



MMWEC Redeems Auction Rate Securities Early; Project Debt Reduced to \$5.2 Million

The Massachusetts Municipal Wholesale Electric Company (MMWEC) has redeemed all of the remaining auction rate securities (ARS) associated with its ownership interest in the Seabrook Station nuclear power plant.

On February 13, 2019, MMWEC paid off \$1.85 million of the ARS representing all of the variable rate debt associated with its Project No. 6, which represents a 73-megawatt ownership in Seabrook Station, located in Seabrook, New Hampshire. That leaves just \$5.26 million in fixed rate debt remaining, all in Project No. 6. This debt will be paid on July 1, 2019, and this payment will represent MMWEC's final bond payment on all project debt.

In 2018, MMWEC made the final payments to retire the bonds issued for its Project No. 3 and Project No. 5, which represented a portion of its ownership interests in Millstone Unit 3 and Seabrook Station. It also paid a portion of its Project No. 6 debt. In total, MMWEC made a \$3.4 million payment toward its project debt last year.

"This payment helps bring us closer to retiring all of the remaining project debt in a matter of months," said MMWEC Chief Executive Officer Ronald C. DeCurzio. "These assets play an important role in the MMWEC power supply and in project participants' power portfolios."

Seabrook Station and Millstone Unit 3 are expected to

operate long after the bonds are retired later this year. Millstone Unit 3 is licensed to operate until 2045. Seabrook Station's operating license was recently renewed to 2050.

MMWEC has issued more than \$4.7 billion in bonds since 1976 to finance and refinance its 735-megawatt ownership interests in several New England electric generating facilities, including Seabrook Station, Millstone Unit 3, the Stony Brook power plant in Ludlow, MA, and Wyman Unit 4 in Yarmouth, ME. Through its ownership in these plants, MMWEC provides electricity to 28 Massachusetts municipal utilities, six Vermont Utilities and one Rhode Island utility.

Payments for the principal and interest on MMWEC bonds are derived from contracts through which municipal utilities agree to pay a share of MMWEC's unit ownership costs, including the cost of debt service, unit operation and expenses. The utilities are entitled to receive a proportionate share of the unit's output.

"The MMWEC financing program, over the past 40 years, has helped each of its 28 project participants develop their own independent power supply – a hallmark of the public power business model," DeCurzio said. "This milestone will allow these municipal utilities to continue to provide superior service at the lowest cost to their customers, as they have for over 100 years." ∞

Seabrook Operating License Renewed

Seabrook Station's operating license has been renewed by the Nuclear Regulatory Commission (NRC), extending the nuclear plant's license from 2030 to 2050.

NextEra, Seabrook's principal owner and operator, applied for the license extension in 2010. MMWEC owns 11.59% of the 1,244-megawatt plant's output. Twenty-eight Massachusetts MLPs participate in MMWEC's Seabrook project.

The license renewal comes after the NRC approved a license amendment to address the concrete degradation caused by alkali-silica reaction (ASR), a chemical process that results in cracking. The NRC's Advisory Committee on Reactor Safeguards agreed with the NRC's conclusion that while there is some cracking present in some concrete, the plant is fully capable of operating safely through the period of license extension. Seabrook is required to conduct periodic assessments regarding the ASR-affected concrete throughout the remaining length of the operating license of the plant.

Last month, the NRC held an additional public meeting to garner input on the renewal request and license amendment to address the ASR. The NRC later stated that nothing raised at

the public meeting would cause it to revisit the NRC's "no significant hazards" finding or the safety evaluation for the license amendment request.

Following the hearing, the NRC denied an emergency petition filed by the C-10 Research and Education Foundation to immediately suspend the Seabrook license amendment request and license renewal application and reverse the determination finding no significant hazards as part of the license amendment request.

The license extension comes as MMWEC prepares to retire the remaining bonds associated with its ownership in Seabrook Station. Just \$5.26 million in fixed rate debt related to MMWEC's Project No. 6, which represents a 73-megawatt ownership in Seabrook, remains. This debt will be paid off in July. ∞



Seabrook Station

MMWEC Uses Joint Action to Light up Members' Streets

MMMWEC has successfully completed the installation of energy-efficient LED streetlights for 15 of its Members, with the assistance of grant funds from the state Department of Energy Resources. More than 22,000 LED streetlights were installed in the participating communities.

All 15 participating MMWEC Members converted their entire municipal's streetlights to LED fixtures with the help of the grant, which covered 50% of the costs. The new lights require less maintenance, deliver

more lumens per square feet, and use less energy than their old light systems. The LED lights are seven pin controller-capable, which gives them the ability to install a photo control in the future to dim the lights remotely, and have a 21-year life span.

MMWEC first learned of the DOER grant in 2016 and approached Members to determine interest. The MMWEC grant was submitted in August of that year and formally announced in December. Construction and installation began in June of 2017 and ended in December 2018.

Pursuing a joint application under MMWEC allowed MMWEC Members to increase their unit volume and bargaining power

with manufacturers during the bid solicitation process, which began in January of 2017. Over 12 bids were submitted and four manufacturers were selected for the award, which enabled MMWEC Members to receive the specific design and style of light that would match their community needs. Through this joint action effort, MMWEC was able to save its Members \$336,000 as compared to individual bid submissions.

During the installation process, MMWEC Energy Efficiency

Program Manager Brian Sewell realized that in addition to the cost of the light-bulbs, some Members needed to purchase extra equipment to allow for safer, better fixtures including pole arms, wiring, and connecting circuits. Sewell reached out

to the DOER and was able to obtain permission for MMWEC Members to use grant money to fund 50% of the cost of the additional equipment, creating additional savings for MMWEC Members.

"The LED Streetlight program represents MLPs acting in the best interest of the communities they serve," said MMWEC

"Installing new, efficient LED lights has resulted in savings in the form of energy reduction, which is ultimately passed back to the community."

Jason Viadero
MMWEC Generation Engineer

Continued on Page 3

MMWEC, Others Respond to FERC Order in Return on Equity Case

MMMWEC, consumer advocates and other interested parties are pushing back on a new Federal Energy Regulatory Commission (FERC) proposal to determine the return on equity (ROE) collected by New England transmission owners.

The consumer-aligned parties (CAPs) have submitted a brief and a reply brief as part of a paper hearing established by the FERC in the four ongoing complaints regarding the return on equity earned by the transmission owners. The brief is in response to an October 2018 order from FERC that would change the way just and reasonable transmission rates are determined. The new methodology would affect the four pending FERC complaint proceedings in which MMWEC and others argued that the ROE, or the amount transmission owners earn on their investments, should be reduced.

The October FERC order comes after a U.S. Court of Appeals ruling on the first complaint found FERC had not adequately

explained how it determined that the 11.14% earned England was unreasonable. The found had not justified the 10.57% rate it put in its place.



Under the new methodology, the "zone of reasonableness" would be calculated using three different analyses. For many years, FERC used a single calculation derived from what is known as the discounted cash flow (DCF) analysis. The new methodology would use a capital asset pricing model (CAPM) analysis and an expected earnings analysis, in addition to the DCF. If the three-part analysis showed the ROE to be unjust and unreasonable, FERC would add a risk premium analysis to set the new ROE.

The brief filed by MMWEC and others

takes issue with several parts of the FERC's order, including an argument against a presumption that existing ROEs remain just and reasonable unless they exceed the level five-eighths of the way up a composite range. Using the capital-cost-based standard cited in the FERC order, and consistent with an earlier FERC order, the brief contends an existing ROE should be revisited if it exceeds the cost-based just and reasonable level, and not only if it exceeds an even higher level.

In addition, the brief takes issue with the market risk premium used in the CAPM studies, and the use of estimates of expected earnings on book equity to determine a just and reasonable ROE, because such estimates don't measure the return that investors require to invest in market-priced utility equities. The brief also notes that FERC should recognize that the New England transmission owners are

Continued on Page 4

Major Stony Brook Outage Complete

MWEC has successfully completed the major ten-year maintenance outage at its 526-megawatt Stony Brook power plant in Ludlow. The outage began on September 22, 2018, and ended on December 4, 2018.

The peaking units and one intermediate unit single-cycle unit were back in service two weeks after the outage began, as scheduled. The return to service date for the steam turbine and three Heat Recovery Steam Generators (HRSGs) was delayed by 30 days due to necessary repairs to the steam turbine low pressure rotor.



New baffles are brought into the plant by overhead crane, ready for installation in unit 1A.

GE crews inspecting the rotor at a GE facility in New York found two damaged blades. Because of their location, the entire row of blades needed to be replaced.

In addition to the steam turbine generator blade replacement, the unit underwent a complete overhaul. Work included upgrades to the steam turbine generator controls, replacement of the state turbine generator hydrogen control panel, removal and inspection of the diaphragms, inspection and repairs to bearings, stop valves and other components, and alignment checks.

The high pressure de-superheater was inspected, and some piping and internal components were replaced.

Additional work included replacement of the exhaust duct silencers and supports



The steam turbine rotor is removed and moved by overhead crane to a waiting truck for transport to a GE facility in New York.

for unit 1A, replacement of the 1A HRSG circulating pump and strategic inspection and repairs of high energy piping. Transmission line inspections and repairs were completed. Old candy cane-shaped natural gas vents from the intermediate units were replaced with taller, T-shaped vents for better disbursement of natural gas away from the plant. Hydrogen vents were also replaced.

Crews took advantage of the outage to do extensive valve work. Various valves were inspected and repaired where necessary, including the unit 1A and 1C non-return valves. The gas control valve on unit 1B was also rebuilt.

The cooling tower and circulating water piping were drained and inspected. Joint repairs are needed on the circulating water piping. These repairs are planned for spring 2019.

There were no injuries during the outage, which involved all plant personnel and numerous contractors. ∞



Construction is underway on the Berkshire Wind expansion project atop Brodie Mountain in Hancock, Mass. Two, 2.3-megawatt wind turbines are being added to the existing 10-turbine, 15 megawatt project. The project is expected to be completed in early summer 2019. Fifteen MMWEC members participate in the existing project, while ten members are participating in phase two of the project.

MMWEC Uses Joint Action...continued from page 2

Generation Engineer Jason Viadero. "Installing new efficient LED lights has resulted in savings in the form of energy reduction, which is ultimately passed back to the community."

Peabody Municipal Light Plant Manager Chuck Orphanos agreed that customers were the number one consideration when converting to LED lights.

"Peabody Pride is our city's motto and we have a very safe and well 'lighted' community," said Orphanos, who facilitated the replacement of more than 5,000 streetlights. "It was an easy decision to partner with MMWEC and install energy efficient LED technology to save our residents money."

The DOER is expected to complete inspections of the installed lights, the last stage of the program process, by the end of February. ∞



LEDs being installed in Holden

MMWEC Completes Two New Battery Storage Projects

MMMWEC has completed construction on two, five-megawatt-hour battery storage projects at the Ashburnham Municipal Light Plant (AMLPL) and Wakefield Municipal Gas and Light Department (WMGLD). AMLPL and WMGLD were connected to the grid on January 1, 2019 and February 1, 2019 respectively.

The battery systems were made possible through two Advancing Commonwealth Energy Storage (ACES) grants, which covered 25% of the cost of each system. The ACES Program, a partnership between the Massachusetts Clean Energy Center (MassCEC) and the state Department of Energy Resources (DOER), is a competitive grant initiative aimed at piloting innovative, broadly-replicable energy storage projects to advance energy storage technologies in Massachusetts. The remaining 75% of the projects were funded through MMWEC's pooled loan program.

The process began in June of 2017 when MMWEC reached out to its Members to gauge interest in the energy storage grants. The grants were awarded in December of 2017. After finalizing the system design and ordering components, construction began on both battery systems in fall of 2018. The battery systems will help reduce the costs AMLPL and WMGLD pay for transmission and capacity. AMLPL's system will



The container for Ashburnham Municipal Light Plant's energy storage unit is installed on site.

also be used in the shoulder months to help moderate the effects of solar power on its system. MMWEC will facilitate the dispatch of both systems.

Municipal light customers in Ashburnham and Wakefield can expect to see savings after one year of operation. Both systems are warranted for 10 years with an expected lifetime of 15-20 years.

The projects contain lithium-ion batteries, which have become the predominant technology in the energy storage space due to their low cost and high energy density.

AMLPL General Manager Kevin Sullivan said he is pleased with the system's innovative technology.

"The Ashburnham Municipal Light Plant's (AMLPL) battery storage system is a serious advancement in technology," Sullivan said. "Having a three megawatt, battery storage system changes the traditional power supply thought process."

MMWEC Generation Engineer Jason Viadero said MMWEC hopes to complete more battery storage projects.

"We hope to continue to see price of battery technology decline in the coming years, making it more accessible to members even without grant funding," said Viadero.

In the spring, the Templeton Municipal Light and Water Plant (TMLWP) will be the first member of MMWEC to install a standalone battery system without grant funding. The project is 50% funded through TMLWP and 50% funded through MMWEC's pooled loan program. ∞

MMWEC, Others Respond...continued from page 2

below average risk relative to the proxy group companies, as demonstrated in part by their higher credit ratings. It goes on to say that base ROE determinations should be based on the medians, not the midpoints of the distributions under the new approach. It also argues that the three proxy-based methods aren't properly given equal weight.

On the base ROEs presented in the brief, MMWEC and others argue that it should range from 8.33% to 8.91%, with one outlying period in 2014 with a rate of 11.14%. They maintain that the FERC's contemplated ROE of 10.41% for complaint I is out of line with leading financial indicators. ∞



Former Peabody Municipal Light Plant Manager Glenn Trueira recently retired from his post and was honored with a resolution at the January 2019 MMWEC Board of Directors Meeting. Pictured, left to right: PMLP Commissioner Tom Paras, MMWEC President Peter Dion, Trueira, MMWEC Chairman Michael Flynn and PMLP Commissioner Bob Wheatley.



Massachusetts Municipal Wholesale Electric Company

MMWEC

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Joint Action and economies of scale for Massachusetts municipal utilities

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