ULTRA LARGE MARINE FLOATING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of priority of JP application No. JP2013-139540 filed July 3, 2013, the contents of it being hereby incorporated by reference in its entirety for all purposes.

Technical Field

[0001]

The present invention relates to an ultra large marine floating system and, in particular, to a large ship-shaped marine floating system. In more detail, the present invention relates to an ultra large marine floating system mounted with an LNG storage tank, a liquefied natural gas plant, a re-liquefied natural gas plant, an electricity supply plant, and an aluminum virgin ingot production plant, and ~~a~~an aluminum secondary ingot production plant.

Background Art

[0002]

When LNG is burned, the LNG produces a small amount of emission of nitrogen oxide and sulfurous acid gas and hence has been increasingly demanded as clean energy year by year. The LNG is produced by cooling natural gas to approximately – 162 °C to thereby liquefy the natural gas and is carried by the sea to a consumption area by an LNG carrier.

[0003]

Under circumstances where the price of energy is rising worldwide, development projects of a large-scale gas field of seabed far from land are

currently beginning in earnest.

[0004]

In the light of this trend, the following production and transportation system has been focused: that is, a marine floating system having a liquefied natural gas plant and an LNG storage tank arranged thereon is floated on the sea; in the marine floating system, the impurities of the natural gas are removed and the natural gas is liquefied to produce LNG and the LNG is stored in the tank; and when an LNG carrier arrives at the marine floating system, the LNG is offloaded (shipped off) from the LNG storage tank.

As compared with a case where a liquefied natural gas plant is constructed on the land, the transportation system has the following advantages: pipeline facilities from a gas field of seabed and in the sea to the land can be reduced; an environmental load can be reduced because development on the coast is not required; and workers can be comparatively easily secured because an LNG-FPSO is constructed in a country or a region different from those in which a gas field is developed and is towed to the site.

The LNG-FPSO (Floating LNG Production, Storage and Off-Loading system) used for this has the functions of liquefying gas, which is produced from a gas field of seabed, on the ocean to produce LNG, storing the LNG in a tank, and loading it onto an LNG carrier.

An LNG-FSRU (Floating LNG Storage and Re-gasification Unit) has a function of gasifying LNG received from an LNG carrier delivering the LNG gas to the land.

[0005]

The LNG-FPSO include a tank or tanks for storing a large amount of

as the damage of the hull by leakage of the liquid cargo from the loading arm. Therefore, in designing the tank and ship of the LNG-FPSO, it is necessary to take such risks into full consideration.

[0007]

Following three kinds of LNG storage tanks conventionally used in LNG carriers have been adopting, a self-supporting spherical tank (MOSS type tank), a self-supporting prismatic tank (SPB type), and a membrane tank and it is expected that one of these three tank types will be adopted also in the LNG-FPSO.

[0008]

Regarding the self-supporting spherical tank, it is a self-supporting tank made of an aluminum alloy and is supported in a hold of a double hull construction, via a skirt extending from its equatorial portion. A thermal insulation layer is applied on an outer surface of the tank (external thermal insulation). Due to its spherical shape, the self-supporting spherical tank has a disadvantage of low volumetric efficiency because it is not well fitted in the hold. In the tank of this type, owing to its external thermal insulation, the thermal insulation layer does not suffer damage even ~~when the movement of cargo is occurred~~by sloshing during heavy weather.

[0009]

Regarding the self-supporting prismatic tank, a main body is a prismatic tank made of an aluminum alloy and longitudinal strength members reinforcing of the tank are provided on an inner side of the tank, and a thermal insulation layer is provided on an outer surface of the tank. This type requires void space between the prismatic tank and an inner hull of the ship, which accordingly

natural gas plant arranged therein and hence requires that special attention should be paid to safety.

[0013]

As described above, in the LNG-FPSO, the sloshing phenomenon is thought to be likely to occur because it is constantly moored on the ocean where a weather condition is severe and a liquid level in its LNG storage tank changes from time to time according to a production amount of LNG and a loading amount to the LNG carrier, and half load condition daily occurs.

In addition, the workers are forced to continuously work for a long period on a marine floating system while they are affected by the weather, so that it is necessary to improve a working and living environment to the maximum.

[0014]

Hence, a main objective of the present invention is to provide a marine floating system that solves the problems described above and that secures a more improvement in safety and comfort than a conventional LNG-FPSO and to use produced LNG effectively in a plant facility and an electric power supply facility.

[0015]

Other problems will be made clear by the following descriptions.

Solution to Problem

[0016]

The present invention to solve the problems described above is as follows.

[0017]

<Invention as claimed in claim 1>

An invention as claimed in claim 1 is an ultra large marine floating system that has an ultra large marine floating structure with a length of 350 to 550 m, a width of 45 to 80 m, and a depth of 25 to 35 m, this ultra large marine floating system comprising: a tank zone having an LNG storage tank arranged in a hold; and a plant zone including a liquefied natural gas plant, wherein the tank zone and the plant zone are separated from each other in a plane view.

Further, it is preferable that a power facility zone and an accommodation area are separated in the plane view.

[0018]

(Operation effect)

Both of an LNG-FPSO and an LNG carrier need to take more measures against a sloshing phenomenon as compared with a conventional LNG carrier. Further, in the LNG-FPSO are provided not only an LNG storage tank but also plant facilities such as a liquefied natural gas plant, a re-liquefied natural gas plant, an electricity supply plant, an aluminum virgin ingot production plant, an aluminum secondary ingot production plant, and an iron scrap recycling plant, and other production plants, so that it is necessary to pay special attention to the safety of the LNG-FPSO. Furthermore, it is also necessary to improve the working and living environment of workers to the maximum.

In the present invention, the tank zone being the LNG storage tank arranged in the hold and the plant zone including the liquefied natural gas plant are separated from each other in the plane view. The best advantage of this arrangement, as described specifically later, is that this arrangement makes it possible to employ a structure improving safety.

When an ultra large marine floating system with a length of 350 to 550 m, a width of 45 to 80 m, and a depth of 25 to 35 m is constructed according to the present invention, various plants, units, and piping (these are referred to as "various kinds of equipment" in some cases) of the plant facilities can be arranged with spaces between them for safety. Further, when the various kinds of equipment are arranged in a planar arrangement, a resident gas accident caused by a difference in the specific gravity of gas can be minimized. Furthermore, the planar arrangement makes it easy to conduct the maintenance and inspection of the various kinds of equipment.

Although ~~damage~~dangerous risk caused by the sloshing phenomenon is increased along with the marine floating system being made large, it is possible to take measures against the sloshing phenomenon by optimizing combination and arrangement of LNG tanks, by optimizing the arrangement of a ballast tank whose tank volume can be increased along with the marine floating system being made large, or by optimizing an operation of the ballast tank.

When the length and the width of the ultra large marine floating system are less than their lower limits, the system ~~is~~ might be inferior in stability ~~against rolling caused by the sloshing phenomenon~~. Further, the ultra large marine floating system is large enough in the length, the width, and the depth, so that the ultra large marine floating system can easily secure a necessary storage tank space and a necessary plant space. On the other hand, when the ultra large marine floating system is excessively large in the length, the width, and the depth, the ultra large marine floating system creates a useless space and reaches a construction limit in size of a shipyard.

[0019]

<Invention as claimed in claim 2>

An invention as claimed in claim 2 is an ultra large marine floating system as claimed in claim 1, wherein at least over the tank zone, is not arranged a plant facility for liquefying a natural gas other than a piping system for storing and offloading LNG.

[0020]

(Operation effect)

~~For~~In order to exclude a possibility that gas which is lighter than, nearly equal to, or heavier than air in a specific gas gravity will come into the tank zone, at least over the tank zone, is not arranged the plant facility for liquefying the natural gas other than the piping system for storing and offloading LNG. In this way, the tank zone can be enhanced in safety.

[0021]

<Invention as claimed in claim 3>

An invention as claimed in claim 3 is an ultra large marine floating system as claimed in claim 1 or claim 2, wherein at least the tank zone and the plant zone adjacent to the tank zone in a length direction are individually constructed by a system of constructing a plurality of blocks in a unit of length and then the tank zone and the plant zone are connected to each other in the length direction. In this case, it is preferable that the number of tanks in the tank zone is 1 to 5. Further, in the case where the tank zone has a plurality of tanks constructed therein, the plurality of tanks may be of the same type or may be of different types.

[0022]

(Operation effect)

The tank zone and the plant zone adjacent to the tank zone in the length

(Operation effect)

A sea level on the lee side is made stable because the marine floating system is large, so that the loading of the liquefied natural gas in the LNG carrier in the mode of STS (ship to ship), the transfer of the goods, and the transfer of the crews can be conducted more safely.

[0028]

(Operation effect)

A term of "LNG ship" of the present invention is used in a wide meaning including a plant ship utilizing LNG such as an LNG carrier, an FLNG ship, an FSRU ship, and an SRV ship.

[0029]

<Invention as claimed in claim 7>

An invention as claimed in claim 7 is an ultra large marine floating system as claimed in claim 1, wherein the plant zone includes not only the liquefied natural gas plant but also one or two or more additional facilities of a re-gasification facility, an electric power generation facility, an aluminum smelting facility and a scraping recycling facility of aluminum or iron.

Since the ultra large marine floating system can utilize the inexpensive LNG stored in the LNG storage tank, the plant zone includes not only the liquefied natural gas plant but also one or two or more additional facilities of a re-gasification facility, an electric power generation facility, an aluminum smelting facility, and a scrap recycling facility of aluminum ~~and~~or iron. In this way, the ultra large marine floating system has a plant having various kinds of functions.

Advantageous Effects of Invention

[0030]

As described above, according to the present invention, it is possible to provide a marine floating system securing better safety and comfort than a conventional LNG-FPSO.

Brief Description of Drawings

[0031]

~~line~~carrier, a hatchway for loading ore was opened in the upper deck, and a hatch coaming stood to surround the hatchway. During conversion of the ship, a side wall is extended upward so as to be added to this hatch coaming and a ceiling is provided, whereby the head tank 22b is formed.

The head tank 22b formed in this manner communicates with a hole (originally the hatchway) opened in the deck to form one tank together with the main tank 22a.

The main tank 22a is formed by forming a double bottom 34 and a thermal insulation layer 35 on inner sides of the left and right longitudinal bulkheads 33, 33 and by liquid-tightly covering the top by a membrane 36 of invar or the like. The head tank 22b also has on its inner surface a thermal insulation layer 35 and a membrane 36.

[0038]

The self-supporting spherical (MOSS type) tank Z21 is an independent tank, which has a spherical tank fixed to the hull by a cylindrical support structure 37 and, which supports the weight of LNG by the tank itself.

[0039]

Returning to Fig. 1 and Fig. 2, at least over the LNG storage tank zone Z2, is not arranged a plant facility for liquefying natural gas other than a piping system 40 for storing and offloading LNG.

[0040]

Further, a plant zone Z1 including the liquefied natural gas plant 12 has a cooling box 41, a gas boiler 42, a compressor and a turbine 43, and other units 44, 46 provided and arranged at specified positions, for example, in the hold and on the upper deck 32. A reference sign 47 designates an aluminum virgin ingot

CLAIMS:

1. An ultra large marine floating system that has an ultra large marine floating structure with a length of 350 to 550 m, a width of 45 to 80 m, and a depth of 25 to 35 m, the ultra large marine floating system comprising:

a tank zone having an LNG storage tank arranged in a hold; and

a plant zone including a liquefied natural gas plant,

wherein the tank zone and the plant zone are separated from each other in a plane view.

2. The ultra large marine floating system as claimed in claim 1, wherein at least over the tank zone, is not arranged a plant facility for liquefying a natural gas other than a piping system for storing and offloading LNG.

3. The ultra large marine floating system as claimed in claim 1 or claim 2, wherein at least the tank zone and the plant zone adjacent to the tank zone in a length direction are individually constructed by a system of constructing a plurality of blocks in a unit of length and then the tank zone and the plant zone are connected to each other in the length direction.

4. The ultra large marine floating system as claimed in claim 1 or claim 2, wherein in a front part, the plant zone ~~is~~and a power facility zone are arranged and in a rear part, the tank zone and an accommodation area are arranged and the accommodation area is located in a rearmost section in the rear part, and wherein the plant zone has a control room arranged on a deck in a rear portion thereof, the control room being a room in which at least, a crew can visually observe or remotely monitor the plant zone, ~~and~~ the tank zone and the power facility zone.

5. The ultra large marine floating system as claimed in claim 1, wherein

the LNG storage tank is selected from a MOSS type tank, a membrane tank, or a self-supporting prismatic tank.

6. The ultra large marine floating system as claimed in claim 1, wherein a transfer area to the outside is provided on a lee side of the marine floating system.

7. The ultra large marine floating system as claimed in claim 1, wherein the plant zone includes not only the liquefied natural gas plant but also one or two or more additional facilities of a re-gasification facility, an electric power generation facility, an aluminum smelting facility and a scrap recycling facility of aluminum or iron.

ULTRA LARGE MARINE FLOATING SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

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Technical Field

[0001]

The present invention relates to an ultra large marine floating system and, in particular, to a large ship-shaped marine floating system. In more detail, the present invention relates to an ultra large marine floating system mounted with an LNG storage tank, a liquefied natural gas plant, a re-liquefied natural gas plant, an electricity supply plant, and an aluminum virgin ingot production plant, and an aluminum secondary ingot production plant.

Background Art

[0002]

When LNG is burned, the LNG produces a small amount of emission of nitrogen oxide and sulfurous acid gas and hence has been increasingly demanded as clean energy year by year. The LNG is produced by cooling natural gas to approximately – 162 °C to thereby liquefy the natural gas and is carried by the sea to a consumption area by an LNG carrier.

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Under circumstances where the price of energy is rising worldwide, development projects of a large-scale gas field of seabed far from land are

currently beginning in earnest.

[0004]

In the light of this trend, the following production and transportation system has been focused: that is, a marine floating system having a liquefied natural gas plant and an LNG storage tank arranged thereon is floated on the sea; in the marine floating system, the impurities of the natural gas are removed and the natural gas is liquefied to produce LNG and the LNG is stored in the tank; and when an LNG carrier arrives at the marine floating system, the LNG is offloaded (shipped off) from the LNG storage tank.

As compared with a case where a liquefied natural gas plant is constructed on the land, the transportation system has the following advantages: pipeline facilities from a gas field of seabed and in the sea to the land can be reduced; an environmental load can be reduced because development on the coast is not required; and workers can be comparatively easily secured because an LNG-FPSO is constructed in a country or a region different from those in which a gas field is developed and is towed to the site.

The LNG-FPSO (Floating LNG Production, Storage and Off-Loading system) used for this has the functions of liquefying gas, which is produced from a gas field of seabed, on the ocean to produce LNG, storing the LNG in a tank, and loading it onto an LNG carrier.

An LNG-FSRU (Floating LNG Storage and Re-gasification Unit) has a function of gasifying LNG received from an LNG carrier delivering the LNG gas to the land.

[0005]

The LNG-FPSO include a tank or tanks for storing a large amount of

as the damage of the hull by leakage of the liquid cargo from the loading arm. Therefore, in designing the tank and ship of the LNG-FPSO, it is necessary to take such risks into full consideration.

[0007]

Following three kinds of LNG storage tanks conventionally used in LNG carriers have been adopting, a self-supporting spherical tank (MOSS type tank), a self-supporting prismatic tank (SPB type), and a membrane tank and it is expected that one of these three tank types will be adopted also in the LNG-FPSO.

[0008]

Regarding the self-supporting spherical tank, it is a self-supporting tank made of an aluminum alloy and is supported in a hold of a double hull construction, via a skirt extending from its equatorial portion. A thermal insulation layer is applied on an outer surface of the tank (external thermal insulation). Due to its spherical shape, the self-supporting spherical tank has a disadvantage of low volumetric efficiency because it is not well fitted in the hold. In the tank of this type, owing to its external thermal insulation, the thermal insulation layer does not suffer damage even by sloshing during heavy weather.

[0009]

Regarding the self-supporting prismatic tank, a main body is a prismatic tank made of an aluminum alloy and longitudinal strength members reinforcing of the tank are provided on an inner side of the tank, and a thermal insulation layer is provided on an outer surface of the tank. This type requires void space between the prismatic tank and an inner hull of the ship, which accordingly

natural gas plant arranged therein and hence requires that special attention should be paid to safety.

[0013]

As described above, in the LNG-FPSO, the sloshing phenomenon is thought to be likely to occur because it is constantly moored on the ocean where a weather condition is severe and a liquid level in its LNG storage tank changes from time to time according to a production amount of LNG and a loading amount to the LNG carrier, and half load condition daily occurs.

In addition, the workers are forced to continuously work for a long period on a marine floating system while they are affected by the weather, so that it is necessary to improve a working and living environment to the maximum.

[0014]

Hence, a main objective of the present invention is to provide a marine floating system that solves the problems described above and that secures a more improvement in safety and comfort than a conventional LNG-FPSO and to use produced LNG effectively in a plant facility and an electric power supply facility.

[0015]

Other problems will be made clear by the following descriptions.

Solution to Problem

[0016]

The present invention to solve the problems described above is as follows.

[0017]

<Invention as claimed in claim 1>

An invention as claimed in claim 1 is an ultra large marine floating system that has an ultra large marine floating structure with a length of 350 to 550 m, a width of 45 to 80 m, and a depth of 25 to 35 m, this ultra large marine floating system comprising: a tank zone having an LNG storage tank arranged in a hold; and a plant zone including a liquefied natural gas plant, wherein the tank zone and the plant zone are separated from each other in a plane view.

Further, it is preferable that a power facility zone and an accommodation area are separated in the plane view.

[0018]

(Operation effect)

Both of an LNG-FPSO and an LNG carrier need to take more measures against a sloshing phenomenon as compared with a conventional LNG carrier. Further, in the LNG-FPSO are provided not only an LNG storage tank but also plant facilities such as a liquefied natural gas plant, a re-liquefied natural gas plant, an electricity supply plant, an aluminum virgin ingot production plant, an aluminum secondary ingot production plant, and an iron scrap recycling plant, and other production plants, so that it is necessary to pay special attention to the safety of the LNG-FPSO. Furthermore, it is also necessary to improve the working and living environment of workers to the maximum.

In the present invention, the tank zone being the LNG storage tank arranged in the hold and the plant zone including the liquefied natural gas plant are separated from each other in the plane view. The best advantage of this arrangement, as described specifically later, is that this arrangement makes it possible to employ a structure improving safety.

When an ultra large marine floating system with a length of 350 to 550 m, a width of 45 to 80 m, and a depth of 25 to 35 m is constructed according to the present invention, various plants, units, and piping (these are referred to as "various kinds of equipment" in some cases) of the plant facilities can be arranged with spaces between them for safety. Further, when the various kinds of equipment are arranged in a planar arrangement, a resident gas accident caused by a difference in the specific gravity of gas can be minimized. Furthermore, the planar arrangement makes it easy to conduct the maintenance and inspection of the various kinds of equipment.

Although dangerous risk caused by the sloshing phenomenon is increased along with the marine floating system being made large, it is possible to take measures against the sloshing phenomenon by optimizing combination and arrangement of LNG tanks, by optimizing the arrangement of a ballast tank whose tank volume can be increased along with the marine floating system being made large, or by optimizing an operation of the ballast tank.

When the length and the width of the ultra large marine floating system are less than their lower limits, the system might be inferior in stability. Further, the ultra large marine floating system is large enough in the length, the width, and the depth, so that the ultra large marine floating system can easily secure a necessary storage tank space and a necessary plant space. On the other hand, when the ultra large marine floating system is excessively large in the length, the width, and the depth, the ultra large marine floating system creates a useless space and reaches a construction limit in size of a shipyard.

[0019]

<Invention as claimed in claim 2>

An invention as claimed in claim 2 is an ultra large marine floating system as claimed in claim 1, wherein at least over the tank zone, is not arranged a plant facility for liquefying a natural gas other than a piping system for storing and offloading LNG.

[0020]

(Operation effect)

In order to exclude a possibility that gas which is lighter than, nearly equal to, or heavier than air in a specific gas gravity will come into the tank zone, at least over the tank zone, is not arranged the plant facility for liquefying the natural gas other than the piping system for storing and offloading LNG. In this way, the tank zone can be enhanced in safety.

[0021]

<Invention as claimed in claim 3>

An invention as claimed in claim 3 is an ultra large marine floating system as claimed in claim 1 or claim 2, wherein at least the tank zone and the plant zone adjacent to the tank zone in a length direction are individually constructed by a system of constructing a plurality of blocks in a unit of length and then the tank zone and the plant zone are connected to each other in the length direction. In this case, it is preferable that the number of tanks in the tank zone is 1 to 5. Further, in the case where the tank zone has a plurality of tanks constructed therein, the plurality of tanks may be of the same type or may be of different types.

[0022]

(Operation effect)

The tank zone and the plant zone adjacent to the tank zone in the length

(Operation effect)

A sea level on the lee side is made stable because the marine floating system is large, so that the loading of the liquefied natural gas in the LNG carrier in the mode of STS (ship to ship), the transfer of the goods, and the transfer of the crews can be conducted more safely.

[0028]

(Operation effect)

A term of "LNG ship" of the present invention is used in a wide meaning including a plant ship utilizing LNG such as an LNG carrier, an FLNG ship, an FSRU ship, and an SRV ship.

[0029]

<Invention as claimed in claim 7>

An invention as claimed in claim 7 is an ultra large marine floating system as claimed in claim 1, wherein the plant zone includes not only the liquefied natural gas plant but also one or two or more additional facilities of a re-gasification facility, an electric power generation facility, an aluminum smelting facility and a scraping recycling facility of aluminum or iron.

Since the ultra large marine floating system can utilize the inexpensive LNG stored in the LNG storage tank, the plant zone includes not only the liquefied natural gas plant but also one or two or more additional facilities of a re-gasification facility, an electric power generation facility, an aluminum smelting facility, and a scrap recycling facility of aluminum or iron. In this way, the ultra large marine floating system has a plant having various kinds of functions.

Advantageous Effects of Invention

[0030]

As described above, according to the present invention, it is possible to provide a marine floating system securing better safety and comfort than a conventional LNG-FPSO.

Brief Description of Drawings

[0031]

carrier, a hatchway for loading ore was opened in the upper deck, and a hatch coaming stood to surround the hatchway. During conversion of the ship, a side wall is extended upward so as to be added to this hatch coaming and a ceiling is provided, whereby the head tank 22b is formed.

The head tank 22b formed in this manner communicates with a hole (originally the hatchway) opened in the deck to form one tank together with the main tank 22a.

The main tank 22a is formed by forming a double bottom 34 and a thermal insulation layer 35 on inner sides of the left and right longitudinal bulkheads 33, 33 and by liquid-tightly covering the top by a membrane 36 of invar or the like. The head tank 22b also has on its inner surface a thermal insulation layer 35 and a membrane 36.

[0038]

The self-supporting spherical (MOSS type) tank Z21 is an independent tank, which has a spherical tank fixed to the hull by a cylindrical support structure 37 and, which supports the weight of LNG by the tank itself.

[0039]

Returning to Fig. 1 and Fig. 2, at least over the LNG storage tank zone Z2, is not arranged a plant facility for liquefying natural gas other than a piping system 40 for storing and offloading LNG.

[0040]

Further, a plant zone Z1 including the liquefied natural gas plant 12 has a cooling box 41, a gas boiler 42, a compressor and a turbine 43, and other units 44, 46 provided and arranged at specified positions, for example, in the hold and on the upper deck 32. A reference sign 47 designates an aluminum virgin ingot

CLAIMS:

1. An ultra large marine floating system that has an ultra large marine floating structure with a length of 350 to 550 m, a width of 45 to 80 m, and a depth of 25 to 35 m, the ultra large marine floating system comprising:

a tank zone having an LNG storage tank arranged in a hold; and

a plant zone including a liquefied natural gas plant,

wherein the tank zone and the plant zone are separated from each other in a plane view.

2. The ultra large marine floating system as claimed in claim 1, wherein at least over the tank zone, is not arranged a plant facility for liquefying a natural gas other than a piping system for storing and offloading LNG.

3. The ultra large marine floating system as claimed in claim 1 or claim 2, wherein at least the tank zone and the plant zone adjacent to the tank zone in a length direction are individually constructed by a system of constructing a plurality of blocks in a unit of length and then the tank zone and the plant zone are connected to each other in the length direction.

4. The ultra large marine floating system as claimed in claim 1 or claim 2, wherein in a front part, the plant zone and a power facility zone are arranged and in a rear part, the tank zone and an accommodation area are arranged and the accommodation area is located in a rearmost section in the rear part, and wherein the plant zone has a control room arranged on a deck in a rear portion thereof, the control room being a room in which at least, a crew can visually observe or remotely monitor the plant zone, the tank zone and the power facility zone.

5. The ultra large marine floating system as claimed in claim 1, wherein

the LNG storage tank is selected from a MOSS type tank, a membrane tank, or a self-supporting prismatic tank.

6. The ultra large marine floating system as claimed in claim 1, wherein a transfer area to the outside is provided on a lee side of the marine floating system.

7. The ultra large marine floating system as claimed in claim 1, wherein the plant zone includes not only the liquefied natural gas plant but also one or two or more additional facilities of a re-gasification facility, an electric power generation facility, an aluminum smelting facility and a scrap recycling facility of aluminum or iron.