



CONTROL DIAGRAM - CONDENSER/CHILLED WATER SYSTEM

NO SCALE

GENERAL:

THE LEAD CHILLER, LEAD CHILLED WATER PUMP AND LEAD CONDENSER WATER PUMP SHALL BE SELECTED AUTOMATICALLY BY THE EXISTING BUILDING AUTOMATION SYSTEM (BAS) AND ALTERNATED ON A WEEKLY BASIS.

THE EXISTING BUILDING AUTOMATION SYSTEM (BAS) SHALL MONITOR THE FOLLOWING POINTS: CHILLER STATUS, PUMP STATUS, CHILLED WATER SUPPLY TEMPERATURE, CHILLED WATER RETURN TEMPERATURE, CONDENSER WATER SUPPLY TEMPERATURE, CONDENSER WATER RETURN TEMPERATURE AND CHILLED WATER SUPPLY SETPOINT AND ALARMS.

SEQUENCE OF OPERATION:

CHILLER AND PUMP OPERATION:

UPON A CALL FOR COOLING LEAD CHILLED WATER PUMP P-1 SHALL BE ENERGIZED AND RUN CONTINUOUSLY, LEAD CHILLER CH-1 SHALL BE ENERGIZED AND OPERATE UNDER ITS INTEGRAL CONTROLS TO MAINTAIN THE CHILLED WATER SUPPLY TEMPERATURE SETPOINT (44°F ADJUSTABLE) AS SENSED BY CHILLED WATER SUPPLY TEMPERATURE SENSOR TS-1.

IF CHILLED WATER SUPPLY TEMPERATURE, AS SENSED BY CHILLED WATER SUPPLY TEMPERATURE SENSOR TS-1 RISES ABOVE SETPOINT (44°F ADJUSTABLE) LAG CHILLER CH-2 SHALL BE ENERGIZED AND OPERATE TO MAINTAIN SETPOINT.

COOLING TOWER OPERATION:

UPON A CALL FOR COOLING LEAD CONDENSER WATER PUMP P-3 SHALL OPERATE CONTINUOUSLY.

VFD-CT-1 SHALL MODULATE COOLING TOWER FAN MOTOR TO MAINTAIN OPEN LOOP CONDENSER WATER SUPPLY TEMPERATURE SETPOINT OF CONDENSER WATER TEMPERATURE SENSOR TS-3 (85°F ADJUSTABLE).

STANDBY OPERATION:

IF THE LEAD OR LAG CHILLED WATER PUMP OR LEAD OR LAG CONDENSER WATER PUMP FAILS TO START WHEN INDEXED OR FAILS DURING OPERATION, THE STANDBY PUMP SHALL START AND AN ALARM SHALL SIGNAL AT THE EXISTING BAS FRONT END. IF COOLING TOWER FAN, LEAD OR LAG CHILLER FAIL TO START WHEN INDEXED OR FAILS DURING OPERATION AN ALARM SHALL SIGNAL AT THE EXISTING BAS FRONT END.

SAFETIES:

IF THE HIGH LIMIT SETTING OF CHILLED WATER LOOP TEMPERATURE SENSOR TS-1 IS EXCEEDED (56°F ADJUSTABLE), A CRITICAL ALARM SHALL SIGNAL AT THE EXISTING BAS FRONT END.

- Chilled
 - Condenser
 - Make up
 Expansion Tank
 Chemical Feed
 - Completed

ENGINEER'S CERTIFICATION STATEMENT
 I certify that these documents were prepared or approved by me, and that I am a duly licensed engineer under the laws of the State of Maryland, license number 04681, expiration date, May 26, 2018.

**NOTRE DAME PREPARATORY SCHOOL -
 CHILLER REPLACEMENT**
 815 HAMPTON LANE
 TOWSON, MD 21286

REVISIONS:		
NO.	DESCRIPTION	DATE

LAST REV.:
 PROJECT NO.: 14091A
 DATE: 3/17/2015
 SCALE: NONE
 TITLE: MECHANICAL CONTROL DIAGRAM

SHEET:
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