Team 304: AR Training Application
Automatic Transformer Switch Training & Maintenance

Members: Alexis Cross, Kaitlyn Gurtner, Keven Rodriguez, Christopher Sopeju, Max Urscheler

Sponsor: Florida Power & Light   **Liaisons:** Genese Augustin, Troy Lewis   **Advisor:** Dr. Reginald Perry

Objective & Motivation

Objective
Design an application that will virtually train Florida Power & Light (FPL) employees on maintenance and troubleshooting procedures for the Automatic Transformer Switch (ATS).

Motivation
The COVID-19 pandemic creates a need to provide virtual training to limit potential spread of the disease.

Customer Needs

The customer needs represent goals that are to be met by the final design. The following needs were derived by way of a customer statement followed by Q&A with the customer:

- Train Employees on ATS Maintenance Procedures
- Conduct Training In Virtual Manner
- User Friendly
- Interactive Experience
- Compatible With iPad

ATS Operation Procedures

- Normal In-Service Operation
- Operation During Permanent Fault
- Operation During Temporary Fault
- Non-Reclose Lever Operation
- Manual Open Procedure
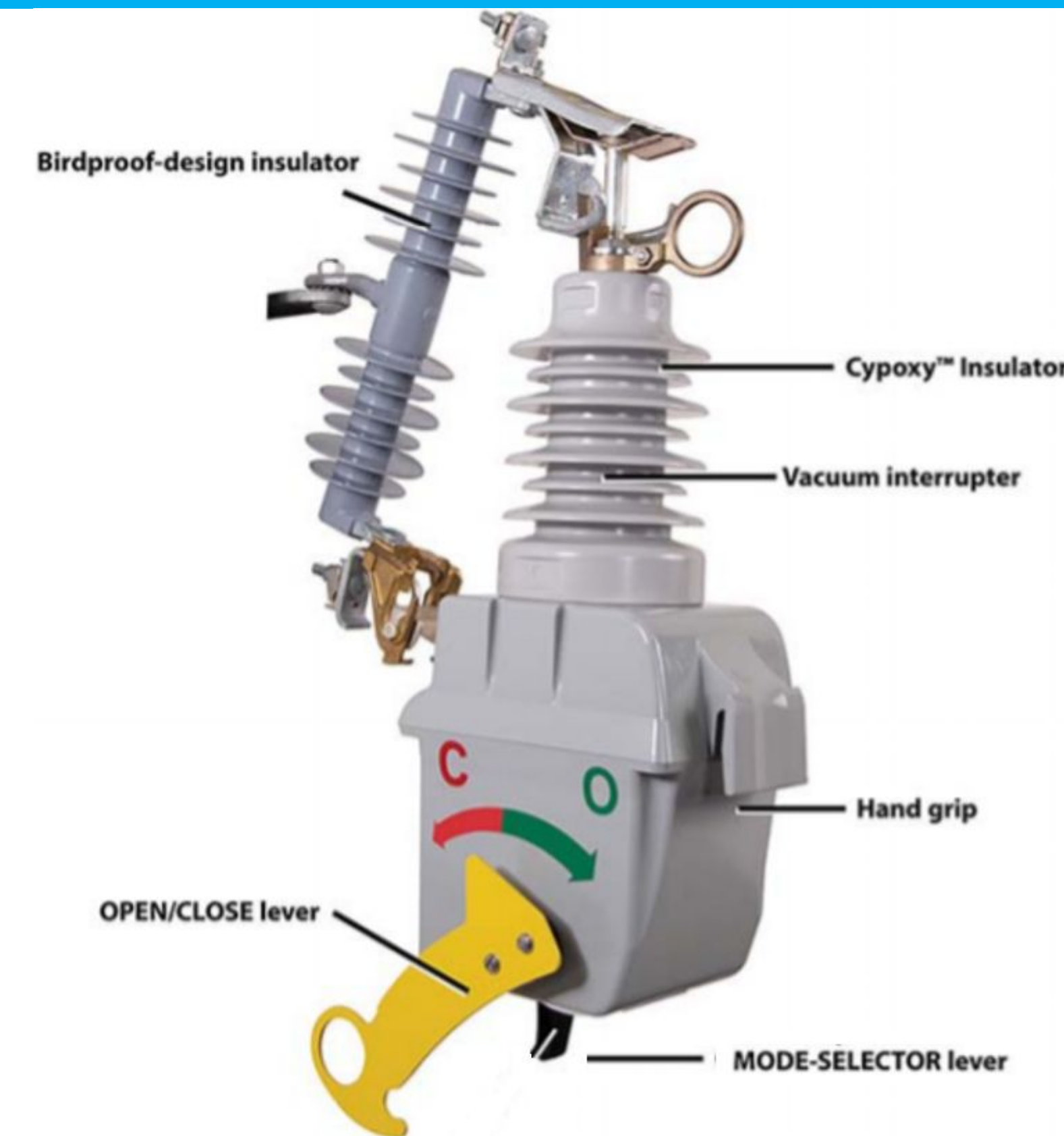- Manual Close Procedure
- Troubleshooting

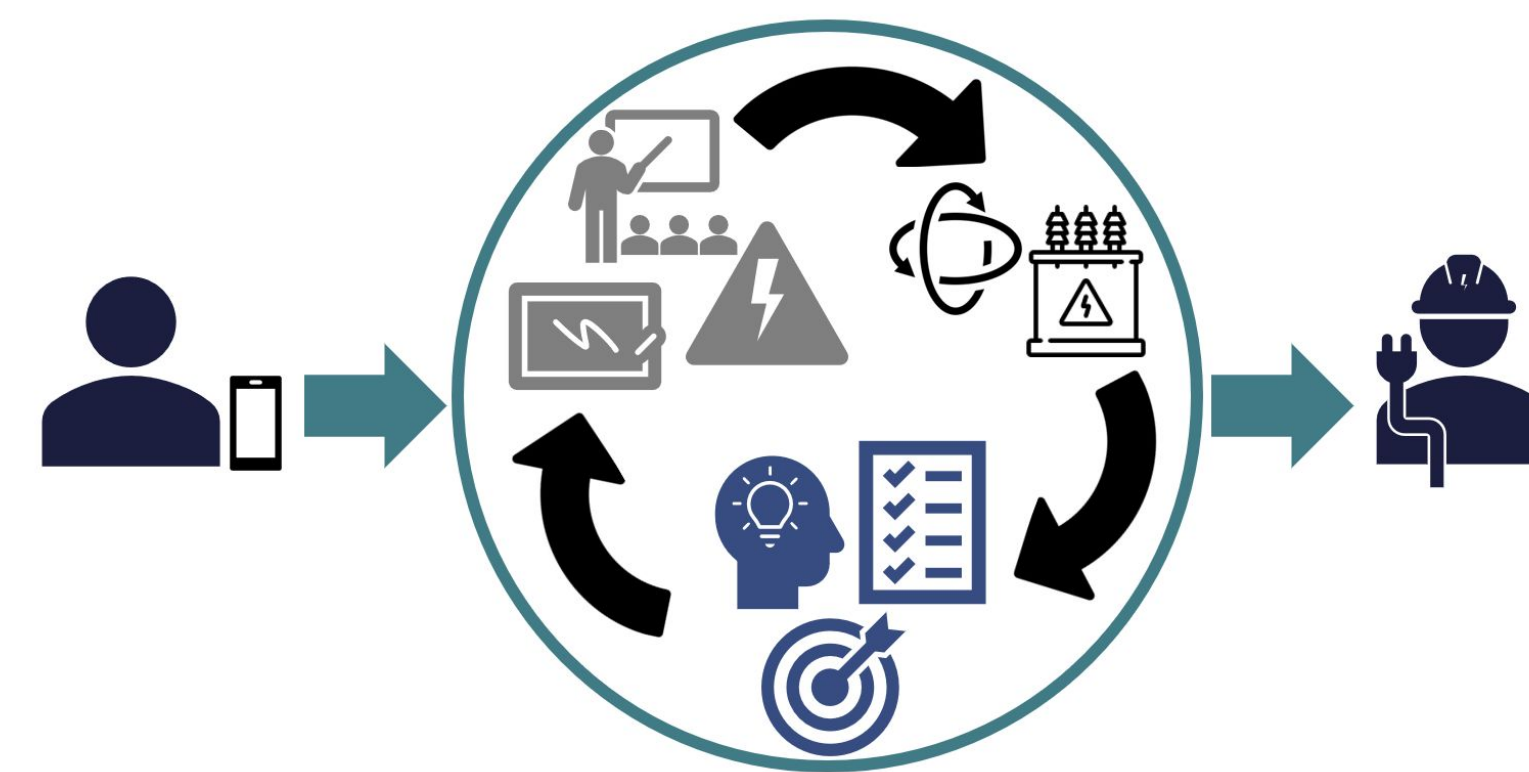## ATS Background Information

Automatic Transformer Switch (ATS)
The ATS is an automated switch equipped with intelligent reclosing abilities thus ensuring minimal power interruptions and continuous power delivery. The model of an ATS can be seen to the right.

Training Application
The application will provide an in-depth look into the switch along with the various mechanisms that must be used during temporary and permanent faults. In addition to training, employees will be assessed on their knowledge of normal ATS operation, and maintenance and troubleshooting procedures. The design will be implemented via 3D modeling software so the employee may interact with the model and do so virtually.

ATS model labels: Birdproof-design insulator, Cypoxy™ Insulator, Vacuum interrupter, Hand grip, OPEN/CLOSE lever, MODE-SELECTOR lever

Design Approach

The application design will model an interactive training session and will consist of the following:

- Informative Videos
- Demonstrations of ATS and Components
- Ability To Interact With And Request Information On ATS
- Assessments Of End User's Knowledge

Key Goals

- Safety
- Education
- Demonstration
- Interactive
- User Assessment

Concept Selection

In order to implement the necessary design requirements, many concepts were generated and considered. After quantitative analysis, the following selections were made:

Production Method: Unity
IDE: JetBrains Rider
3D Modeling Software: Autodesk Maya
Delivery Method: iPad Application
Screen Design: Home/Menu Based
User Assessments: Multiple Choice & Scenario Based

Proposed Design

- ATS Operating Procedures
- Safety Video
- Demonstrations & Practice
- Assess Your Knowledge