

May 20, 2020

INFORMATION ITEM

Energy Service Company Assessment Update - Combined Heat and Power System; University of Montana

THAT

The University of Montana is providing an update to the Board of Regents on the investment grade audit being completed with McKinstry to determine the feasibility of upgrading the existing Heating Plant to a combined heat and power plant.

EXPLANATION

The intent of this audit is to determine the feasibility of replacing one of the existing boilers with a combined heat and power installation that would maintain/improve the steam production and allow the University to generate electrical power for its on-campus users.

The current Heating Plant includes three (3) natural gas boilers that were installed in the 1960's. In the 1990's, a 440 Kilowatt steam turbine was installed to produce electric power for campus use and reduce steam pressure to 30 psi before supplying the campus with steam heating. The boilers and auxiliary systems have been well maintained but portions need to be either replaced or updated to ensure proper reliability can be maintained in the future.

The potential new configuration of the facility would include a natural gas fired turbine coupled with a Heat Recovery Steam Generator (HRSG) and a condensing steam turbine. The gas turbine is the main driver for the combined heat and power plant. The gas turbine rotates a generator that produces electrical power for campus. Hot exhaust from the gas turbine provides heat to the HRSG to produce the steam that is sent to the steam turbine where additional power is generated and then lower pressure steam goes into the campus steam distribution system. Gas turbines in the 2-5 Megawatt were evaluated to determine if they would be a good fit for the application.

Over the past few months, McKinstry has continued their analysis to refine scope, cost, and potential savings. This analysis has provided a preliminary project cost of \$18.5M with an estimated annual \$1.7M in utility savings. McKinstry will continue their analysis and are scheduled to complete the investment grade audit this June. At that point McKinstry will provide UM with a guaranteed maximum project cost and guaranteed savings. If these results fall within UM's parameters, UM plans to return to the Board of Regents in July for construction approval.

The proposed upgraded plant would also be a huge step toward meeting campus' sustainability and climate action goals by reducing the campus' carbon footprint.

ATTACHMENTS

None