

HE-LOOP COOLING SYSTEM OPERATING SCENARIO (Rev. 0 / 02.02.2007)**Related Control Drawing : CITY C-ACD-350 / 351 / 352****Operating Scenario for HE-LOOP-1.1/1.2 Exchangers :**

- ❑ In summer operation LOOP-HE-CT Pumps PU-CT-2.6/2.7 shall be working. The valves CV-47, CV-48, CV-49, CV-50 shall be closed; CV-55 and CV-56 shall be opened. (Please refer to main cooling system)
- ❑ In winter operation LOOP-HE-CT Pumps PU-CT-2.6/2.7 shall be working. The valves CV-47, CV-48, CV-63, CV-64 shall be opened; CV-55 and CV-56 shall be closed. (Please refer to main cooling system)
- ❑ The supply water temperature (T9) is kept constant at set point (28.5°C) by positioning the control valve (CV-46) in proportional + integral mode.
- ❑ Inlet/outlet water temperatures of the heat exchangers (HE-LOOP-1.1/1.2) shall be monitored at dispatcher. Supply water temperature (TS) and return water temperature of the zones (TR1, TR2) shall be monitored at dispatcher.
- ❑ At secondary side, when the system pressure is below lower limit, the feed control valve (CV-F1) is opened, when the system pressure is above the limit the feed control valve is closed. Automatic water make-up pump (PU-F11/F12) is started or stopped by presostat individually. (Please refer to Dwg: ACD-236)
- ❑ The primary pumps (PU-LCW-1.1/1.2) are going to be controlled by individual pump control panel which puts the pumps into action and regulates the speed in accordance with cold water demands. This pumps supply primary chilled water to exchangers HE-LOOP-2.1/2.2.
- ❑ The pumps (PU-LCW-4.1/4.2) are going to be controlled by individual pump control panel which puts the pumps into action and regulates the speed in accordance with cold water demands. This pumps supply primary chilled water to tenant exchangers which placed on the floors 58-38th.
- ❑ The pump control panel also supplies input data to the BMS about working status, faults of the pumps.
- ❑ The status and fault of the each pump will be monitored at the dispatcher. When a duty pump fails, the stand-by pump is started automatically and an audio visual alarm is raised. The duty pump is rotated weekly.
- ❑ Valve positions, temperature values, differential pressure values of booster groups will be monitored at the dispatcher.

Operating Scenario for HE-LOOP-2.1/2.2 Exchangers :

- ❑ The supply water temperature (T9-1) is kept constant at set point (30°C) by positioning the control valves (CV-89.1 / CV-89.2) in proportional + integral mode.
- ❑ Inlet/outlet water temperatures of the heat exchangers (HE-LOOP-2.1/2.2) shall be monitored at dispatcher. Supply water temperature (TS) and return water temperature of the zones (TR1, TR2) shall be monitored at dispatcher.

- ❑ At secondary side, when the system pressure is below lower limit, the feed control valve (CV-F5) is opened, when the system pressure is above the limit the feed control valve is closed. Automatic water make-up pump (PU-F9/F10) is started or stopped by presostat individually. (Please refer to Dwg: ACD-261)
- ❑ The primary pumps (PU-LCW-3.1/3.2) are going to be controlled by individual pump control panel which puts the pumps into action and regulates the speed in accordance with cold water demands. This pumps supply primary chilled water to exchangers HE-LOOP-3.1/3.2.
- ❑ The pumps (PU-LCW-4.1/4.2) are going to be controlled by individual pump control panel which puts the pumps into action and regulates the speed in accordance with cold water demands. This pumps supply primary chilled water to tenant exchangers which placed on the floors 37-20th.
- ❑ The pump control panel also supplies input data to the BMS about working status, faults of the pumps.
- ❑ The status and fault of the each pump will be monitored at the dispatcher. When a duty pump fails, the stand-by pump is started automatically and an audio visual alarm is raised. The duty pump is rotated weekly.
- ❑ Valve positions, temperature values, differential pressure values of booster groups will be monitored at the dispatcher.

Operating Scenario for HE-LOOP-3.1/3.2 Exchangers :

- ❑ The supply water temperature (T9-2) is kept constant at set point (31.5°C) by positioning the control valves (CV-96) in proportional + integral mode.
- ❑ Inlet/outlet water temperatures of the heat exchangers (HE-LOOP-3.1/3.2) shall be monitored at dispatcher. Supply water temperature (TS) and return water temperature (TR) shall be monitored at dispatcher.
- ❑ At secondary side, when the system pressure is below lower limit, the feed control valve (CV-F8) is opened, when the system pressure is above the limit the feed control valve is closed. Automatic water make-up pump (PU-F5/F6) is started or stopped by presostat individually. (Please refer to Dwg: ACD-260)
- ❑ The pumps (PU-LCW-5.1/5.2) are going to be controlled by individual pump control panel which puts the pumps into action and regulates the speed in accordance with cold water demands. This pumps supply primary chilled water to tenant exchangers which placed on the floors 19-2nd Basement.
- ❑ The pump control panel also supplies input data to the BMS about working status, faults of the pumps.
- ❑ The status and fault of the each pump will be monitored at the dispatcher. When a duty pump fails, the stand-by pump is started automatically and an audio visual alarm is raised. The duty pump is rotated weekly.
- ❑ Valve positions, temperature values, differential pressure values of booster groups will be monitored at the dispatcher.