

SEQUENCE OF OPERATION:

- CHILLED WATER SYSTEM
- 1) CHILLERS, PUMPS, AND COOLING TOWER ARE CONTROLLED BY DDC SYSTEM.
- 2) WINTER SCHEDULE: THE PRIMARY CHILLED WATER PUMP #2 ASSOCIATED WITH CHILLER #2 WILL START WHEN CHILLER RECEIVES A START SIGNAL. THE START SIGNAL IS BASED ON TIME SCHEDULE, OUTSIDE AIR TEMPERATURE OF 65° F AND MORE, AND 20%. (ADJUSTABLE) OF CHILLED WATER VALVES CALLING FOR COOLING.
- 3) THE SECONDARY CHILLED WATER PUMPS WILL START THROUGH THE TIME SCHEDULE. WHEN THE OUTSIDE TEMPERATURE IS ABOVE 65° F AND 20% (ADJUSTABLE) OF CHILLED WATER VALVES ARE CALLING FOR COOLING.
- 4) CHILLER'S INTERNAL CONTROLS WILL MAINTAIN THE CHILLED WATER TEMPERATURE BASED ON RESET SIGNAL FROM THE DDC SYSTEM. DDC CONTROL SHALL MONITOR CHILLED WATER SUPPLY AND RETURN TEMPERATURES AND STAGE ON THE CHILLERS.
- 5) THE CHILLER #1 SHALL START WHEN THE SUPPLY AND RETURN TEMPERATURE DIFFERENTIAL ($^{\triangle}$ T) EXCEEDS 14 DEGREES F (ADJUSTABLE) FOR MORE THAN 30 MINUTES (ADJUSTABLE) SEQUENCE FOR CH-2.
- 6) THE VDF ON THE SECONDARY PUMPS WILL MODULATE TO MAINTAIN A CONSTANT PRESSURE DIFFERENTIAL ACROSS THE SUPPLY AND RETURN AT BUILDING 16 AHU# TBD.
- 7) SUMMER SCHEDULE: BASE LOAD CH-1 FIRST, THEN OPERATE CH-2 FOR PARTIAL LOAD.

CONDENSER WATER SYSTEM

- 1) THE COOLING TOWER AND THE PUMPS ARE CONTROLLED BY THE DDC SYSTEM.
- 2) CONDENSER PUMPS AND COOLING TOWER FAN SHALL START/STOP BASED ON CHILLER'S DEMAND.
- 3) CONDENSER WATER SUPPLY SETPOINT IS SET AT THE OPERATOR TERMINAL. DDC CONTROL SHALL MONITOR THE CONDENSER SUPPLY AND RETURN TEMPERATURE AND START / STOP THE COOLING TOWER FANS
- 4) RESET THE CONDENSER WATER TEMPERATURE SETPOINT BASED ON OUTSIDE AIR DRY AND WET BULB TEMPERATURE. 5) VDF ON CONDENSER WATER PUMPS SHALL MAINTAIN CONDENSER RETURN TEMPERATURE AT MINIMUM 75°F
- (ADJUSTABLE) DURING WINTER MONTHS TO MEET CHILLER MANUFACTURER'S REQUIREMENTS. 6) INSTALL AUTOMATIC ISOLATION VALVES AT EACH COOLING TOWER CELL'S INLET AND OUTLET CONNECTIONS. TOTAL OF 3 VALVES AT OUTLETS AND 3 VALVES AT INLETS.
- 7) THE OPERATION OF CH-1 SHALL ACTIVATE ONE COOLING TOWER CELL AND THE OPERATION OF CH-2 SHALL ACTIVATE TWO COOLING TOWER CELL CONDENSERS.

REFRIGERANT MONITORING SYSTEM

EMS CONTROLS CONTRACTOR SHALL MAKE PROVISIONS TO MONITOR REFRIGERANT MONITORING SYSTEM FOR ALARM STATUS. EF-1 SHALL OPERATE AT FULL CAPACITY UPON REFRIGERANT DETECTION.

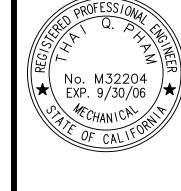
CHILLER CONTROL DIAGRAM

SCALE: NTS



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