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Title:	Approval of Deerhaven Unit 2 Dual Fuel Project (B) **This item was presented to the UAB on June 11, 2020.**		
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6/11/2020	1	Utility Advisory Board		

Approval of Deerhaven Unit 2 Dual Fuel Project (B)

****This item was presented to the UAB on June 11, 2020.****

Deerhaven Unit 2 (DH2) is GRU's largest power generator and is fueled primarily by coal, with limited supplemental natural gas firing capacity. Currently, natural gas usage is limited to approximately 30MW of the total 235MW rating of DH2. Based on staff's observations of potential cost savings due to the current and anticipated future cost forecasts for coal and natural gas, GRU management initiated studies to determine the feasibility of adding dual fuel capability to DH2 to permit fueling the unit with up to 100% natural gas. In addition to cost savings, staff has identified significant potential to reduce carbon emissions and other air emissions from converting from coal to natural gas.

It has been determined that this capital project, which is named the DH2 Dual Fuel Project, required feasibility studies in the following areas: technical and operational, financial, and environmental.

The technical and operational feasibility studies indicated conversion of the DH2 facility to fire on natural gas would have no adverse impact on unit longevity, performance or operational flexibility.

The potential of favorable financial results are largely dependent on maintaining the current cost differential between coal and natural gas. As a reference, currently the cost of Coal is approximately 50% more expensive than natural gas, a situation which is not anticipated to reverse in the near term. The reason: GRU no longer has a low-priced transportation contract, which is a significant portion of its all-in coal costs; natural gas supplies are plentiful and the futures pricing is significantly below that of coal.

Environmental studies indicated that emissions of SO2, Mercury, Particulate Matter, CO2, and Nitrogen Oxides would all decrease, and that the project would be permittable by regulatory agencies. It is estimated that the annual decrease in Carbon Dioxide emissions of over 200,000 tons/year would be achieved based on current

operating projections for DH2. This would further progress towards reducing GRU's carbon emissions.

The estimated capital cost of adding dual fuel capability is less than $12.5M. To take maximum advantage of the financial and emission benefits of this project, staff has developed an accelerated implementation plan in which certain hardware will be installed during a short duration outage in early December 2020, with project completion in March 2021. The next available outage slot for a DH2 outage is in October 2022. Due to the manufacturing lead times (approximately 20 weeks) for equipment manufacture and delivery, as well as for detailed design, timely approval to proceed is required.

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Due to lead times, nearly all of the funding must be committed during FY20, though the cash flow indicates expenditures of approximately $2.2 million in FY20 and approximately 10.3 million in FY21. The project reflects an average return on investment (ROI) of 39%, and a net present value of $14.4M based on maintaining the current differential between natural gas and coal pricing. The beneficial financial results support accelerated execution of the project during a DH2 short duration outage window in December 2020.

Staff Recommendation: Authorize the General Manager or his designee to execute agreements as required to complete the project in accordance with GRU procurement policies and procedures, subject to approval by the City Attorney as to form and legality.