Claims:

1. A method for maintaining a subcooled state within a bottom layer of a cryogenic fluid in a storage vessel comprising removing a portion of the cryogenic fluid from near the bottom of the storage vessel, cooling the removed portion of cryogenic fluid in an external heat exchanger and reintroducing the removed portion of cryogenic fluid back into a liquid region of the storage vessel at a position higher than where the cryogenic fluid was removed from the storage vessel wherein the external heat exchanger is at an elevation higher than where the removed portion of cryogenic fluid is reintroduced into the storage vessel and a thermosiphon effect is created to circulate the removed portion of cryogenic fluid from the external heat exchanger to the storage vessel.

2. The method as claimed in claim 1 wherein the removed portion of cryogenic fluid is fed back into the storage vessel at a position higher than where the cryogenic fluid was removed from the storage vessel.

3. The method as claimed in claim 1 wherein a cryogenic fluid is used to cool the removed portion of cryogenic fluid.

4. The method as claimed in claim 3 wherein the cryogenic fluid used to cool is in a heat exchanger.

5. The method as claimed in claim 1 wherein a circulation is established in the removed portion of cryogenic fluid.

6. The method as claimed in claim 4 wherein a thermosiphon effect is created to circulate the removed portion of cryogenic fluid.

7. The method as claimed in claim 3 wherein the cooling is provided by a cryogenic fluid selected from the group consisting of liquefied nitrogen, liquid oxygen, liquid air, argon, and ethylene and mixtures of these fluids

8. The method as claimed in claim 1 wherein said cryogenic fluid in said storage vessel is selected from the group consisting of liquefied natural gas, liquid nitrogen, liquid oxygen, liquid air, liquid argon, and ethylene and mixtures of these fluids.

9. The method as claimed in claim 1 wherein the cooling is based on the temperature of the removed portion of the cryogenic fluid.

10. The method as claimed in claim 9 wherein the amount of cryogenic fluid supplied to the heat exchanger is adjusted to maintain the desired degree of subcooling of the removed portion of the cryogenic fluid.

11. The method as claimed in claim 1 further comprising circulating the removed portion of cryogenic fluid back into the storage vessel with a pump.

12. The method as claimed in claim 1 wherein said cooling is provided by mechanical refrigeration.

13. The method as claimed in claim 9 wherein said cryogenic fluid used to provide cooling is vented from said heat exchanger.

14. A method for maintaining a subcooled condition throughout a cryogenic fluid in a storage vessel comprising removing a portion of the cryogenic fluid from near the bottom of the storage vessel, cooling the removed portion of cryogenic fluid in an external heat exchanger and reintroducing the removed portion of cryogenic fluid back into the storage vessel at a position higher than

where the cryogenic fluid was removed from the storage vessel wherein the external heat exchanger is at an elevation higher than where the removed portion of cryogenic fluid is reintroduced into the storage vessel and a thermosiphon effect is created to circulate the removed portion of cryogenic fluid from the external heat exchanger to the storage vessel.

15. The method as claimed in claim 14 wherein the removed portion of cryogenic fluid is fed back into the storage vessel at a position higher than where the cryogenic fluid was removed from the storage vessel.

16. The method as claimed in claim 14 wherein a cryogenic fluid is used to cool the removed portion of cryogenic fluid.

17. The method as claimed in claim 14 wherein a circulation is established in the cryogenic fluid in the storage vessel.

18. The method as claimed in claim 17 wherein a thermosiphon effect is created in the cryogenic fluid in the storage vessel.

19. The method as claimed in claim 14 wherein the cooling is provided by a cryogenic fluid selected from the group consisting of liquefied nitrogen, liquid oxygen, liquid air, argon, ethylene and mixtures of these fluids

20. The method as claimed in claim 14 wherein said cryogenic fluid in said storage vessel is selected from the group consisting of liquefied natural gas, liquid nitrogen, liquid oxygen, liquid air, liquid argon, and ethylene and mixtures of these fluids.

21. The method as claimed in claim 14 wherein the removal of a portion of the cryogenic fluid is continuous.

22. The method as claimed in claim 16 wherein the cryogenic fluid used to cool the removed portion of cryogenic fluid is in a heat exchanger.

23. The method as claimed in claim 14 wherein the amount of cryogenic fluid supplied to the heat exchanger is adjusted to maintain the desired degree of subcooling of the cryogenic fluid in said storage vessel.

24. The method as claimed in claim 14 further comprising reintroducing the removed portion of cryogenic fluid back into the storage vessel with a pump.

25. The method as claimed in claim 14 wherein said cooling is provided by mechanical refrigeration.

26. The method as claimed in claim 22 wherein said cryogenic fluid used to provide cooling is vented from said heat exchanger.