[0009]

Meanwhile, customers demand to shorten the duration of service interruption as much as possible even if a trouble occurs in a mold switch housed in the switching device switch portion during on-site operation. This is done by replacing the mold switch involving the trouble with a new molded coil in as short a time as possible.

[0010]

In ordinary cases, the replacement of the entire switchgear is the restoration work that can be conducted in the shortest time. In this case, the cost burden of the switchgear for replacement is increased; therefore, customers desire to replace only a critical part involving a trouble to reduce the cost burden as much as possible.

[0011]

Because of this, it is important to take the following measures: the volume of the mold switch housing portion of the switching device unit portion is reduced as much as possible for the reduction of the size of the switchgear; and should a trouble occur in a mold switch portion, the mold switch is swiftly removed from the switchgear so that it can be replaced with a new mold switch.

[0012]

A description will be given to this method for replacing a mold switch with reference to FIG. 6.

securing the mold switch securing member. The bus section is formed above the central part of the cabinet; the switching device section is formed at the lower part of the bus section; the cable section is formed on the rear face side of the cabinet; and the control section is formed on the front face side of the cabinet. A bus-side bushing projected in the height direction of the mold switch and the bus are connected with each other; and a cable-side bushing projected in the horizontal direction of the molded coil and the cable are connected with each other. In this vacuum insulation switchgear, the spacing between the molded coil and the operation mechanism portion placed thereunder is shorter than the length of the bus-side bushing projected in the height direction of the molded coil.

[0020]

To achieve the above object, the method for replacing a mold switch of the invention is for replacing a mold switch formed by integrally molding a vacuum break switch having an interrupting function and a three-position disconnecting switch having a disconnection/earthing function, placed in a switching device section partitioned by a grounded metal plate and operated by an operation mechanism portion placed thereunder, in which mold switch a bus-side bushing projected in the height direction and a bus are connected with each other and a cable-side bushing projected in the horizontal direction and a cable are connected with each other. The method for replacing a mold

local sectional view.

[FIG. 2] FIG. 2 is a perspective view of an embodiment in which the vacuum insulation switchgear of the invention shown in FIG. 1 is applied as a feeder panel, illustrating it during replacement of a mold switch in the form of local sectional view.

[FIG. 3] FIG. 3 is a perspective view illustrating a switching device comprising the vacuum insulation switchgear of the invention shown in FIG. 1.

[FIG. 4] FIG. 4 is a plan view illustrating a switching device comprising an embodiment of a vacuum insulation switchgear of the invention.

[FIG. 5] FIG. 5 is a drawing for explaining a method for replacing a mold switch in an embodiment of a vacuum insulation switchgear of the invention.

[FIG. 6] FIG. 6 is a drawing for explaining a method for replacing a mold switch in a conventional vacuum insulation switchgear.

Description of Embodiments

[0023]

Hereafter, a description will be given to an embodiment of a vacuum insulation switchgear of the invention with reference to the drawings.

[0024]

FIG. 1 illustrates an embodiment in which a vacuum

insulation switchgear of the invention is applied as a feeder panel. In the drawing, the cabinet 1 of the vacuum insulation switchgear includes a bus section 1a, a switching device section 1b including an operation mechanism portion, a cable section 1c, and a control section 1d each of which is partitioned by a grounded metal plate.

[0025]

The bus section 1a is formed above the central part of the cabinet 1; the switching device section 1b is formed at the lower part of the bus section 1a; the cable section 1c is formed on the rear face side (left side of FIG. 1) of the cabinet 1; and the control section 1d is formed on the front face side (right side of FIG. 1) of the cabinet 1.

[0026]

In the bus section 1a, solid insulated three-phase buses 5 are placed in parallel to the front face of the cabinet 1. The buses 5 are rendered gasless by solid insulation to ensure ease of handling and safety. In the switching device section 1b, a vacuum break switch 8 having an interrupting function, a three-position disconnecting switch 9 having a disconnection/earthing function, and an operation mechanism portion 10 are placed.

[0027]

The cable section 1c is provided with: a terminal 2a for cable connection connected to a fixed electrode of the vacuum

in the height direction. As shown in FIG. 5, the length of each mold switch in the height direction is L+La and the overall size of the switchgear can be accordingly reduced.

[0040]

As a result, it is possible to meet both of customers' demands: the reduction in the overall size of a switchgear; and the capability to replace only the relevant mold switch if any trouble occurs in the mold switch portion.

[0041]

In addition to the above-mentioned effect, this embodiment brings about the effect described below. The mold switch securing member 21 for securing mold switches 20 can be separated from the switching device switch support member 27 and the interphase metal plates 23. Therefore, when these members are removed, the mold switch securing member 21 is reduced in weight and can be easily pulled upward.

Reference Sings List

[0042]

1 --- Cabinet,

1a --- Bus section,

1b --- Switching device section,

1c --- Cable section,

1d --- Control section,

2 --- T-shaped cable head,

2a --- Terminal,

3 --- Cable,

4 --- Current transformer,

5 --- Bus,

6 --- Current transformer for system protection,

8 --- Vacuum break switch,

9 --- Three-position disconnecting switch,

10 --- Operation mechanism portion,

20 --- Mold switch,

21 --- Mold switch securing member,

22 --- Fastening means,

23 --- Interphase grounded metal plate,

Mold switch 24 --- Switching device support member,

25 --- Bus-side bushing,

26 --- Cable-side bushing

Claims

[Claim 1]

A vacuum insulation switchgear comprising:

a cabinet including a switching device section with an operation mechanism portion placed thereunder, a bus section in which a bus is placed, a cable section in which a cable is placed, and a control section, each of the sections being partitioned by a grounded metal plate;

a mold switch installed in the switching device section and obtained by integrally molding a vacuum break switch having an interrupting function and a three-position disconnecting switch having a disconnection/earthing function, the switches being operated by the operation mechanism portion;

a mold switch securing member securing the mold switch in the cabinet; and

a switching device support member supporting and securing the mold switch securing member,

in which vacuum insulation switchgear, the bus section is formed above the central part of the cabinet, the switching device section is formed at the lower part of the bus section, the cable section is formed on the rear face side of the cabinet, and the control section is formed on the front face side of the cabinet and a bus-side bushing projected in the height direction of the mold switch and the bus are connected with each other and a cable-side bushing projected in the horizontal

direction of the molded coil and the cable are connected with each other, the vacuum insulation switchgear being characterized in that:

the spacing between the molded coil and the operation mechanism portion placed thereunder is shorter than the length of the bus-side bushing projected in the height direction of the molded coil.

[Claim 2]

The vacuum insulation switchgear according to Claim 1, characterized in that:

the mold switch securing member is connected with the switching device support member by a connectable/removable fastening member.

[Claim 3]

The vacuum insulation switchgear according to Claim 2, characterized in that:

the three mold switches are arranged in three rows with an interphase metal plate placed in-between and the mold switch securing member is connected with the interphase metal plate by a removable fastening member.

[Claim 4]

The vacuum insulation switchgear according to Claim 2 or 3, characterized in that:

the fastening member is a bolt.

[Claim 5]

[0009]

Meanwhile, customers demand to shorten the duration of service interruption as much as possible even if a trouble occurs in a mold switch housed in the switching device unit portion during on-site operation. This is done by replacing the mold switch involving the trouble with a new mold switch in as short a time as possible.

[0010]

In ordinary cases, the replacement of the entire switchgear is the restoration work that can be conducted in the shortest time. In this case, the cost burden of the switchgear for replacement is increased; therefore, customers desire to replace only a critical part involving a trouble to reduce the cost burden as much as possible.

[0011]

Because of this, it is important to take the following measures: the volume of the mold switch housing portion of the switching device unit portion is reduced as much as possible for the reduction of the size of the switchgear; and should a trouble occur in a mold switch portion, the mold switch is swiftly removed from the switchgear so that it can be replaced with a new mold switch.

[0012]

A description will be given to this method for replacing a mold switch with reference to FIG. 6.

securing the mold switch securing member. The bus section is formed above the central part of the cabinet; the switching device section is formed below the bus section;
the cable section is formed on the rear face side of the cabinet; and the control section is formed on the front face side of the cabinet. A bus-side bushing projected in the height direction of the mold switch and the bus are connected with each other; and a cable-side bushing projected in the horizontal direction of the mold switch and the cable are connected with each other. In this vacuum insulation switchgear, the spacing between the mold switch and the operation mechanism portion placed thereunder is shorter than the length of the bus-side bushing projected in the height direction of the mold switch.
[0020]

To achieve the above object, the method for replacing a mold switch of the invention is for replacing a mold switch formed by integrally molding a vacuum break switch having an interrupting function and a three-position disconnecting switch having a disconnection/earthing function, placed in a switching device section partitioned by a grounded metal plate and operated by an operation mechanism portion placed thereunder, in which mold switch a bus-side bushing projected in the height direction and a bus are connected with each other and a cable-side bushing projected in the horizontal direction and a cable are connected with each other. The method for replacing a mold

local sectional view.

[FIG. 2] FIG. 2 is a side view of an embodiment in which the vacuum insulation switchgear of the invention shown in FIG. 1 is applied as a feeder panel, illustrating it during replacement of a mold switch in the form of local sectional view.

[FIG. 3] FIG. 3 is a perspective view illustrating a switching device comprising the vacuum insulation switchgear of the invention shown in FIG. 1.

[FIG. 4] FIG. 4 is a plan view illustrating a switching device comprising an embodiment of a vacuum insulation switchgear of the invention.

[FIG. 5] FIG. 5 is a drawing for explaining a method for replacing a mold switch in an embodiment of a vacuum insulation switchgear of the invention.

[FIG. 6] FIG. 6 is a drawing for explaining a method for replacing a mold switch in a conventional vacuum insulation switchgear.

Description of Embodiments

[0023]

Hereafter, a description will be given to an embodiment of a vacuum insulation switchgear of the invention with reference to the drawings.

[0024]

FIG. 1 illustrates an embodiment in which a vacuum

insulation switchgear of the invention is applied as a feeder panel. In the drawing, the cabinet 1 of the vacuum insulation switchgear includes a bus section 1a, a switching device section 1b including an operation mechanism portion, a cable section 1c, and a control section 1d each of which is partitioned by a grounded metal plate.

[0025]

The bus section 1a is formed above the central part of the cabinet 1; the switching device section 1b is formed below the bus section 1a; the cable section 1c is formed on the rear face side (left side of FIG. 1) of the cabinet 1; and the control section 1d is formed on the front face side (right side of FIG. 1) of the cabinet 1.

[0026]

In the bus section 1a, solid insulated three-phase buses 5 are placed in parallel to the front face of the cabinet 1. The buses 5 are rendered gasless by solid insulation to ensure ease of handling and safety. In the switching device section 1b, a vacuum break switch 8 having an interrupting function, a three-position disconnecting switch 9 having a disconnection/earthing function, and an operation mechanism portion 10 are placed.

[0027]

The cable section 1c is provided with: a terminal 2a for cable connection connected to a fixed electrode of the vacuum

in the height direction. As shown in FIG. 5, the length of each mold switch in the height direction is L+La and the overall size of the switchgear can be accordingly reduced.

[0040]

As a result, it is possible to meet both of customers' demands: the reduction in the overall size of a switchgear; and the capability to replace only the relevant mold switch if any trouble occurs in the mold switch portion.

[0041]

In addition to the above-mentioned effect, this embodiment brings about the effect described below. The mold switch securing member 21 for securing mold switches 20 can be separated from the switching device support member 24 and the interphase grounded metal plates 23. Therefore, when these members are removed, the mold switch securing member 21 is reduced in weight and can be easily pulled upward.

Reference Sings List

[0042]

1 --- Cabinet,

1a --- Bus section,

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1d --- Control section,

2 --- T-shaped cable head,

2a --- Terminal,

3 --- Cable,

4 --- Current transformer,

5 --- Bus,

6 --- Current transformer for system protection

8 --- Vacuum break switch,

9 --- Three-position disconnecting switch,

10 --- Operation mechanism portion,

20 --- Mold switch,

21 --- Mold switch securing member,

22 --- Fastening means,

23 --- Interphase grounded metal plate,

24 --- Switching device support member,

25 --- Bus-side bushing,

26 --- Cable-side bushing

Claims

[Claim 1]

A vacuum insulation switchgear comprising:

a cabinet including a switching device section with an operation mechanism portion placed thereunder, a bus section in which a bus is placed, a cable section in which a cable is placed, and a control section, each of the sections being partitioned by a grounded metal plate;

a mold switch installed in the switching device section and obtained by integrally molding a vacuum break switch having an interrupting function and a three-position disconnecting switch having a disconnection/earthing function, the switches being operated by the operation mechanism portion;

a mold switch securing member securing the mold switch in the cabinet; and

a switching device support member supporting and securing the mold switch securing member,

in which vacuum insulation switchgear, the bus section is formed above the central part of the cabinet, the switching device section is formed below the bus section,

the cable section is formed on the rear face side of the cabinet, and the control section is formed on the front face side of the cabinet and a bus-side bushing projected in

the height direction of the mold switch and the bus are connected with each other and a cable-side bushing projected in the horizontal direction of the mold switch and the cable are connected with each other, the vacuum insulation switchgear being characterized in that:

the spacing between the mold switch and the operation mechanism portion placed thereunder is shorter than the length of the bus-side bushing projected in the height direction of the mold switch.

[Claim 2]

The vacuum insulation switchgear according to Claim 1, characterized in that:

the mold switch securing member is connected with the switching device support member by a connectable/removable fastening member.

[Claim 3]

The vacuum insulation switchgear according to Claim 2, characterized in that:

the three mold switches are arranged in three rows with an interphase grounded metal plate placed in-between and the mold switch securing member is connected with the interphase grounded metal plate by a removable fastening member.

[Claim 4]

The vacuum insulation switchgear according to Claim 2 or 3, characterized in that:

the fastening member is a bolt.

[Claim 5]