KPU
Your Community, Your Utility

General Manager
334 Front Street
Ketchikan, AK. 99901

(907) 228-5603 phone
(907) 225-5075 fax

TRANSMITTAL MEMORANDUM

TO: The Honorable Mayor and City Council

FROM: Karl R. Amylon, General Manager

DATE: June 13, 2019

RE: Electric Division Operations Plan for the Period Ending September 30, 2019

Due to extended drought conditions and the need for additional financial resources to continue running rental generators [see agenda statement 7b(2)], Electric System Engineering Manager Jeremy Bynum has developed the attached operations plan for the period ending September 30, 2019.

The City Council should note that Mr. Bynum and Senior Project Engineer Jennifer Holstrom are working with SLR International Corporation, an environmental and permitting consultant, to modify KPU's Title V permit. If successful, the modified permit will provide KPU with significantly increased diesel generation capacity. My office will keep the City Council advised as these efforts continue.

Electric Division Manager Andy Donato and Mr. Bynum will be attending the City Council meeting of June 20, 2019, in order to address any questions and/or concerns that Councilmembers may have.

Electric Division
1065 Fair Street
Ketchikan, AK 99901

Phone: (907) 225-5505
Fax: (907) 247-0755

Your Community, Your Utility

TRANSMITTAL MEMORANDUM

TO: Karl Amylon, KPU General Manager
Lacey Simpson, Assistant KPU General Manager

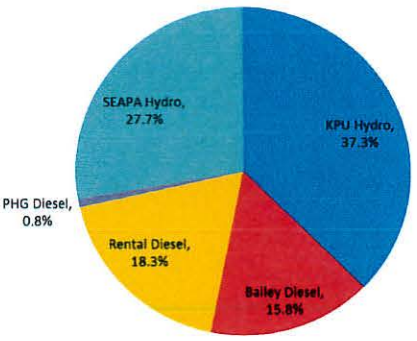
FROM: Jeremy T. Bynum PE, Electric System Engineering Manager

DATE: June 11, 2019

SUBJECT: **KPU Operations Update**

The Electric Division would like to give a brief update on generation and operations due to the extended drought conditions. In May of this year, a special five month operations plan was developed to maximize hydropower, minimize diesel operations, and protect lake levels; the operations plan evolves to adjust for KPU and Southeast Alaska Power Agency (SEAPA) generation availability, weather conditions, Alaska Department of Environmental Conservation (ADEC) permits, and personnel availability. The plan covers May 1, 2019 through September 30, 2019 and was developed using 2018 inflows and load data; the data was modified to account for current weather and planned increases in fish processing loads. The specific duration of the operations plan was developed around ADEC Preapproved Emission Limit (PAEL) permit restrictions for the KPU Rental Generator Program and Title V permit hours at Bailey Power Plant. As time moves forward, the operations plan will be updated to include the fourth quarter (October – December) and any changing conditions.

KPU Electric is utilizing five power sources for the operations plan: KPU hydropower, Bailey Power Plant (diesel), KPU Rental Generator Program (diesel), Point Higgins Generation (diesel), and SEAPA. Each of these sources are forecasted to provide a total of 56,606 Megawatt-hours (MWh) with the limiting factors being available Title V permit hours at Bailey Power Plant, reduced forecasted lake inflows, and low levels at SEAPA lakes and Upper Silvis Lake. Each source has limitations and some levels of contingency included in the plan.



KPU hydropower facilities account for 40,768 MWh or 37.3% of available generation. All of the inflow data has been reduced by 20.9% due to available snow pack, lake levels and forecasted weather. The Silvis Lakes watershed is responsible for supplying the majority of KPU hydropower at the Silvis and Beaver Falls hydropower facilities; reduced reservoir levels impact generating capabilities. During the drought, there are the additional challenges of preserving available drinking water reserves in Ketchikan Lakes and dedicated water for fish hatchery operations in Whitman Lake.

The Bailey Power Plant has 2,342 MWh or 15.8% of available generation and 9,456 MWh of emergency reserves which have restrictions including costly air quality monitoring requirements as identified in the Bailey Title V permit; these emergency reserves are not included in the available generation. KPU is working with ADEC and SLR International Corporation, an environmental and permitting consultant, to modify the current permit requirements; these changes will convert the Bailey permit from hourly based limitations to fuel consumption limits. Overall, if these changes are approved by ADEC, KPU will add additional operating time at the Bailey Power Plant without utilizing emergency reserves and may have up to an additional 15,500 MWh of generating capacity. Permit changes, if approved, may take several months to implement due to the review process.

The KPU Rental Generator Program is planned to provide 10,344 MWh or 18.3% of available generation and planned reserves of 384 MWh. The KPU Rental Generator Program is in response to extended drought conditions and adds a needed 6.4 MW of diesel generating capacity. The rental generators provide additional capacity but at additional cost, increase personnel time, regulatory compliance, and reliability. The rental generators operate PAEL permits.

Point Higgins Generation is a 3.2 MW stationary diesel site consisting of two (2) Caterpillar generating units used for peak loads and emergency power restoration. This site will only contribute 444 MWh or 0.8% of available generation and planned emergency reserves of 346 MWh. This site operates under a separate PAEL permit that will renew with 3,460 MWh early next year.

SEAPA power delivery to the Bailey Switchyard was initially planned to provide 28,458 MWh based on the 2019 SEAPA Operations Plan, however, this MWh value has been reduced to 15,606 MWh or 27.7% of available generation due to reductions in snow pack estimates, inflows, and lake levels. KPU is coordinating with SEAPA to ensure that resources are strategically utilized to maximize availability and capacity.

Currently, total load projection for KPU is 63,507 MWh; this is 7,133 MWh more than planned available generation. The deficit in generation is currently a calculated value based on current data and generation availability. Through planning and coordination, the gap in generation may be bridged in a variety of ways to ensure forecasted loads are met: utilize the emergency reserves at Bailey (9,456 MWh), possible Bailey permit changes (15,500 MWh), additional rental generator reserve hours (1,858 MWh), contingencies established in the KTN hydropower plan (3,200 MWh), improved weather conditions, and or community conservation. Overall, it is too early to consider the use of reserves to meet demand.

Additional impacts of drought conditions and continued diesel operations include increased overtime expenses, deferment of normal hydropower Operations and Maintenance (O&M) due to personnel resourcing and availability, increased unbudgeted O&M cost, increased regulatory compliance, and increased rates due to the diesel surcharge.

The Electric Division will continue evaluating conditions and make adjustments as needed to protect valuable generation resources and personnel. Management plans to provide a diesel operations update at for the City Council in August, or before if conditions change.

Cc: Andy Donato, Electric Division Manager
Mark Adams, Operations Manager