 291 | 313 | 315 | 307 | 293 | 274 | 254 |
| 11/20/2019 | 241 | 233 | 230 | 232 | 241 | 265 | 309 | 330 | 322 | 308 | 298 | 290 | 284 | 281 | 279 | 280 | 280 | 290 | 311 | 311 | 304 | 293 | 274 | 257 |
| 11/21/2019 | 244 | 236 | 234 | 237 | 246 | 271 | 317 | 340 | 332 | 314 | 300 | 291 | 284 | 280 | 279 | 279 | 280 | 288 | 308 | 307 | 298 | 284 | 264 | 245 |
| 11/22/2019 | 232 | 224 | 221 | 221 | 227 | 245 | 281 | 301 | 299 | 294 | 292 | 301 | 295 | 299 | 293 | 286 | 284 | 286 | 295 | 286 | 276 | 264 | 250 | 235 |
| 11/23/2019 | 221 | 211 | 204 | 200 | 200 | 205 | 216 | 224 | 240 | 254 | 267 | 274 | 278 | 279 | 278 | 276 | 279 | 291 | 297 | 291 | 282 | 267 | 248 | 227 |
| 11/24/2019 | 210 | 200 | 193 | 190 | 191 | 199 | 213 | 229 | 251 | 266 | 272 | 275 | 273 | 269 | 264 | 263 | 267 | 283 | 305 | 307 | 303 | 295 | 284 | 270 |
| 11/25/2019 | 260 | 254 | 254 | 259 | 268 | 289 | 325 | 346 | 348 | 331 | 315 | 302 | 293 | 284 | 279 | 283 | 287 | 295 | 316 | 316 | 311 | 300 | 285 | 271 |
| 11/26/2019 | 260 | 255 | 253 | 257 | 265 | 285 | 319 | 336 | 332 | 321 | 311 | 308 | 290 | 279 | 277 | 275 | 273 | 282 | 294 | 288 | 279 | 266 | 248 | 231 |
| 11/27/2019 | 217 | 207 | 201 | 199 | 202 | 215 | 238 | 253 | 261 | 269 | 280 | 290 | 295 | 299 | 303 | 304 | 302 | 304 | 312 | 304 | 293 | 279 | 261 | 242 |
| 11/28/2019 | 223 | 208 | 196 | 190 | 188 | 192 | 202 | 211 | 230 | 249 | 262 | 266 | 265 | 260 | 254 | 247 | 239 | 233 | 238 | 234 | 232 | 227 | 220 | 211 |
| 11/29/2019 | 202 | 196 | 193 | 193 | 197 | 207 | 223 | 233 | 244 | 249 | 248 | 245 | 244 | 244 | 244 | 245 | 247 | 251 | 261 | 255 | 249 | 241 | 230 | 218 |
| 11/30/2019 | 207 | 200 | 197 | 197 | 200 | 208 | 220 | 229 | 244 | 250 | 251 | 251 | 253 | 258 | 260 | 261 | 261 | 267 | 281 | 274 | 267 | 259 | 247 | 233 |

TYSP Year 2020
Staff's Data Request # 1
Question No. 6

| Date | Hourly System Load (MW) | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 12/1/2019 | 220 | 208 | 202 | 198 | 197 | 200 | 208 | 214 | 231 | 254 | 267 | 263 | 262 | 262 | 262 | 266 | 270 | 279 | 295 | 291 | 281 | 269 | 249 | 228 |
| 12/2/2019 | 212 | 201 | 195 | 196 | 204 | 226 | 272 | 303 | 309 | 310 | 307 | 302 | 296 | 290 | 286 | 286 | 294 | 319 | 353 | 360 | 358 | 348 | 329 | 313 |
| 12/3/2019 | 302 | 297 | 297 | 304 | 319 | 352 | 407 | 434 | 423 | 396 | 372 | 350 | 331 | 316 | 304 | 301 | 307 | 331 | 368 | 375 | 372 | 361 | 341 | 324 |
| 12/4/2019 | 311 | 305 | 305 | 312 | 324 | 353 | 403 | 427 | 411 | 379 | 350 | 328 | 310 | 297 | 289 | 286 | 290 | 308 | 334 | 338 | 336 | 324 | 305 | 286 |
| 12/5/2019 | 273 | 267 | 266 | 271 | 285 | 314 | 364 | 389 | 376 | 350 | 327 | 308 | 295 | 285 | 279 | 278 | 281 | 294 | 319 | 322 | 320 | 309 | 291 | 274 |
| 12/6/2019 | 263 | 258 | 258 | 262 | 272 | 297 | 340 | 362 | 351 | 332 | 314 | 302 | 292 | 283 | 277 | 275 | 276 | 285 | 298 | 292 | 283 | 273 | 259 | 244 |
| 12/7/2019 | 230 | 219 | 213 | 210 | 212 | 220 | 231 | 240 | 254 | 265 | 269 | 268 | 268 | 266 | 262 | 259 | 262 | 275 | 286 | 280 | 275 | 266 | 253 | 238 |
| 12/8/2019 | 222 | 211 | 205 | 201 | 202 | 208 | 220 | 230 | 246 | 260 | 264 | 264 | 266 | 267 | 267 | 268 | 270 | 285 | 305 | 303 | 294 | 279 | 259 | 236 |
| 12/9/2019 | 219 | 207 | 199 | 197 | 200 | 215 | 249 | 269 | 270 | 278 | 284 | 292 | 296 | 297 | 295 | 298 | 298 | 308 | 328 | 323 | 312 | 294 | 271 | 246 |
| 12/10/2019 | 227 | 214 | 205 | 201 | 203 | 216 | 251 | 275 | 281 | 290 | 298 | 311 | 319 | 325 | 328 | 329 | 328 | 330 | 343 | 336 | 325 | 308 | 283 | 247 |
| 12/11/2019 | 222 | 205 | 195 | 192 | 195 | 213 | 253 | 281 | 287 | 289 | 291 | 292 | 295 | 295 | 297 | 303 | 314 | 336 | 357 | 356 | 346 | 329 | 305 | 279 |
| 12/12/2019 | 261 | 249 | 242 | 241 | 247 | 267 | 308 | 332 | 330 | 329 | 327 | 321 | 310 | 305 | 300 | 297 | 305 | 321 | 333 | 329 | 321 | 305 | 281 | 257 |
| 12/13/2019 | 239 | 227 | 222 | 220 | 225 | 244 | 282 | 307 | 307 | 310 | 314 | 313 | 310 | 307 | 303 | 301 | 303 | 315 | 323 | 314 | 306 | 294 | 277 | 257 |
| 12/14/2019 | 238 | 232 | 225 | 222 | 223 | 230 | 244 | 260 | 273 | 285 | 286 | 277 | 269 | 262 | 258 | 257 | 260 | 271 | 289 | 289 | 288 | 285 | 277 | 265 |
| 12/15/2019 | 255 | 250 | 248 | 249 | 254 | 264 | 281 | 296 | 311 | 307 | 291 | 275 | 268 | 264 | 260 | 259 | 262 | 273 | 292 | 293 | 287 | 276 | 259 | 242 |
| 12/16/2019 | 229 | 222 | 219 | 222 | 230 | 253 | 294 | 315 | 308 | 297 | 287 | 284 | 284 | 282 | 283 | 281 | 280 | 287 | 307 | 304 | 293 | 277 | 254 | 231 |
| 12/17/2019 | 215 | 205 | 198 | 196 | 198 | 211 | 246 | 269 | 273 | 281 | 288 | 294 | 299 | 291 | 286 | 283 | 283 | 288 | 297 | 294 | 289 | 279 | 265 | 252 |
| 12/18/2019 | 240 | 237 | 237 | 242 | 254 | 284 | 337 | 373 | 371 | 368 | 357 | 341 | 325 | 314 | 305 | 302 | 310 | 335 | 370 | 380 | 385 | 381 | 365 | 348 |
| 12/19/2019 | 337 | 334 | 336 | 345 | 361 | 392 | 435 | 455 | 440 | 413 | 384 | 355 | 330 | 313 | 300 | 297 | 301 | 321 | 353 | 363 | 366 | 357 | 339 | 318 |
| 12/20/2019 | 303 | 298 | 298 | 302 | 312 | 339 | 379 | 400 | 389 | 367 | 343 | 319 | 299 | 285 | 277 | 272 | 272 | 288 | 303 | 300 | 295 | 287 | 274 | 258 |
| 12/21/2019 | 246 | 237 | 229 | 230 | 230 | 231 | 236 | 240 | 240 | 241 | 270 | 271 | 266 | 261 | 257 | 256 | 262 | 277 | 286 | 282 | 278 | 271 | 259 | 244 |
| 12/22/2019 | 230 | 219 | 212 | 210 | 210 | 216 | 225 | 239 | 253 | 266 | 270 | 272 | 272 | 270 | 268 | 264 | 267 | 276 | 285 | 281 | 273 | 262 | 246 | 228 |
| 12/23/2019 | 214 | 208 | 204 | 205 | 212 | 227 | 253 | 274 | 281 | 285 | 283 | 277 | 270 | 267 | 263 | 262 | 262 | 275 | 293 | 292 | 289 | 279 | 264 | 246 |
| 12/24/2019 | 231 | 219 | 212 | 210 | 211 | 221 | 236 | 251 | 260 | 269 | 272 | 272 | 268 | 260 | 255 | 253 | 253 | 257 | 269 | 263 | 256 | 250 | 241 | 229 |
| 12/25/2019 | 217 | 209 | 204 | 202 | 204 | 211 | 223 | 234 | 246 | 251 | 250 | 246 | 243 | 241 | 238 | 236 | 233 | 235 | 245 | 243 | 239 | 234 | 225 | 213 |
| 12/26/2019 | 204 | 197 | 194 | 194 | 199 | 210 | 229 | 244 | 252 | 257 | 258 | 258 | 257 | 256 | 256 | 255 | 256 | 264 | 278 | 274 | 266 | 254 | 238 | 220 |
| 12/27/2019 | 205 | 196 | 190 | 188 | 189 | 198 | 216 | 231 | 238 | 248 | 258 | 265 | 268 | 271 | 274 | 275 | 273 | 275 | 285 | 279 | 270 | 258 | 243 | 227 |
| 12/28/2019 | 212 | 200 | 193 | 188 | 187 | 191 | 200 | 209 | 219 | 235 | 248 | 256 | 260 | 259 | 258 | 259 | 260 | 266 | 282 | 278 | 270 | 259 | 246 | 233 |
| 12/29/2019 | 219 | 208 | 200 | 196 | 194 | 197 | 204 | 212 | 224 | 239 | 250 | 259 | 264 | 265 | 265 | 266 | 267 | 279 | 292 | 288 | 280 | 269 | 255 | 240 |
| 12/30/2019 | 224 | 213 | 206 | 201 | 201 | 210 | 228 | 243 | 244 | 253 | 259 | 262 | 262 | 260 | 260 | 258 | 259 | 262 | 278 | 275 | 267 | 256 | 242 | 228 |
| 12/31/2019 | 216 | 209 | 207 | 208 | 216 | 231 | 257 | 281 | 297 | 298 | 293 | 283 | 272 | 264 | 258 | 255 | 258 | 268 | 291 | 291 | 288 | 283 | 275 | 269 |

TYSP Year 2020
Staff's Data Request # 1
Question No. 7

| Year | Month | Actual Peak Demand (MW) | Demand Response Activated (MW) | Estimated Peak Demand (MW) | Day | Hour | System-Average Temperature (Degrees F) |
|---|---|---|---|---|---|---|---|
| 2019 | 1 | 508 | 0 | 508 | 30 | 8 | 40 |
| | 2 | 407 | 0 | 407 | 14 | 9 | 50 |
| | 3 | 447 | 0 | 447 | 6 | 8 | 46 |
| | 4 | 449 | 0 | 449 | 30 | 18 | 75 |
| | 5 | 592 | 0 | 592 | 29 | 17 | 85 |
| | 6 | 580 | 0 | 580 | 4 | 16 | 85 |
| | 7 | 578 | 0 | 578 | 16 | 16 | 86 |
| | 8 | 616 | 0 | 616 | 14 | 16 | 86 |
| | 9 | 599 | 0 | 599 | 5 | 18 | 87 |
| | 10 | 565 | 0 | 565 | 4 | 16 | 83 |
| | 11 | 409 | 0 | 409 | 13 | 8 | 45 |
| | 12 | 455 | 0 | 455 | 19 | 8 | 43 |
| 2018 | 1 | 621 | 0 | 621 | 18 | 8 | 36 |
| | 2 | 433 | 0 | 433 | 1 | 9 | 61 |
| | 3 | 416 | 0 | 416 | 15 | 9 | 49 |
| | 4 | 390 | 0 | 390 | 23 | 18 | 72 |
| | 5 | 494 | 0 | 494 | 31 | 17 | 82 |
| | 6 | 596 | 0 | 596 | 20 | 16 | 88 |
| | 7 | 560 | 0 | 560 | 13 | 16 | 84 |
| | 8 | 558 | 0 | 558 | 28 | 16 | 84 |
| | 9 | 581 | 0 | 581 | 14 | 16 | 85 |
| | 10 | 507 | 0 | 507 | 3 | 18 | 82 |
| | 11 | 457 | 0 | 457 | 28 | 8 | 42 |
| | 12 | 505 | 0 | 505 | 12 | 8 | 43 |
| 2017 | 1 | 524 | 0 | 524 | 9 | 8 | 40 |
| | 2 | 247 | 0 | 247 | 17 | 8 | 53 |
| | 3 | 246 | 0 | 246 | 16 | 8 | 44 |
| | 4 | 475 | 0 | 475 | 28 | 18 | 78 |
| | 5 | 513 | 0 | 513 | 16 | 17 | 80 |
| | 6 | 517 | 0 | 517 | 23 | 15 | 83 |
| | 7 | 585 | 0 | 585 | 28 | 16 | 85 |
| | 8 | 551 | 0 | 551 | 18 | 16 | 88 |
| | 9 | 464 | 0 | 464 | 29 | 17 | 81 |
| | 10 | 514 | 0 | 514 | 10 | 15 | 83 |
| | 11 | 393 | 0 | 393 | 6 | 16 | 69 |
| | 12 | 490 | 0 | 490 | 11 | 8 | 45 |

**Notes**

(Include Notes Here)

TYSP Year 2020
Staff's Data Request # 1
Question No. 11a and 12a

# City of Tallahassee, Florida

2020 Electric System Load Forecast

## 2019 Load Forecast Comparison

Projected vs. Actual Energy Sales (MWh, Unless Otherwise Stated)

*Fiscal Year 2019*

| Line No. | Customer Class | | Actual (MWh) | Excluding DSM Projected [1] (MWh) | Excluding DSM % Over (Under) Actual | Including Actual DSM Projected [1] (MWh) | Including Actual DSM % Over (Under) Actual | Including Projected DSM Projected [1] (MWh) | Including Projected DSM % Over (Under) Actual |
|---|---|---|---|---|---|---|---|---|---|
| | (a) | | (b) | (c) | (d) | (e) | (f) | (g) | (h) |
| | Residential | | | | | | | | |
| 1 | Counts (#) | | 103,673 | 102,754 | (0.9%) | | | | |
| 2 | Average Consumption (kWh) | | 11,011 | 10,717 | (2.7%) | 10,690 | (2.9%) | 10,666 | (3.1%) |
| 3 | Energy Sales | | 1,141,544 | 1,101,221 | (3.5%) | 1,098,367 | (3.8%) | 1,095,995 | (4.0%) |
| 4 | General Service Non-Demand | | 185,810 | 187,304 | 0.8% | 187,296 | 0.8% | 187,240 | 0.8% |
| 5 | General Service Demand | | 661,734 | 668,240 | 1.0% | 668,211 | 1.0% | 668,023 | 1.0% |
| 6 | Florida State University | [2] | 181,746 | 185,364 | 2.0% | 185,364 | | 185,364 | |
| 7 | Florida A & M University | [2] | 60,425 | 57,803 | (4.3%) | 57,803 | | 57,803 | |
| 8 | State Capitol Center | [2] | 93,969 | 94,200 | 0.2% | 94,200 | | 94,200 | |
| 9 | Other Large Demand | | 238,729 | 257,695 | 7.9% | 257,695 | | 257,695 | |
| 10 | Total Large Demand | | 574,869 | 595,061 | 3.5% | 595,034 | 3.5% | 594,863 | 3.5% |
| 11 | Interruptible | | 53,273 | 61,295 | 15.1% | 61,295 | | 61,295 | |
| 12 | Traffic Control | | 938 | 941 | 0.4% | 941 | | 941 | |
| 13 | Curtailable Tallahassee Memorial | | 48,184 | 59,117 | 22.7% | 59,117 | | 59,117 | |
| 14 | **Total Commercial** | | 1,524,808 | 1,571,958 | 3.1% | 1,571,894 | 3.1% | 1,571,479 | 3.1% |
| 15 | Lighting | | 31,314 | 31,013 | (1.0%) | 31,013 | (1.0%) | 31,013 | (1.0%) |
| 16 | **TOTAL ENERGY SALES** | | 2,697,666 | 2,704,192 | 0.2% | 2,701,274 | 0.1% | 2,698,487 | 0.0% |
| 17 | Talquin Transfers (Net Sales) | | 21,646 | 24,397 | 12.7% | 24,397 | 12.7% | 24,397 | 12.7% |
| 18 | **TOTAL ENERGY SALES w/ Talquin** | | 2,719,313 | 2,728,589 | 0.3% | 2,725,671 | 0.2% | 2,722,884 | 0.1% |

[1] Projected 2019 Electric System load forecast sales estimates.
[2] Includes main meter Large Demand only.

TYSP Year 2020
Staff's Data Request # 1
Question No. 11a and 12a

**City of Tallahassee, Florida**
2020 Electric System Load Forecast

**2019 Load Forecast Comparison**

***Fiscal Year 2019***

| Line No. | Variable Description | Explanatory Variables: Actual 2019 | Projected 2019 | % Over (Under) Actual | Aspect of Forecast Impacted |
|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | |
| | Economic Data | | | | |
| 1 | Florida Population | **21,268,583** | **21,252,813** | (0.1%) | FSU Sales |
| 2 | Leon County Population | **293,473** | **293,102** | (0.1%) | Res Cust, Res Use, GSD Cust, GSND Sales, GSD Sales |
| 3 | Leon County Personal Income | **11,319** | **11,248** | (0.6%) | GSND Cust |
| 4 | Leon County Gross Product | **13,152** | **13,173** | 0.2% | LgD Cust, LgD Sales |
| 5 | Real Tallahassee Taxable Sales | **490,957** | **471,275** | (4.0%) | GSND Sales |
| 6 | Real Tallahassee Taxable Sales Per Capita | **1,673** | **1,608** | (3.9%) | Res Use |
| | Electricity Prices | | | | |
| 7 | Real **Residential** Price Electricity (mills/kwh) | **10.67** | **12.03** | 12.7% | |
| 8 | 4-Year Moving Average | **11.16** | **11.32** | 1.4% | Res Use |
| 9 | Real **Commercial** Price of Electricity (mills/kwh) | **7.91** | **9.10** | 15.1% | |
| | Weather Data | | | | |
| 10 | Heating Degree Days | **1,239** | **1,498** | 20.9% | Res Use, GSND Sales, GSD Sales, Losses, LF |
| 11 | Cooling Degree Days | **3,204** | **2,738** | (14.5%) | Res Use, GSND Sales, GSD Sales, LgD Sales Losses, LF |
| 12 | Minimum Temperature Winter Peak Day | **29.0** | **21.7** | (25.1%) | LF/Winter Peak Demand |
| 13 | Maximum Temperature Summer Peak Day | **95.0** | **98.8** | 4.0% | LF/Summer Peak Demand |

TYSP Year 2020
Staff's Data Request # 1
Question No. 11a and 12a

## City of Tallahassee, Florida

2020 Electric System Load Forecast

**2019 Load Forecast Comparison**

**Ex Post Projection vs. Actual Energy Sales (MWh, Unless Otherwise Stated)**

**Fiscal Year 2019**

| Line No. | Customer Class | | Actual (MWh) | Ex Post Projections of Energy Sales [1] | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Excluding DSM | | Including Actual DSM | | Including DSM | |
| | | | | Projected [1] (MWh) | % Over (Under) Actual | Projected [1] (MWh) | % Over (Under) Actual | Projected [1] (MWh) | % Over (Under) Actual |
| | (a) | | (b) | (c) | (d) | (e) | (f) | (g) | (h) |
| | Residential | | | | | | | | |
| 1 | Counts (#) | | 103,673 | 102,696 | (0.9%) | | | | |
| 2 | Average Consumption (kWh) | | 11,011 | 10,985 | (0.2%) | 10,958 | (0.5%) | 10,934 | (0.7%) |
| 3 | Energy Sales | | 1,141,544 | 1,128,135 | (1.2%) | 1,125,280 | (1.4%) | 1,122,909 | (1.6%) |
| 4 | General Service Non-Demand | | 185,810 | 193,415 | 4.1% | 193,406 | 4.1% | 193,351 | 4.1% |
| 5 | General Service Demand | | 661,734 | 680,601 | 2.9% | 680,572 | 2.8% | 680,384 | 2.8% |
| 6 | Florida State University | [2] | 181,746 | 186,659 | 2.7% | 186,651 | | 186,596 | |
| 7 | Florida A & M University | [2] | 60,425 | 58,512 | (3.2%) | 58,509 | | 58,491 | |
| 8 | State Capitol Center | [2] | 93,969 | 94,978 | 1.1% | 94,973 | | 94,945 | |
| 9 | Other Large Demand | | 238,729 | 259,771 | 8.8% | 259,760 | | 259,689 | |
| 10 | Total Large Demand | | 574,869 | 599,920 | 4.4% | 599,893 | 4.4% | 599,722 | 4.3% |
| 11 | Interruptible | | 53,273 | 61,295 | 15.1% | 61,295 | | 61,295 | |
| 10 | Traffic Control | | 938 | 941 | 0.4% | 941 | | 941 | |
| 12 | Curtailable Tallahassee Memorial | | 48,184 | 59,117 | 22.7% | 59,117 | | 59,117 | |
| 13 | **Total Commercial** | | 1,524,808 | 1,595,289 | 4.6% | 1,595,226 | 4.6% | 1,594,810 | 4.6% |
| 14 | Lighting | | 31,314 | 31,013 | (1.0%) | 31,013 | (1.0%) | 31,013 | (1.0%) |
| 15 | **TOTAL ENERGY SALES** | | 2,697,666 | 2,754,436 | 2.1% | 2,751,518 | 2.0% | 2,748,731 | 1.9% |
| 16 | Talquin Transfers | | 21,646 | 24,397 | 12.7% | 24,397 | 12.7% | 24,397 | 12.7% |
| 17 | **TOTAL ENERGY SALES w/ Talquin** | | 2,719,313 | 2,778,834 | 2.2% | 2,775,916 | 2.1% | 2,773,129 | 2.0% |

[1] Projections have been adjusted for actual weather, taxable sales, population, number of meters, other county economic data, and the price of electricity, except for FSU, FAMU and Capitol Center, which have been adjusted for actual weather only.

[2] Includes main meter Large Demand only.

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 11a and 12a |

**City of Tallahassee, Florida**

2020 Electric System Load Forecast

**2019 Load Forecast Comparison**

**Projected vs. Actual Peak Demand**

**Fiscal Year 2019**

| Line No. | Season of Peak | Actual Net Load (MW) | Excluding DSM | | Including Actual DSM | | Including Projected DSM | |
|---|---|---|---|---|---|---|---|---|
| | | | Projected (MW) | % Over (Under) Actual | Projected (MW) | % Over (Under) Actual | Projected (MW) | % Over (Under) Actual |
| | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) |
| 1 | Winter Peak | **508** | **548** | 8.0% | **547** | 7.8% | **546** | 7.6% |
| 2 | Summer Peak | **616** | **605** | (1.7%) | **604** | (1.9%) | **603** | (2.0%) |

TYSP Year 2020
Staff's Data Request # 1
Question No. 11a and 12a

**City of Tallahassee, Florida**
2020 Electric System Load Forecast

**2019 Load Forecast Comparison**
**Ex Post Projection vs. Actual Peak Demand**
**Fiscal Year 2019**

| Line No. | Season of Peak | Actual (MW) | Ex Post Projections of Peak Demand [1] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Excluding DSM | | Including Actual DSM | | Including Projected DSM | |
| | | | Projected (MW) | % Over (Under) Actual | Projected (MW) | % Over (Under) Actual | Projected (MW) | % Over (Under) Actual |
| | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) |
| 1 | Winter Peak | **508** | **519** | 2.3% | **518** | 2.0% | **517** | 1.8% |
| 2 | Summer Peak | **616** | **615** | (0.1%) | **615** | (0.2%) | **614** | (0.3%) |

[1] Projections have been adjusted for actual weather, price of electricity, and projected net energy for load.

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 11a and 12a |

# City of Tallahassee, Florida

2020 Electric System Load Forecast

**2019 Load Forecast Comparison**

**Projected vs. Actual DSM**

**Fiscal Year 2019**

| Line No. | Description | | DSM Energy and Demand Savings Actual 2019 | Projected 2019 | % Over (Under) Actual |
|---|---|---|---|---|---|
| | (a) | | (b) | (c) | (d) |
| 1 | Residential Sales | (MWh) [1] | 2,855 | 5,226 | 83.1% |
| 2 | Commercial Sales | (MWh) [1] | 63 | 479 | 656.3% |
| 3 | Total Sales | (MWh) [1] | 2,918 | 5,705 | 95.5% |
| 4 | Summer Peak Demand | (MW) [2] | 0.83 | 1.67 | 101.6% |
| 5 | Winter Peak Demand | (MW) [2] | 1.14 | 2.31 | 103.0% |

[1] At the customer meter.

[2] At the generator busbar.

TYSP Year 2020
Staff's Data Request # 1
Question No. 11a and 12a

**City of Tallahassee, Florida**
2020 Electric System Load Forecast

**2019 Load Forecast Comparison**
**Projected vs. Adjusted Actual Incremental Additions**
**Fiscal Year 2019**

| Ln. No. | Description | | Incremental Additions 2019 Adj. Actual [1] | Incremental Additions 2019 Projected | % Over (Under) Adj. Actual | Adjusted Actual Total Sales 2018 Actual | 2018 W-Norm Impact | 2018 Weather Norm. | 2019 Actual | 2019 W-Norm Impact | 2019 Weather Norm. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (a) | | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) |
| 1 | Florida State University | (MWh) | **(4,565)** | **0** | (100.0%) | **185,338** | **(1,211)** | **184,127** | **181,746** | **(2,183)** | **179,562** |
| 2 | Florida A&M University | (MWh) | **2,380** | **770** | (67.6%) | **57,723** | **(387)** | **57,336** | **60,425** | **(709)** | **59,716** |
| 3 | State Capitol Center | (MWh) | **(998)** | **0** | (100.0%) | **94,613** | **(424)** | **94,189** | **93,969** | **(778)** | **93,191** |
| 4 | Tallahassee Memorial Hospital | (MWh) | **9,468** | **20,000** | 111.2% | **38,716** | **0** | **38,716** | **48,184** | **0** | **48,184** |
| 5 | Capital Regional Medical Center | (MWh) | - | - | - | - | - | - | - | - | - |

[1] Weather-normalized sales for 2019 - 2018. The result reflects weather-normalized change in sales.

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 20 |

| Year | Number of PEVs | Number of Public PEV Charging Stations[1] | Number of Public "Quick-charge" PEV Charging Stations | Cumulative Impact of PEVs | | |
|---|---|---|---|---|---|---|
| | | | | Summer Demand | Winter Demand | Annual Energy |
| | | | | (MW) | (MW) | (GWh) |
| **2020** | 1,406 | 34 | 2 | NA[2] | | |
| **2021** | 1,420 | 34 | 2 | | | |
| **2022** | 1,435 | 34 | 4 | | | |
| **2023** | 1,449 | 34 | 4 | | | |
| **2024** | 1,463 | 34 | 6 | | | |
| **2025** | 1,478 | 38 | 6 | | | |
| **2026** | 1,493 | 38 | 6 | | | |
| **2027** | 1,508 | 38 | 8 | | | |
| **2028** | 1,524 | 40 | 8 | | | |
| **2029** | 1,600 | 40 | 10 | | | |

**Notes**

[1]Public PEV Charging Station count includes hotels that provide charging for registered guests, automobile dealers that offer charging for specific makes/models and public spaces such as Leon County Library and the Tallahassee International Airport, etc.

[2]Due to the low expected penetration of EVs within the service area, TAL has not performed any formal analysis of the impact of PEVs or PEV charging stations on system load and energy requirements.

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 26 |

| [Demand Response Source or All Demand Response Sources] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Year** | **Beginning Year: Number of Customers** | **Available Capacity (MW)** | | **New Customers Added** | **Added Capacity (MW)** | | **Customers Lost** | **Lost Capacity (MW)** | |
| | | Sum | Win | | Sum | Win | | Sum | Win |
| **2010** | NA. TAL is not a FEECA utility. | | | | | | | | |
| **2011** | | | | | | | | | |
| **2012** | | | | | | | | | |
| **2013** | | | | | | | | | |
| **2014** | | | | | | | | | |
| **2015** | | | | | | | | | |
| **2016** | | | | | | | | | |
| **2017** | | | | | | | | | |
| **2018** | | | | | | | | | |
| **2019** | | | | | | | | | |
| **Notes** | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 27 |

| [Demand Response Source or All Demand Response Sources] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year | Summer | | | | | Winter | | | | |
| | Number of Events | Average Event Size | | Maximum Event Size | | Number of Events | Average Event Size | | Maximum Event Size | |
| | | MW | Number of Customers | MW | Number of Customers | | MW | Number of Customers | MW | Number of Customers |
| 2010 | NA. TAL is not a FEECA utility. | | | | | | | | | |
| 2011 | | | | | | | | | | |
| 2012 | | | | | | | | | | |
| 2013 | | | | | | | | | | |
| 2014 | | | | | | | | | | |
| 2015 | | | | | | | | | | |
| 2016 | | | | | | | | | | |
| 2017 | | | | | | | | | | |
| 2018 | | | | | | | | | | |
| 2019 | | | | | | | | | | |
| Notes | | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 28 |

| [Demand Response Source or All Demand Response Sources] | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year | Average Number of Customers | Summer Peak | | | Winter Peak | | |
| | | Activated During Peak? | Number of Customers Activated | Capacity Activated | Activated During Peak? | Number of Customers Activated | Capacity Activated |
| | | (Y/N) | | (MW) | (Y/N) | | (MW) |
| 2010 | NA. TAL is not a FEECA utility. | | | | | | |
| 2011 | | | | | | | |
| 2012 | | | | | | | |
| 2013 | | | | | | | |
| 2014 | | | | | | | |
| 2015 | | | | | | | |
| 2016 | | | | | | | |
| 2017 | | | | | | | |
| 2018 | | | | | | | |
| 2019 | | | | | | | |
| Notes | | | | | | | |
| (Include Notes Here) | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 29 |

| Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Commercial In-Service | | Gross Capacity (MW) | | Net Capacity (MW) | | Firm Capacity (MW) | | Capacity Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Mo | Yr | Sum | Win | Sum | Win | Sum | Win | (%) |
| Please see "Table 1.1/Schedule 1" in the file entitled "2020 TAL TYSP Tables and Schedules Share File.xls" submitted to FPSC Staff via e-mail on April 1, 2020. | | | | | | | | | | | | | |
| **Notes** | | | | | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | | | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 30

| Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Commercial In-Service | | Gross Capacity (MW) | | Net Capacity (MW) | | Firm Capacity (MW) | | Projected Capacity Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Mo | Yr | Sum | Win | Sum | Win | Sum | Win | (%) |
| Please see "Table 3.3/Schedule8" in the file entitled "2020 TAL TYSP Tables and Schedules Share File.xls" submitted to FPSC Staff via e-mail on April 1, 2020. | | | | | | | | | | | | | |
| **Notes** | | | | | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 31 |

| Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Commercial In-Service | | Gross Capacity (MW) | | Net Capacity (MW) | | Firm Capacity (MW) | | Capacity Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Mo | Yr | Sum | Win | Sum | Win | Sum | Win | (%) |
| TAL | NA | Leon | PV | SUN | 1 | 1993 | 0.27 | 0.27 | 0.23 | 0.23 | 0.00 | 0.00 | 15 |
| **Notes** | | | | | | | | | | | | | |
| Gross capacity is expressed in $MW_{dc}$. Net capacity is expressed in $MW_{ac}$. PV resources assumed to provide energy only, no firm capacity. No new utility-owned renewable resources were added in 2019. | | | | | | | | | | | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 32

| Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Commercial In-Service | | Gross Capacity (MW) | | Net Capacity (MW) | | Firm Capacity (MW) | | Projected Capacity Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Mo | Yr | Sum | Win | Sum | Win | Sum | Win | (%) |
| Unsited | NA | Leon | PV | SUN | 12 | 2020 | 0.12 | 0.12 | 0.10 | 0.10 | 0.00 | 0.00 | 15 |
| **Notes** | | | | | | | | | | | | | |
| Gross capacity is expressed in $MW_{dc}$. Net capacity is expressed in $MW_{ac}$. PV resources assumed to provide energy only, no firm capacity. The planned additions of utility-owned renewable resources are subject to available funding and may or may not be completed within the current planning cycle. | | | | | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 34 |

| Seller Name | Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Gross Capacity (MW) | | Net Capacity (MW) | | Contracted Firm Capacity (MW) | | Contract Term Dates (MM/YY) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Sum | Win | Sum | Win | Sum | Win | Start | End |
| TAL has no existing PPAs from traditional sources. | | | | | | | | | | | | | |
| **Notes** | | | | | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | | | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 35

| Seller Name | Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Gross Capacity (MW) | | Net Capacity (MW) | | Contracted Firm Capacity (MW) | | Contract Term Dates (MM/YY) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Sum | Win | Sum | Win | Sum | Win | Start | End |
| TAL has no planned PPAs from traditional sources. | | | | | | | | | | | | | |
| **Notes** | | | | | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | | | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 36

| Seller Name | Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Gross Capacity (MW) | | Net Capacity (MW) | | Contracted Firm Capacity (MW) | | Contract Term Dates (MM/YY) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Sum | Win | Sum | Win | Sum | Win | Start | End |
| FL Solar 1, LLC | SF1 | 1 | Leon | PV | SUN | 21.2 | 21.2 | 20.0 | 20.0 | 0.0 | 0.0 | 12/17 | 12/37 |
| FL Solar 4, LLC | SF4 | 4 | Leon | PV | SUN | 45.0 | 45.0 | 42.0 | 42.0 | 0.0 | 0.0 | 12/19 | 12/39 |
| **Notes** | | | | | | | | | | | | | |
| Gross and net capacity are expressed in $MW_{ac}$. PV resources assumed to provide energy only, no firm capacity. | | | | | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 37 |

| Seller Name | Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Gross Capacity (MW) | | Net Capacity (MW) | | Contracted Firm Capacity (MW) | | Contract Term Dates (MM/YY) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Sum | Win | Sum | Win | Sum | Win | Start | End |
| TAL has no planned PPAs from renewable sources. | | | | | | | | | | | | | |
| **Notes** | | | | | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 39 |

| Buyer Name | Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Gross Capacity (MW) | | Net Capacity (MW) | | Contracted Firm Capacity (MW) | | Contract Term Dates (MM/YY) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Sum | Win | Sum | Win | Sum | Win | Start | End |
| TAL has no existing PSAs. | | | | | | | | | | | | | |
| **Notes** | | | | | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 40 |

| Buyer Name | Facility Name | Unit No. | County Location | Unit Type | Primary Fuel | Gross Capacity (MW) | | Net Capacity (MW) | | Contracted Firm Capacity (MW) | | Contract Term Dates (MM/YY) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Sum | Win | Sum | Win | Sum | Win | Start | End |
| TAL has no planned PSAs. | | | | | | | | | | | | | |
| **Notes** | | | | | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 42 |

| Renewable Source | Annual Renewable Generation (GWh) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Actual | Projected | | | | | | | | | |
| | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Utility - Firm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Utility - Non-Firm[1] | 7.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Utility - Co-Firing | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Purchase - Firm | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Purchase - Non-Firm | 41.0 | 122.8 | 121.8 | 121.2 | 120.6 | 120.3 | 119.4 | 118.8 | 118.2 | 118.0 | 117.1 |
| Purchase - Co-Firing | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Customer - Owned | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Total | 48.3 | 123.4 | 122.5 | 121.8 | 121.2 | 120.9 | 120.0 | 119.4 | 118.8 | 118.6 | 117.7 |
| Notes | | | | | | | | | | | |
| [1]City-owned solar PV and former Corn Hydro generation. Corn Hydro Plant decommissioned February 2019 and TAL's operating license surrendered in March 2019. | | | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 43 |

| Plant Name | Land Available (Acres) | Potential Installed Net Capacity (MW) | Potential Obstacles to Installation |
|---|---|---|---|
| NA. TAL is a municipal utility. | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 51

| Project Name | Pilot Program (Y/N) | In-Service/ Pilot Start Date (MM/YY) | Max Capacity Output (MW) | Max Energy Stored (MHh) | Conversion Efficiency (%) |
|---|---|---|---|---|---|
| TAL has no existing energy storage. | | | | | |

| Notes |
|---|
| (Include Notes Here) |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 52 |

| Project Name | Pilot Program (Y/N) | In-Service/ Pilot Start Date (MM/YY) | Projected Max Capacity Output (MW) | Projected Max Energy Stored (MHh) | Projected Conversion Efficiency (%) |
|---|---|---|---|---|---|
| TAL has no planned energy storage. | | | | | |

| Notes |
|---|
| (Include Notes Here) |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 57 |

| Year | | As-Available Energy ($/MWh) | On-Peak Average ($/MWh) | Off-Peak Average ($/MWh) |
|---|---|---|---|---|
| Actual | 2010 | NA. TAL is a municipal utility. | | |
| | 2011 | | | |
| | 2012 | | | |
| | 2013 | | | |
| | 2014 | | | |
| | 2015 | | | |
| | 2016 | | | |
| | 2017 | | | |
| | 2018 | | | |
| | 2019 | | | |
| Projected | 2020 | | | |
| | 2021 | | | |
| | 2022 | | | |
| | 2023 | | | |
| | 2024 | | | |
| | 2025 | | | |
| | 2026 | | | |
| | 2027 | | | |
| | 2028 | | | |
| | 2029 | | | |
| Notes | | | | |
| (Include Notes Here) | | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 58

| Generating Unit Name | Summer Capacity (MW) | Certification Dates (if Applicable) | | In-Service Date (MM/YY) |
|---|---|---|---|---|
| | | Need Approved (Commission) | PPSA Certified | |
| **Nuclear Unit Additions** | | | | |
| NA | NA | NA | NA | NA |
| **Combustion Turbine Unit Additions** | | | | |
| NA | NA | NA | NA | NA |
| **Combined Cycle Unit Additions** | | | | |
| NA | NA | NA | NA | NA |
| **Steam Turbine Unit Additions** | | | | |
| NA | NA | NA | NA | NA |
| **Reciprocating Internal Combustion Engine (RICE) Unit Additions** | | | | |
| Hopkins IC 5 | 18 | NA | NA | 04/20 |
| Future IC[1] | 18 | NA | NA | 06/20 |

**Notes**

TAL has committed to a fifth 18.4 MW Rice generating unit to be located at its existing Hopkins Plant site and expected to be in service by April 2020. The unit will be named “Hopkins IC 5”.

For the purposes of TAL’s 2020 TYSP report, TAL has also identified the addition of a Wartsila 18V50SG reciprocating internal combustion engine (RICE) generator (similar to the TAL's existing Hopkins IC 1-4 and planned Hopkins IC 5) to satisfy planning reserve requirements identified in 2028-2029. The timing, site, type and size of this new power supply resource may vary as the nature of the need becomes better defined. Alternatively, this addition could be a generator(s) of a different type/size at an existing or different site or a peak season purchase.

TYSP Year 2020
Staff's Data Request # 1
Question No. 60

| Plant | Unit No. | Unit Type | Fuel Type | Capacity Factor (%) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Actual | Projected | | | | | | | | | |
| | | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 |
| Purdom | 8 | CC | NG/DFO | 66.7 | 64.6 | 74.2 | 72.1 | 72.1 | 69.6 | 72.7 | 72.8 | 74.7 | 69.4 | 73.5 |
| Hopkins | 2 | CC | NG/DFO | 50.0 | 54.3 | 46.2 | 54.1 | 54.1 | 51.5 | 54.3 | 54.4 | 46.5 | 55.6 | 55.0 |
| Hopkins | CT 3 | GT | NG/DFO | 5.4 | 3.1 | 1.6 | 1.0 | 1.5 | 2.2 | 1.3 | 1.4 | 2.1 | 1.9 | 0.8 |
| Hopkins | CT 4 | GT | NG/DFO | 4.6 | 3.0 | 1.7 | 1.2 | 1.6 | 2.4 | 1.4 | 1.0 | 2.2 | 1.3 | 0.5 |
| Hopkins | IC 1 | IC | NG | 21.0 | 20.8 | 23.5 | 12.5 | 13.8 | 23.8 | 14.9 | 14.7 | 26.8 | 16.7 | 11.2 |
| Hopkins | IC 2 | IC | NG | 18.3 | 20.3 | 22.2 | 13.2 | 13.0 | 21.7 | 13.2 | 13.7 | 25.0 | 15.1 | 10.7 |
| Hopkins | IC 3 | IC | NG | 16.6 | 19.8 | 22.2 | 13.0 | 13.3 | 21.7 | 13.2 | 13.5 | 24.5 | 15.1 | 10.5 |
| Hopkins | IC 4 | IC | NG | 13.7 | 19.8 | 23.0 | 12.6 | 12.7 | 21.0 | 13.2 | 13.5 | 24.5 | 15.6 | 11.3 |
| Hopkins | IC 5 | IC | NG | NA | 20.5 | 23.5 | 13.2 | 13.8 | 20.4 | 13.5 | 13.4 | 24.2 | 14.8 | 11.7 |
| Substation 12 | IC 1 | IC | NG | 8.0 | 6.0 | 6.4 | 4.9 | 5.3 | 7.1 | 4.8 | 5.5 | 7.4 | 5.5 | 3.8 |
| Substation 12 | IC 2 | IC | NG | 7.8 | 6.8 | 6.5 | 4.1 | 5.0 | 6.8 | 5.3 | 4.9 | 6.5 | 5.4 | 3.9 |
| Future | IC | IC | NG | NA | NA | NA | NA | NA | NA | NA | NA | NA | 11.5 | 12.6 |
| **Notes** | | | | | | | | | | | | | | |
| (Include Notes Here) | | | | | | | | | | | | | | |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 62 |

| Plant Name | Fuel Type | Summer Capacity (MW) | In-Service Date (MM/YYYY) | Potential Conversion | Potential Issues |
|---|---|---|---|---|---|
| Hopkins 2 | NG | 300 | Jun-08 | 2x1 Combined Cycle | See notes |

**Notes**

Hopkims 2 is an existing 1x1 combined cycle unit that could be converted to a 2x1 unit. Potential issues include balancing the repowered unit's output with load requirements (minimum unit loading would exceed TAL's minimum load requirements), adding a catalyst layer to existing selective catalytic reduction (SCR) system to accommodate the higher $NO_x$ emissions associated with the addition of a second combustion turbine (CT) , and expansion of the Hopkins switchyard to interconnect the second CT.

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 63 |

| Plant Name | Fuel Type | Summer Capacity (MW) | In-Service Date (MM/YYY) | Potential Conversion | Potential Issues |
|---|---|---|---|---|---|
| TAL has no existing steam units that are potential candidates for fuel-switching. | | | | | |

| Notes |
|---|
| (Include Notes Here) |

| | |
|---|---|
| TYSP Year | 2020 |
| Staff's Data Request # | 1 |
| Question No. | 64 |

| Transmission Line | Line Length (Miles) | Nominal Voltage (kV) | Date Need Approved | Date TLSA Certified | In-Service Date |
|---|---|---|---|---|---|
| TAL has no proposed transmission lines for the current planning period that require certification under the Transmission Line Siting Act. | | | | | |

| Notes |
|---|
| (Include Notes Here) |

TYSP Year 2020
Staff's Data Request # 1
Question No. 66 e

| Year | Estimated Cost of Standards of Performance for Greenhouse Gas Emissions Rule for New Sources Impacts (Present-Year $ millions) | | | |
|---|---|---|---|---|
| | Capital Costs | O&M Costs | Fuel Costs | Total Costs |
| 2019 | NA | NA | NA | NA |
| 2020 | NA | NA | NA | NA |
| 2021 | NA | NA | NA | NA |
| 2022 | NA | NA | NA | NA |
| 2023 | NA | NA | NA | NA |
| 2024 | NA | NA | NA | NA |
| 2025 | NA | NA | NA | NA |
| 2026 | NA | NA | NA | NA |
| 2027 | NA | NA | NA | NA |
| 2028 | NA | NA | NA | NA |
| Notes | | | | |
| Not applicable (NA) No existing or planned TAL units subject to the rule. | | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 68

| Unit | Unit Type | Fuel Type | Net Summer Capacity (MW) | Estimated EPA Rule Impacts: Operational Effects | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ELGS | ACE | MATS | CSAPR/ CAIR | CWIS | CCR | |
| | | | | | | | | | Non-Hazardous Waste | Special Waste |
| Hopkins 2A | CC GT | NG | 300 | Note 1 | Note 1 | Note 1 | Note 2 | Note 1 | Note 1 | Note 1 |
| Hopkins HC3 | SC GT | NG | 46 | Note 1 | Note 1 | Note 1 | Note 2 | Note 1 | Note 1 | Note 1 |
| Hopkins HC4 | SC GT | NG | 46 | Note 1 | Note 1 | Note 1 | Note 2 | Note 1 | Note 1 | Note 1 |
| RICE IC-1 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-2 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-3 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-4 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-5 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| Purdom 8 | CC GT | NG | 222 | Note 1 | Note 1 | Note 1 | Note 2 | Note 1 | Note 1 | Note 1 |
| **Notes** | | | | | | | | | | |
| Note 1 - No impact. Unit is not subject to this rule. Note 2 - Florida was exempted from this rule. No impact. Unit is not subject to this rule. | | | | | | | | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 69

| Unit | Unit Type | Fuel Type | Net Summer Capacity (MW) | Estimated EPA Rule Impacts: Cost Effects (CPVRR $ millions) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ELGS | ACE | MATS | CSAPR/ CAIR | CWIS | CCR | |
| | | | | | | | | | Non-Hazardous Waste | Special Waste |
| Hopkins 2A | CC GT | NG | 300 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| Hopkins HC3 | SC GT | NG | 46 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| Hopkins HC4 | SC GT | NG | 46 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-1 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-2 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-3 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-4 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-5 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| Purdom 8 | CC GT | NG | 222 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| **Notes** | | | | | | | | | | |
| Note 1 - No impact. Unit is not subject to this rule. | | | | | | | | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 70

| Unit | Unit Type | Fuel Type | Net Summer Capacity (MW) | Estimated EPA Rule Impacts: Unit Availability (Month/Year - Duration) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ELGS | ACE | MATS | CSAPR/ CAIR | CWIS | CCR | |
| | | | | | | | | | Non-Hazardous Waste | Special Waste |
| Hopkins 2A | CC GT | NG | 300 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| Hopkins HC3 | SC GT | NG | 46 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| Hopkins HC4 | SC GT | NG | 46 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-1 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-2 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-3 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-4 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| RICE IC-5 | RICE | NG | 18 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| Purdom 8 | CC GT | NG | 222 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 | Note 1 |
| **Notes** | | | | | | | | | | |
| Note 1 - No impact. Unit is not subject to this rule. | | | | | | | | | | |

TYSP Year 2020
Staff's Data Request # 1
Question No. 72

| Year | | Uranium | | Coal | | Natural Gas | | Residual Oil | | Distillate Oil | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GWh | $/MMBTU | GWh | $/MMBTU | GWh | $/MMBTU | GWh | $/MMBTU | GWh | $/MMBTU |
| Actual | 2010 | NA | NA | NA | NA | 2,614 | 7.69 | 6 | 9.08 | 3 | 22.15 |
| | 2011 | NA | NA | NA | NA | 2,703 | 6.96 | 2 | 9.08 | 0 | 20.86 |
| | 2012 | NA | NA | NA | NA | 2,509 | 5.54 | NA | NA | 0 | 18.86 |
| | 2013 | NA | NA | NA | NA | 2,662 | 4.51 | NA | NA | 2 | 23.58 |
| | 2014 | NA | NA | NA | NA | 2,788 | 4.82 | NA | NA | 10 | 23.57 |
| | 2015 | NA | NA | NA | NA | 2,704 | 4.44 | NA | NA | 0 | NA |
| | 2016 | NA | NA | NA | NA | 2,562 | 3.92 | NA | NA | 76 | 22.54 |
| | 2017 | NA | NA | NA | NA | 2,635 | 3.79 | NA | NA | 0 | NA |
| | 2018 | NA | NA | NA | NA | 2,808 | 3.79 | NA | NA | 1 | 23.09 |
| | 2019 | NA | NA | NA | NA | 2,900 | 3.53 | NA | NA | 0 | NA |
| Projected | 2020 | NA | NA | NA | NA | 2,889 | 2.86 | NA | NA | 0 | 10.46 |
| | 2021 | NA | NA | NA | NA | 2,866 | 3.17 | NA | NA | 0 | 10.77 |
| | 2022 | NA | NA | NA | NA | 2,946 | 3.22 | NA | NA | 0 | 10.80 |
| | 2023 | NA | NA | NA | NA | 2,952 | 3.27 | NA | NA | 0 | 10.74 |
| | 2024 | NA | NA | NA | NA | 2,921 | 3.31 | NA | NA | 0 | 10.87 |
| | 2025 | NA | NA | NA | NA | 2,969 | 3.34 | NA | NA | 0 | 11.14 |
| | 2026 | NA | NA | NA | NA | 2,977 | 3.40 | NA | NA | 0 | 11.42 |
| | 2027 | NA | NA | NA | NA | 2,907 | 3.45 | NA | NA | 0 | 11.71 |
| | 2028 | NA | NA | NA | NA | 2,984 | 3.50 | NA | NA | 0 | 12.00 |
| | 2029 | NA | NA | NA | NA | 2,998 | 3.54 | NA | NA | 0 | 12.30 |

**Notes**

(Include Notes Here)