**Outcome:** Reinforce student P&ID knowledge Manual, Auto, and Cascade Loop Recognition

**Lecture:** Lecture to review: Manual, Automatic and Cascade control loops

**Demo:**

1. Hands on Hot Unit.

**Lab:**

1. Location: HOT Unit (GRHS)
2. Students Will Demonstrate Understanding what a manual control scenario looks like in the field (On Hot Unit) and on the DCS creating the recognition between Field and Remote-Control system.
3. Students Will Demonstrate Understanding what an Automatic control scenario looks like in the field (On Hot Unit) and on the DCS creating the recognition between Field and Remote-Control system.
4. Students Will Demonstrate Understanding what a Cascade control scenario looks like in the field (On Hot Unit) and on the DCS creating the recognition between Field and Remote-Control system.

**Documentation:**

1. Skid (Hot Unit) overall P&ID
2. Reinforce students control knowledge through demonstration of hands on skills during Hot Unit Modules.

**Competency Mastery:**

Students will demonstrate Mastery by Explaining each type of Control Scenario, and showing the instructor which loops are manual, auto, and cascade on the P&ID, on the Skid ( in the Field) and on the DCS (Remote Distributed Control System) and describe how and why they can recognize each type of control system based on their individual attributes. Students will also master Competency through demonstration of hands on skills during Hot Unit Modules.