

Project Approval  
MU Gas Turbine Building – Chilled Water Plant Addition

The University of Missouri - Columbia requests project approval for the Gas Turbine Building – Chilled Water Plant Addition project. Total project budget of \$21,725,000 is funded by \$5,490,400 from Reserve for Utility Expansion; \$5,484,600 from Utility Maintenance & Repair Reserves; and \$10,750,000 from Campus Reserves.

Planned campus buildings, including the Translational Precision Medicine Complex (TPMC), will add approximately 1,900 tons of new cooling demand by summer 2022. Also, several chillers in the campus cooling system need to be retired due to age, poor reliability, and inefficiency. Retiring these chillers in this same period will reduce system capacity by 2,500 tons, yielding a chiller capacity need of 4,400 tons.

Providing the required capacity with steam turbine driven chillers, by using available summer steam capacity from the power plant in lieu of using electric chillers, will reduce the impact to the campus' limited electric capacity and improve efficiency of the combined heat and power plant. Two of the retiring chillers are located in academic spaces, including Ellis Library and Veterinary Medicine. Relocating capacity from those facilities to a dedicated chiller plant reduces the health and safety exposure risk of refrigerants and chemicals to students, faculty, and staff.

This project will construct a 3,700 square feet building addition to the chiller plant located at the campus power plant to house two steam turbine driven chillers, cooling towers, and associated auxiliaries, to provide 4,400 tons of necessary chiller capacity to the campus district cooling system to serve planned and forecasted cooling demands of new campus buildings and support chiller retirements within the cooling system.

Burns & McDonnell Engineering Company, Inc. Kansas City, Missouri is the recommended engineer for this project. Burns & McDonnell has extensive, proven experience with detailed designs for district (campus) chilled water systems. The design team includes Meneses Engineering, LLC, O'Fallon, Missouri (MBE) for electrical engineering; SK Design Group, Inc., Overland Park, Kansas (MBE) for civil engineering; and Burns & McDonnell will provide architecture, structural, mechanical, plumbing, and fire protection engineering.

The selection committee also interviewed BRiC Partnership, LLC, Kirkwood, Missouri; and Jacobs Engineering Group, Inc., Fort Worth, Texas.

The fee percentage was determined using the University of Missouri's "Architectural and Engineering Basic Services Fee Estimating Guidelines." This project is a Type VI (Engineering Project); the calculated basic services fee is \$1,452,968 based upon 8.36% of the \$17,380,000 construction cost.

The project will begin construction during spring of 2020. Construction completion is scheduled for August 2021.

June 20-21, 2019

No. 6

Recommended Action - Project Approval, MU Gas Turbine Building – Chilled Water Addition

It was recommended by Chancellor Cartwright, endorsed by President Choi, recommended by the Finance Committee, moved by Curator \_\_\_\_\_ and seconded by Curator \_\_\_\_\_, that the following action be approved:

the project approval for the Gas Turbine Building – Chilled Water Addition, MU

Funding of the project budget is from:

|                                       |                     |
|---------------------------------------|---------------------|
| Reserve for Utility Expansion         | \$ 5,490,400        |
| Utility Maintenance & Repair Reserves | \$ 5,484,600        |
| Campus Reserves                       | <u>\$10,750,000</u> |
| Total                                 | \$21,725,000        |

|                                  |     |    |
|----------------------------------|-----|----|
| Roll call vote of the Committee: | YES | NO |
| Curator Brncic                   |     |    |
| Curator Chatman                  |     |    |
| Curator Layman                   |     |    |
| Curator Steelman                 |     |    |

The motion \_\_\_\_\_.

|                  |     |    |
|------------------|-----|----|
| Roll call vote:  | YES | NO |
| Curator Brncic   |     |    |
| Curator Chatman  |     |    |
| Curator Farmer   |     |    |
| Curator Graham   |     |    |
| Curator Layman   |     |    |
| Curator Phillips |     |    |
| Curator Snowden  |     |    |
| Curator Steelman |     |    |
| Curator Sundvold |     |    |

The motion \_\_\_\_\_.

June 20-21, 2019