Wiskerchen Cheese Inc. SOP	
Title: Thermometer Calibration	# 2.065

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2/27/09	Jesse Norton	John Wiskerchen	2	9/8/2020	Denise Wolf	2/16/18	

Purpose: To ensure Wiskerchen Cheese Inc. is using properly calibrated thermometers for recording key temperature control points.

Responsibility: Quality Assurance Staff

I. Calibration of Lab Thermometer and Process Thermometers to Certified Thermometer Calibrator Instrument (Check Set II)

a) Dial Thermometers to be calibrated weekly:

Cold Thermometer	Hot Thermometer
Lab	Feta Milling COP Tank
Feta Foodservice/Process	Blue Form Washer
Feta Production	Blue Vat (sits on shelf near CIP)
Cream & Whey	Blue COP Tank
Tanker (Intake)	

b) The calibrator instrument has 2 settings: 40 F and 160 F. Turn the temperature switch to the 40 F setting, turn the instrument on, and wait for the "ready" light to turn green.

c) Insert the dial thermometers designated as Cold, one at a time, into the instrument. Wait until the temperature stabilizes.

d) Start a new entry in the Yearly Thermometer Calibration Log, WCI form 7.146. This is found in a black binder in the QA Lab. Record the date and temperatures for each thermometer listed in the log.

e) Allowable temperature range readings are +/- 2 F from the instrument setting.

f) If temperature is out of range: Use Allen wrench (located in QA lab) to adjust thermometer to the set temperature. There is a set screw on the side of each dial for making adjustments. Remove the thermometer from the instrument, wait 3 minutes, then reinsert and read the temperature a second time to make sure adjustment is correct. Record both the out of range and the newly adjusted temperatures into the thermometer log book.

g) After the Cold Thermometers are calibrated, turn the temperature switch on the Calibration Instrument to 160 F. Wait for the "ready" light to turn green. Repeat steps c-f above for calibrating the Hot Thermometers.

h) Initial the Calibration Log book after all thermometers are calibrated and turn in to QA Manager for approval.

II. Calibration of Lab Thermometer and Process Thermometers to Certified Master Thermometer as backup to Calibration Instrument

a) Dial Thermometer to be calibrated weekly using Master Thermometer:

Feta Form Washer

All other thermometers can be calibrated using the Calibration Instrument unless instrument is out for it's yearly certification. The Feta Form Washer thermometer is too

short and cannot be calibrated with the instrument. The Master Thermometer is in the QA lab in the cupboard.

b) Cold Thermometer Calibration: Place ice cubes (from Intake ice cube maker) in plastic beaker from QA lab and fill with water. Allow to equilibrate, approximately 2 minutes. Stir ice water before reading temperature. The Master Thermometer should read 0 C in ice water and the process thermometer should read 32 F.

c) Hot Thermometer Calibration: Run hot tap water from the QA lab sink as hot as it will go and fill plastic beaker.

d) Place Master Thermometer and thermometer being tested into the beaker at the same time. Wait for temperature of both thermometers to stabilize. Record into log book.

e) If the lab or process thermometer temperature is out of the +/- 2 F range from the Master Thermometer, adjust the temperature according to Step I.f. above so that the process thermometer temperature matches the Master Thermometer. Record the out of range and newly adjusted temperatures into the log book.

f) Initial the Calibration Log book after all thermometers are calibrated and turn in to QA Manager for approval.

g) **Conversion Factor:** The Master Thermometer reads in Degrees Celsius, the dial thermometers read in degrees Fahrenheit. Bring to the lab a calculator to convert Celsius to Fahrenheit. This is to be done while both thermometers are in the water bath.

(C x 9/5) + 32 = F

Example: Master Thermometer Reads 55 C

$$\frac{55\ C\ x\ 9}{5} + 32 = 131\ F$$

Approved By: _____ Date: _____