CLAIMS

1. A method for processing natural gas to produce liquefied natural gas, the method comprising:
cooling the natural gas in one or more heat exchangers using a first refrigerant from a first refrigerant circuit in which the first refrigerant is compressed in a first compressor driven by a first gas turbine having a first inlet air stream, the first inlet air stream having a dry bulb temperature and a wet bulb temperature;
liquefying the natural gas using a second refrigerant, the second refrigerant being compressed in a second compressor driven by a second gas turbine having a second inlet air stream, the second inlet air stream having a dry bulb temperature and a wet bulb temperature;
chilling at least one of the first and second inlet air streams from about the respective dry bulb temperature to a temperature below the respective wet bulb temperature, wherein the chilling of at least one of the first and second inlet air streams uses the first refrigerant from the first refrigerant circuit;
condensing water contained in at least one of the chilled first and second air streams;
separating the water from the at least one of the first and second air streams; and
condensing or sub-cooling at least a portion of the first refrigerant using the separated water.

2. The method of claim 1, wherein condensing or sub-cooling at least a portion of the first refrigerant further comprises:
spraying the water into an air cooler air stream to vaporize the water within the air cooler air stream; and
forcing the combined air cooler air stream and vaporized water over or across a tube bundle through which the at least a portion of the first refrigerant passes.

3. The method of claim 2, wherein forcing the air cooler air stream is accomplished using a fan.

4. The method of claim 3, wherein a flow rate or velocity of the air cooler air stream is adjusted using one or more of a fan speed control and a fan blade pitch control.

5. The method of claim 4, wherein the air cooler air stream flow rate or velocity is adjusted based on at least one of: relative humidity of the air cooler air stream, flow rate of water sprayed into the air cooler air stream, ambient temperature, barometric pressure, psychometric air data, ambient relative humidity, air stream temperature, and temperature of the water sprayed into the air cooler air stream.

6. The method of claim 1, wherein chilling of at least one of the first and second inlet air streams further comprises:
cooling an intermediate heat transfer fluid using the first refrigerant from the first refrigerant circuit; and
chilling at least one of the first and second inlet air streams using the intermediate heat transfer fluid.

7. The method of claim 6, wherein the intermediate heat transfer fluid comprises water or glycol.

8. The method of claim 1, wherein an inlet pressure of the first compressor is selected so that a bubble point temperature of the first refrigerant at the inlet pressure of the first compressor is greater than −5° Celsius and less than 20° Celsius.

9. The method of claim 1, wherein separating the water is accomplished by a separating device selected from an inertial separator, a vane separator, a plenum, and a coalescer.

10. The method of claim 1, further comprising at least partially filtering at least one of the first and second inlet air streams before cooling the at least one of the first and second inlet air streams.

11. A system for processing natural gas to produce liquefied natural gas, the system comprising:
one or more heat exchangers;
a first refrigerant configured to cool the natural gas in the one or more heat exchangers;
a first compressor driven by a first gas turbine, the first compressor configured to compress the first

refrigerant, the first compressor having a first inlet air stream, wherein the first inlet air stream has a dry bulb temperature and a wet bulb temperature associated therewith;
a second refrigerant configured to liquefy the cooled natural gas in a cryogenic heat exchanger;
a second compressor driven by a second gas turbine and configured to compress the second refrigerant, the second compressor having a second inlet air stream, wherein the second inlet air stream has a dry bulb temperature and a wet bulb temperature associated therewith;
a chiller located at an inlet of each of at least one of the first and second gas turbines, the cooler configured to chill, using the first refrigerant, at least one of the first and second inlet air streams from about the respective dry bulb temperature to a temperature below the respective wet bulb temperature;
a separator located downstream of each chiller and configured to separate water in the chilled at least one of the first and second inlet air streams; and
a wet air fin cooler that combines the separated water with an air stream to condense or sub-cool at least a portion of the first refrigerant passing through the wet air fin cooler, wherein the wet air fin cooler comprises
a tube bundle through which the at least a portion of the first refrigerant passes;
a spray header configured to deliver the separated water to the air stream, to thereby vaporize the water within the air stream; and
a fan that forces the air stream and vaporized water over or across the tube bundle through which the at least a portion of the first refrigerant passes.

12. The system of claim 11, further comprising a fan controller that controls at least one of a speed of the fan and a pitch of a blade of the fan.

13. The system of claim 11, further comprising an intermediate heat transfer fluid, wherein the first refrigerant chills the at least one of the first and second inlet air streams through an intermediate heat transfer fluid configured to be cooled by the first refrigerant, and wherein the intermediate heat transfer fluid chills at least one of the first and second inlet air streams.

14. The system of claim 13, wherein the intermediate heat transfer fluid comprises water or glycol.

15. The system of claim 11, further comprising a third compressor that compresses the first refrigerant to an inlet pressure selected so that a bubble point temperature of the first refrigerant at the inlet pressure is greater than −5° Celsius and less than 20° Celsius.

16. The system of claim 11, wherein the separator is one of an inertial separator, a vane separator, a plenum, and a coalescer.

17. The system of claim 11, further comprising a filter arranged to at least partially filter at least one of the first and second inlet air streams before the at least one of the first and second inlet air streams is chilled by the chiller.

18. The system of claim 17, wherein the filter comprises a moisture barrier.

19. The system of claim 11, wherein the first refrigerant is propane.