

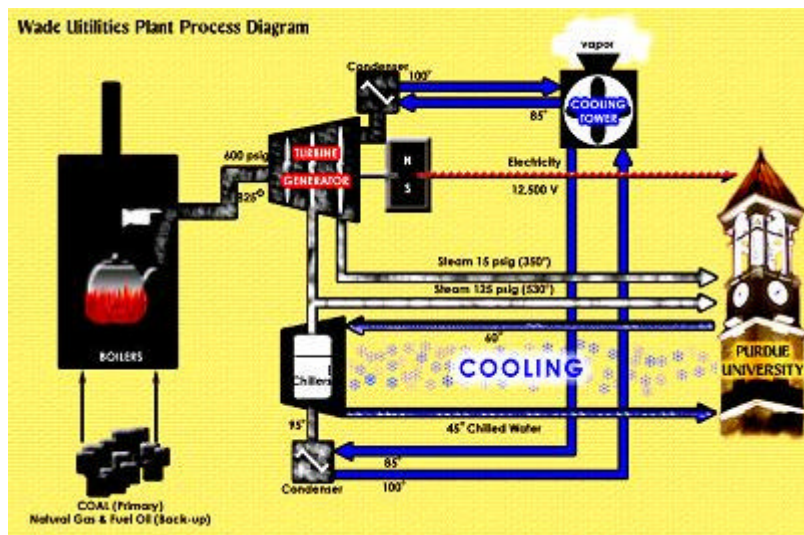
Boilermakers Learn to Keep Cool with Marsh-McBirney Multi-Mags

Purdue University, located in West Lafayette, Indiana, is home to nearly 40,000 students (proudly called *Boilermakers*). One of the university's physical facilities, known as the Wade Utility Plant, provides electricity and chilled water for this city-sized campus. The Wade Utility Plant was completed in 1961 and was named for Walter Wade, a retired vice president of physical facilities. The campus has 148 principal buildings on 2,282 acres. The Wade Utility Plant is one of the largest power plants located on a university campus.



Indiana coal is the prime fuel source for the utility plant. Steam is produced by the combustion of coal, natural gas and fuel oil in the plant boilers. Electricity is in turn produced using two steam turbine generators and one diesel engine generator that operates in parallel with the local electric utility. Chilled water is a year round requirement that is also provided by the plant. The chilled water is vital for environmental control and process cooling.

Accurate flow data is critical at the power plant to ensure that all operations are performing at peak efficiency. Jim Sutton, Plant Engineer, purchased the plant's first Marsh-McBirney (MMI) Multi-Mag flowmeter in 1996 after seeing it at a national trade show. Since the initial purchase, 15 additional meters have been installed to monitor the flow of cooling tower water and chilled water flows.



Prior to accepting the Multi-Mag Magmeter as the plant standard, averaging pitot tubes using differential pressure were utilized. The accuracy of the meters was

described as “horrible”. They were also unable to monitor low flow rates, especially those that occur when plant machinery are first turned on.

The Multi-Mag Insertable Magmeter was designed to accurately measure low flow rates as well as other difficult flow monitoring applications including the following:

- wide flow ranges
- flows containing sand and grit
- vertical pipes
- locations near bends and elbows

The electromagnetic Multi-Mag Magmeter provides multiple measuring points precisely positioned according to pipe size. Unlike meters that provide only a single point measurement, the insertable sensor detects and compensates for shifting profiles. A streamlined sensor shape minimizes flow disturbances, thus providing minimal pressure drop and requiring significantly less energy to operate than most flowmeters, including pitot tubes.

Sutton is extremely pleased with the accuracy of the meters and describes them as trouble-free instruments. Sutton goes on to say that an independent firm recently performed an accuracy comparison test on the Multi-Mag’s that are installed on the cooling tower water lines. The Multi-Mag flow readings were within 1% of the comparison meter reading. He remarked that the test merely re-verified that the meters were continuously providing the exacting accuracy required to efficiently operate the utility plant.

Wade Utility Plant Quick Facts

- Three coal fired and one gas/oil fired boiler
- Plant can supply the entire campus with electricity
- Approx. 150,000 tons of coal are burned each year.

For additional information contact McCrometer, Inc.
Toll Free (800) 220-2279 • (951) 652-6811
FAX (951) 652-3078
www.mccrometer.com