1 Purpose

1.1 To establish a standard procedure for confirming the performance of a water-to-air heat exchange coil to comply with design requirements.

2 Scope

2.1 This procedure applies to the chilled water and hot water coils used in the main airstream of an air moving apparatus

3 Reference

3.1 NEBB Testing Adjusting Balancing Manual for Technicians, First Edition, 1986.

4 Definition

4.1	CFM	Cubic Feet per Minute
4.2	GPM	Gallons Per Minute
4.3	In.W.C.	Inches of Water Column
4.4	MBH	British Thermal Units per Hour x 1000
4.5	TAB	Test, Adjust, and Balance

5 Responsibility

5.1 TAB technicians shall record all test readings on Form FN 8.013.1 (Apparatus Coil Test Report).

5.2 All test reports shall be saved in files, located in the TAB Department of Therma.

5.3 All test equipment utilized shall be in calibration in accordance with NEBB Standards and traceable to the National Institute of Standards and Technology (NIST).

6 Materials Requirement

6.1 None

7 Test Equipment

7.1 Anemometer

7.2 Differential Pressure Meter (Air)

7.3 Differential Pressure Meter (Water)

7.4 Electronic Thermometer (with insertion probes)

7.5 Psychrometer

8 General Procedures

8.1 Place system into the design operating mode. Record all data from the nameplates of the coil unit on the Form FN 8.013.1 (Apparatus Coil Test Report).

8.2 Record all design values of the air and water data on the appropriate locations of the Form FN 8.013.1 (Apparatus Coil Test Report).

8.3 Air Data

8.3.1 Measure the total air volume in CFM using Pitot Tube Traverse as per SOP 8.007 (Operational Procedure for Pitot Tube Traverse) or obtain the total coil airflow data from either Form FN 8.005.1 (Air Outlet Test Report) or Form FN 8.006.1 (VAV Air Outlet Test Report).

8.3.2 Cooling Coils: Measure the entering and leaving air temperature in both dry and wet bulbs with a psychrometer. Heating Coils: Measure entering and leaving air temperature (dry bulb) with a thermometer.

8.3.3 Calculate the air temperature difference (ΔT) from the difference of the leaving and entering dry bulb temperatures.

8.3.4 Measure the air pressure drop across the coil(s) in In.W.C. using a differential pressure meter (air).

8.4 Water Data

8.4.1 Measure the water flow in GPM using a differential pressure meter (water) at the installed flow measuring station.

8.4.2 Measure the coil pressure drop using a differential pressure meter (water) at the installed pressure/temperature ports.

8.4.3 Measure the entering and leaving coil water temperature using the electronic thermometer by inserting probes in the installed pressure/temperature ports.

8.4.4 Calculate the water temperature difference (ΔT) from the difference of the entering and leaving water temperatures.

8.4.5 Calculate the MBH using the following equation:

8.4.6 $MBH = 500 \times GPM \times \Delta T \times 1000$

8.4.7 Record all data on the appropriate locations of the Form FN 8.013.1 (Apparatus Coil Test Report).

8.4.8 Return the system to automatic operating mode.

9 Review and Approval

9.1 Return the Apparatus Coil Test Report Form to the TAB Department for review.

Document Approval

General Foreman — Date: 4-15-97

Service Manager — Date: 4-14-97

Quality Assurance Manager — Date: 4-16-97