DSG-NPS R&D Meeting Minutes

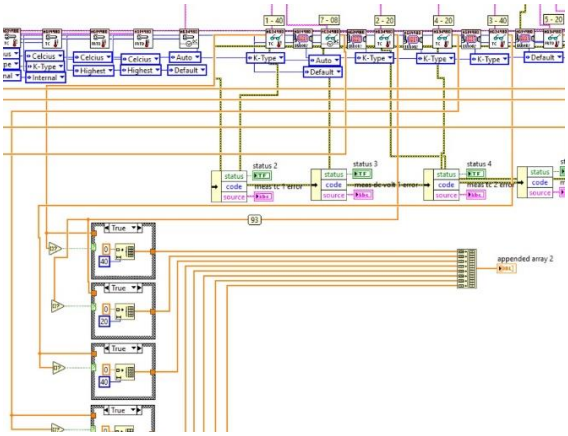
Date: July 18, 2023
Time: 02:00 PM – 02:30 PM

Attendees: Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, and Marc McMullen

1. Debugging thermal readback/chiller controls

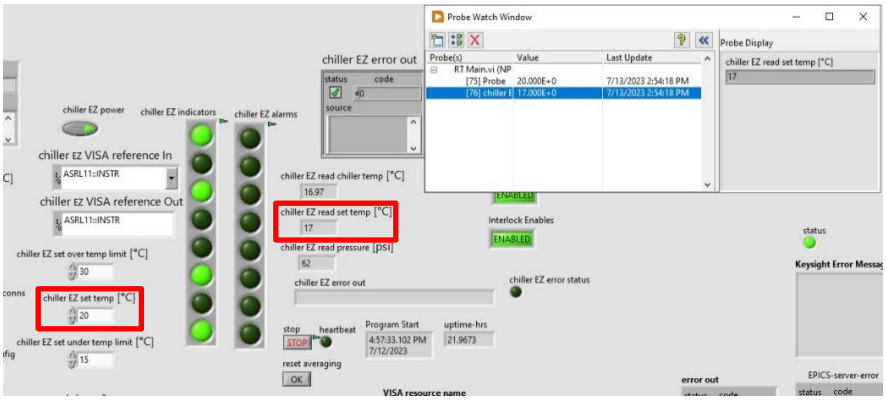
Mary Ann Antonioli, Aaron Brown, and Brian Eng

1. Reviewed change to LabVIEW code to ensure length of Keysight values array does not change if a multiplexer is not present or not properly connected
    - Added a case structure to check if the array produced by a multiplexer scan is empty
    - If the array is empty, it will be replaced with an array of nines of the same length; this way the indexing for the All Keysight Values array does not change



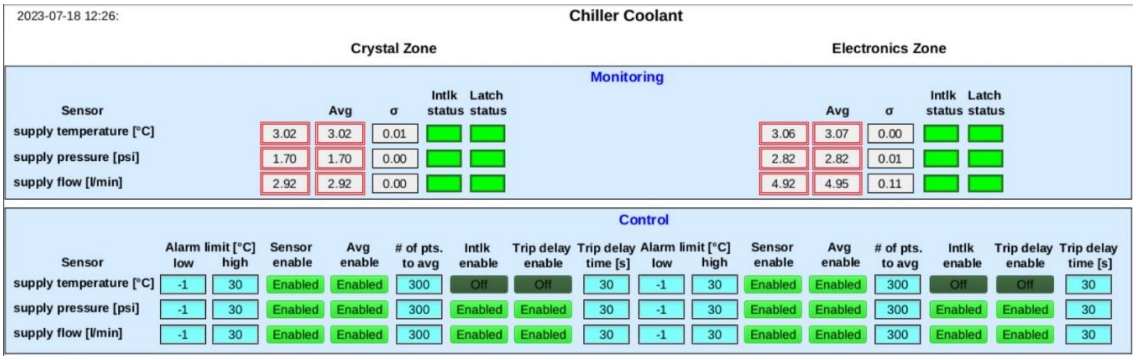
Screenshot of Keysight scanning portion of LabVIEW code

2. Discussion of issue with chiller control
    - The set temperature readback for the electronic zone chiller was different from user supplied set temperature; chiller will only use set temperature readback to set the coolant temperature
    - Code will need to be added to alert the user to the problem; Aaron will find out what users want to do if this problem arises again (shut down chillers or something else)



Screenshot of LabVIEW program showing discrepancy between electronics zone chiller set temperature and readback

3. Discussed additional changes to be made to the LabVIEW code
    - Raw values (voltages) from flow meters are being sent to EPICS instead of the converted values (temperature, pressures, and flow rates)
        - Array elements are being replaced in multiple places in the code; need to change method of replacing converted values in the array
        - Need to add ability to view voltages as well as converted values in next version of thermal readback program



Screenshot of chiller coolant Phoebus screen showing raw values (voltages) instead of converted values

- Code will be changed to alert users to an EPICS communication failure using the error from the cRIO heartbeat shared variable