



## Mechanical Engineering Co-op

The Generation Engineering department manages capital improvement projects and provides technical support for the Operation and Maintenance (O&M) of Duke Energy's over 50 generating stations so that Duke Energy can remain a world class leader in the innovative production of energy for the future. By overseeing construction, design, justification and management of Capital and O&M projects, the Generation Engineering department upgrades the generation facilities and equipment to ensure efficient and reliable output from the generating plant. For long-term sustainability of the organization, the Generation Engineering department is also intended to be the feeder pipeline for technical expertise to fill vacancy needs in key positions within the Electric & Gas Operating Department.

Each Mechanical Engineering co-op will be assigned, on a rotational basis, to the following areas:

**Administration & Training** - Your new career as a Duke co-op will begin with an orientation to Duke and the Generation Engineering organization. You will receive the necessary training to help you be successful. In the future, you will also assist in the training of other new co-ops and employees.

**Project Management** - As a team member, you will learn Engineering Practices and Procedures by assisting Mechanical Engineers with the design and construction of capital equipment installations. Efforts will be made to assign tasks with increasing levels of responsibility including: investigating, budgeting, and evaluating a proposed capital project; preparation of all project forms and documentation; design and generation of installation drawings or schematics; material procurement; coordination of equipment isolation; direction of workforce; compliance with codes and standards; adherence to budget; and coordination of functional testing.

**Mechanical Equipment** - As a team member you will take part in testing and plant betterment projects involving pumps, compressors, turbines, HVAC, and similar mechanical equipment.

**Piping** - As a team member, you will be exposed to high energy water and steam piping. You will also work with piping systems involving air, oil, and low pressure water.

**Steam Generation** - Approximately 50% of Duke's annual generation is produced using steam driven generators. You will receive a hands-on introduction to combustion and the steam cycle through boiler and turbine performance testing. As a team member, you will also provide technical support for problems associated with the operation and maintenance of the steam generators and steam turbines.

**Combustion Turbine** - An increasing amount of annual generation is produced by gas fired combustion turbines. As a team member you could be involved in the inspection and overhaul of these sophisticated machines.

**Work Outside of Mechanical Engineering Discipline** - It is important that an engineer be exposed to work outside of their discipline so that they can effectively manage the Mechanical, Electrical, Chemical and Civil/Structural requirements of a project. You will be given the opportunity to assist an engineer outside of your discipline with their

projects.

Actual rotation will depend on the student's number of available work sessions and the department's available projects for completion. This position will be based at one of Duke's Power Generating Stations. Some travel will be necessary and on occasion overnight stays will be required. Occasionally, the student may be asked to work odd hours or overtime as business needs dictate.

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