wherein the prescribed distance is based at least on the available size of the subterranean heat exchange area including a portion of the cool water aquifer that hydrologically communicates the heated water injection well with the cool water production well.

2. The system as recited in claim **1**, wherein cool water produced from the cool water aquifer is used in a cooling heat exchanger to condense a vaporized working fluid exiting a turbine in a geothermal electricity generating system.

3. The system as recited in claim **2**, wherein the geothermal electricity generating system is one of a flash steam power plant and a binary power plant.

4. The system as recited in claim **2**, wherein the geothermal electricity generating system is a solar thermal power plant and the vaporized working fluid entering the turbine is vaporized by the sun.

5. The system as recited in claim **1**, wherein cool water from the cool water aquifer is produced from a plurality of production wells and injected into the cool water aquifer through a plurality of injection wells.

6. The system as recited in claim **2**, wherein the temperature of the cool water from the cool water aquifer is at least 40 degrees Celsius lower than the temperature of the working fluid entering the turbine.

7. The system as recited in claim **2**, wherein the vaporized working fluid of the turbine is steam generated by vaporizing geothermally heated water.

8. The system as recited in claim **2**, wherein the vaporized working fluid of the turbine is a fluid having a vaporization point lower than water and which has been vaporized in a vaporizing heat exchanger with geothermally heated water.

9. The system as recited in claim **1**, wherein the system is an essentially closed fluid flow course having substantially no fluid evaporation losses therefrom.

10. The system as recited in claim **1**, wherein the cool water aquifer is a porous matrix aquifer and the prescribed distance between heated water injection well and the cool water production well is determined at least by the thermal properties of a rock matrix within the cool water aquifer, the initial temperature of cool water in the cool water aquifer and the temperature of heated fluid injected into the cool water aquifer.

11. The system as recited in claim **1**, wherein the cool water aquifer is a naturally fractured aquifer.

12. The system as recited in claim **1**, wherein the cool water aquifer is a fractured aquifer developed through artificially stimulating a low permeability aquitard.

13. A method comprising:

providing at least one cool water production well open to a cool water aquifer and in hydrologic communication with a subterranean heat exchange area that provides requisite cooling capacity to a known heat load; and

providing at least one heated water injection well in hydrologic communication with the subterranean heat exchange area and open to the cool water aquifer at a prescribed distance from the cool water production well,

wherein the prescribed distance is based at least on the available size of the subterranean heat exchange area including a portion of the cool water aquifer that hydrologically communicates the heated water injection well with the cool water production well.

14. The method as recited in claim **13**, wherein cool water produced from the cool water aquifer is used in a cooling heat exchanger to condense a vaporized working fluid exiting a turbine in a geothermal electricity generating system.

15. The method as recited in claim **14**, further comprising sourcing heat used to vaporize the working fluid entering the turbine in the geothermal electricity generating system locally from a separate and warmer aquifer than the cool water aquifer.

16. The method as recited in claim **14**, wherein the geothermal electricity generating system is one of a flash steam power plant, a binary power plant and a solar thermal power plant.

17. The method as recited in claim **13**, wherein the cool water aquifer is a porous matrix aquifer and the prescribed distance between heated water injection well and the cool water production well is determined at least by the thermal properties of a rock matrix within the cool water aquifer, the initial temperature of cool water in the cool water aquifer and the temperature of heated fluid injected into the cool water aquifer.

18. The method as recited in claim **13**, wherein the cool water aquifer is a naturally fractured aquifer.

19. The method as recited in claim **13**, wherein the cool water aquifer is an artificially fractured aquifer in a low permeability aquitard developed by stimulation through injection of water under pressure.

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