

# Control Systems for DC Pulse Generation Building IIB

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**BUILDING STRONG®**

# Cooling System Control

1. **Accomplished by Solid State Control with a PAC (Process Automation Controller) manufactured by OPTO 22.**
2. **There are a total of 16 controllers with associated “racks” that control cooling for the rectifiers and pulsers.**
3. **The “I/O” inputs and outputs include sensors/devices such as temperature sensors for air and water, pressure sensors, flow sensors, conductivity/resistivity sensors, level switches, electric actuated valves, VFD’s, motors, etc.**



# Rectifier Control

- 1. Accomplished by Solid State Control with a PAC (Process Automation Controller) manufactured by OPTO 22 and HMI (Human Machine Interface) computer.**
- 2. Same PAC controllers used for cooling also used for rectifier control.**
- 3. Some alarm conditions monitored included over temperature of SCR, transformer, choke (inductor), diodes, and cabinet also air flow, water flow, water leak, high humidity, main power and control power.**



# Rectifier Control

The Rectifier has the capability of being controlled on/off either locally at the rectifier or remotely with solid state components, HMI.



# Pulser Control

- 1. Accomplished by Solid State Control with a PAC (Process Automation Controller) manufactured by OPTO 22 and HMI (Human Machine Interface) computer.**
- 2. Same PAC controllers used for cooling also used for some aspects of pulser control.**
- 3. Some alarm conditions monitored overcurrent, water flow, water temperature, water conductivity, arc detection in pulser room, communication failure, water leak, etc.**
- 4. In addition, output waveforms and power are monitored.**
- 5. Solid State Control components provide a duration (pulse width) and rate (frequency) to the Pulser to set the output of the pulser.**



# Polarity Switch Control

The position of the Polarity Switch has the capability of being controlled either locally at the switch control panel located in the rectifier rooms or remotely with solid state components.

