Change(s) applied to document, /M.I.G./ 5/7/2015

Once the predetermined humidity level of the air stream has been achieved, the corresponding temperature of the air stream at the predetermined humidity level is defined as the predetermined temperature. In one example, the predetermined humidity level may be established as disclosed in co-pending U.S. Application Serial No. 11/764,249, filed on June 18, 2007 ~~_____, filed on _____, 2007~~, entitled "Fuel Cell Humidity Control System and Method," Attorney's Docket No. 81150538, which is hereby incorporated in its entirety by reference. In another example, the controller 104 may use look up tables (stored in the controller 104) to determine the predetermined humidity level. In another example, the predetermined humidity level may be based on the temperature of the coolant at the inlet 153 of the fuel cell stack 108. The fuel cell stack 108 is configured to present the temperature of the coolant at the inlet 153 to the controller 104. The implementations as set forth for establishing the predetermined humidity level in the air stream also apply to the hydrogen stream.

In general, the predetermined humidity level of the air stream is the amount of water that is in the air stream that is sufficient to ensure proper operation of the membranes in the fuel cells in the fuel cell stack 108. In one example, due to the physical displacement between the system module 102 and the fuel cell stack 108 (or from other conditions that may exist in the system 100 that may reduce/increase the predetermined temperature to a first temperature), the air stream may encounter heat loss or gain which changes the temperature of the air stream from the predetermined temperature to the first temperature.

If the controller 104 determines that the first temperature is less than the predetermined temperature, then the controller 104 controls the valve 166 to allow for an