LAS CRUCES — A growing New Mexico State University campus needs a growing capacity to cool new buildings, and a nearly completed chilled water facility will do just that.

NMSU’s cooling capacity on the Las Cruces campus has grown with the completion of the satellite chilled water facility, formally known as NMSU Chilled Water System Improvements — Satellite Plant Building Package. The facility, located on Stewart Street, just across from the Campus Health Center, houses two large chillers. The 2,500-ton centrifugal duplex chiller is already operational and cools water to 41 degrees Fahrenheit; water is then pumped to buildings across campus for use in the heating, ventilation and air conditioning systems to cool the buildings. The second system is a 1,000-ton glycol chiller, which will contain ethylene glycol in order to chill water to 23 degrees Fahrenheit for ice production. This chiller is expected to be operational shortly.

The ice will be produced at night, during El Paso Electric’s off-peak billing hours, saving NMSU a significant amount of money.

"It’s a substantial savings in terms of energy," said Lucio Garcia, mechanical engineer for NMSU Facilities and Services. "The off-peak cost for energy is about 5 cents versus 25 cents (per kilowatt hour) for peak use."

Once the system is operational, the ice will be stored in 72 large tanks behind the facility, and the ice will be melted during the day as it runs through a heat exchanger. The resulting chilled water will be used to cool buildings on campus.

NMSU has other chillers at the Central Utility/Co-Gen Plant — three 1,500 ton electrical centrifugal chillers, two 1,500 ton absorption chillers and one three million gallon chilled water storage tank — but with the recent addition of the Barnes & Noble at NMSU Bookstore to campus and the forthcoming Center for the Arts Complex, along with potential future growth, additional cooling capacity was needed to effectively cool the campus.

The NMSU Chilled Water System Improvements plan was developed several years ago, as part of the university’s Master Plan. Phase one of the project included digging large trenches to install the piping used to transfer the chilled water from the satellite plant out to the buildings on campus. The chilled water leaves the facility through a 36-inch pipe. That pipe decreases in size as it reaches the various buildings across campus, and is smallest, 12 inches, at Hadley Hall, the Center for the Arts Complex and the Barnes & Noble at NMSU Bookstore. Phase one cost $3.4 million. The pipe installation project started in June 2011 and was finished by December of that year.

Construction on the $12.5 million satellite plant started in August 2011 and is considered phase two of the project. Phase three will include $870,000 in improvements to the existing physical plant systems; this phase is scheduled to be complete in March 2013.

"Commissioning should start in a couple of weeks, which is the process by which we go through to make sure it operates as it was designed," Garcia said.
Though the plant is not yet fully operational, its performance has already impressed Facilities and Services officials.

"This plant has already exceeded our imagination as far as how well it works," said Alton Looney, NMSU Facilities and Services assistant director of project development.

The satellite chilled water facility should be fully operational by October.

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