CALIFORNIA ENERGY COMMISSION CONDENSER RESET CONTROLS 2022-CEC-NRCA-MCH-17-A

Project Name and Address	Authority Having Jurisdiction
Name: Project Name	Enforcement Agency: Agency
Address: Project Address	Permit Number: Permit Number
City, Zip: City, Zip Code	Permit Application Date: Date

Building: Enter Value	Floor: Enter Value	Room: Ente	er Value	Control/tag: Value
Construction inspection Does not comply	ction and functional testi	ng comply	Date Subn	nitted to AHJ: Date

Intent:	Ensure that the condenser water supply temperature is automatically reset as
	indicated in the control sequence(s). Reference NRCC-MCH-E for nonresidential
	(including nonresidential spaces in high-rise multifamily) building permits or LMCC-
	MCH-E for nonresidential spaces in low-rise multifamily building permits. Submit
	one Certificate of Acceptance for each system that must demonstrate compliance.
	Peferences: \$140.4(k)4. \$160.3(d)1. and NA7.5.16

Table A: Construction Inspection

Prior to functional testing, verify and document all of the following

Step	Entry	Item	Code Reference
1	Pass Fail	Confirm access to required documentation. Designs, plans, schematics, and schedules as approved by the authority having jurisdiction.	N/A
2	☐ Pass ☐ Fail	Required Documentation. Building documents including: manufacturer specifications, calibration certificates, or tear sheets for the installed system as available.	N/A
3	☐ Pass ☐ Fail	Verify and document that the condenser water supply system, control system, and temperature control sequence, including condenser water supply high and low limits, are available and documented in the building documents.	NA7.5.16.1(a)
4	☐ Pass ☐ Fail	Verify and document that the cooling tower fan motors are operational, and cooling tower fan speed controls (e.g. VSDs) are installed, operational, and connected to cooling tower fan motors as specified by Original Equipment Manufacturer (OEM) start-up manuals and sequence of operation.	NA7.5.16.1(b)
5	Pass Fail	Verify and document that the cooling tower fan control sequence, including tower design wet-bulb temperature and approach, is available and documented in the building documents.	NA7.5.16.1(c)

Step	Entry	Item	Code Reference
6	☐ Pass ☐ Fail	Verify and document that the following temperature sensors are installed as specified by the plans: outdoor air dry-bulb, outdoor air wetbulb, entering condenser water, and leaving chilled water. Note any discrepancies.	NA7.5.16.1(d)
7	☐ Pass ☐ Fail	Verify and document that all ambient dry bulb temperature, relative humidity, and pressure sensors used by controller are factory calibrated within 2% of a calibrated reference sensor.	NA7.5.16.1(e)
8	☐ Pass ☐ Fail	Check "Pass" if construction inspection complies with all requirements. Check "Fail" if construction inspection does not comply with all requirements.	N/A

Step	Entry	Item	Code Reference
1	Enter Value	Document the outdoor air dry bulb temperature. (°F)	NA7.5.16.1(f)
2	Enter Value	Document the outdoor air wet bulb temperature. (°F)	NA7.5.16.1(f)
3	Enter Value	Document the entering condenser water temperature. (°F)	NA7.5.16.1(f)
4	Enter Value	Document the leaving chilled water temperature. (°F)	NA7.5.16.1(f)
5	Pass Fail	Check if all temperature recordings from Steps 1 through 4 were documented successfully.	N/A

Table B-2: Functional Testing

Step	Entry	Functional Test	Code Reference
1.0	Pass Fail	If the actual control sequence differs significantly from that implied by the tests and/or has already been tested during the building commissioning process, attach a description of the control sequence, a description of the tests that were done to verify the system operates according to the sequence, the test results, and a plot of associated trend data. Skip to Step 19.	NA7.5.16.2(c)

Step	Entry	Functional Test	Code Reference
2.0	Pass Fail	Pre-Functional Test Requirement. The system cooling load must be sufficiently high to run the test. If necessary, artificially increase the evaporator load to perform the functional tests or wait until a time of stable chiller operation. If necessary, reverse the series of Steps from 6 through 10 and the series of Steps from 11 through 15 in the test based on atmospheric conditions and buildings loads.	NA7.5.16.2(a)
3.0	Pass Fail	Pre-Functional Test Requirement. If testing in cold ambient conditions, ensure that freeze protection controls are installed and functional to prevent equipment damage.	NA7.5.16.2(b)
4.0	WB, L, C, O	Identified the reset control parameter: WB - Outside air wet bulb temperature L - Load signal from chiller C - Condenser water and chilled temperatures O - Other	NA7.5.16.2(d)
5.0	Pass Fail	Adjust the reset control parameter to decrease the condenser water supply temperature toward the lower supply temperature limit. Allow time for the system to stabilize. Maintain this status for Steps 7 through 10.	NA7.5.16.2 Step 1
6.0	Pass Fail	Verify and document that the condenser water supply temperature controls modulate as intended.	NA7.5.16.2 Step 1(a)
7.0	Pass Fail	Verify and document that the actual condenser water supply temperature decreases to meet the new setpoint within plus or minus 2 degrees Fahrenheit.	NA7.5.16.2 Step 1(b)
8.0	☐ Pass ☐ Fail	Verify and document that the cooling tower fan(s) stage properly and/or adjust speed accordingly to meet higher setpoint.	NA7.5.16.2 Step 1(c)
9.0	Pass Fail	Verify and document that the chiller load amperage decreases.	NA7.5.16.2 Step 1(d)
10.0	☐ Pass ☐ Fail	Adjust the reset control parameter to increase the condenser water supply temperature toward the upper supply temperature limit. Maintain this status for Steps 12 through 15.	NA7.5.16.2 Step 2
11.0	Pass Fail	Verify and document that the condenser water supply temperature controls modulate as intended.	NA7.5.16.2 Step 2(e)
12.0	Pass Fail	Verify and document that the actual condenser water supply temperature increases to meet the new setpoint within plus or minus 2 degrees Fahrenheit.	NA7.5.16.2 Step 2(f)

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Step	Entry	Functional Test	Code Reference
13.0	Pass Fail	Verify and document that the cooling tower fan(s) stage properly and/or adjust speed accordingly to meet the lower setpoint.	NA7.5.16.2 Step 2(g)
14.0	Pass Fail	Verify and document that the chiller load amperage increases.	NA7.5.16.2 Step 2(h)
15.0	Pass Fail	Restore reset control parameter to automatic control. Maintain this status for Steps 17 through 19.	NA7.5.16.2 Step 3
16.0	Pass Fail	Verify and document that the condenser water supply temperature controls modulate as intended.	NA7.5.16.2 Step 3(i)
17.0	Pass Fail	Verify and document that the actual condenser water supply temperature changes to meet the new setpoint.	NA7.5.16.2 Step 3(j)
18.0	Pass Fail	Verify and document that the cooling tower fan(s) and chiller(s) stage properly and/or adjust speed accordingly to return to normal operation and meet the setpoint.	NA7.5.16.2 Step 3(k)
19.0	Pass Fail	Verify that the Functional Testing is complete and passes ALL requirements.	N/A

Declaration Statement	Signatory
	Name Company Name
	Author Signature Date Signed
l and contorms to the applicable acceptance requirements and procedures specified in Reterence	Name Company Name ATT No.: ATT Cert. No. Title Phone Signature Date Signed
(responsible acceptance person). The information provided on this Certificate of Acceptance substantiates that the construction or installation identified on this Certificate of Acceptance complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7. I have confirmed that the Certificate(s) of Installation for the construction	Name Company Name Lic. No.: License No. Title Phone Signature Date Signed