Это описание действующих кабелей. А нам нужны аналоги.

**1. Objective:**

The oil-filled pressure cables are used to transmit power from the block transformers in the plant’s underground transformer chamber to the 220KV outdoor relay substation.

- The line of 220 KV oil-filled pressure cables includes:

\* 220KV oil-filled pressure cable

\* Ceramic head connecting cable and transformer phase

\* Terminal box on the outlet of the oil-filled pressure cable line

\* Distribution boxes on the outlet of the oil-filled pressure cable line

\* In order to maintain oil pressure, the oil-filled pressure pump station is required as stipulated.

**2. Oil-filled pressure cable:**

Specification of the oil-filled pressure cable is specified at table 2.5a

Table 2.5a

|  |  |  |
| --- | --- | --- |
| No. | Specification | Data – Code |
| - | Code of oil-filled pressure cable  | MBDTK-1x625-220 |
| - | Origin | CCCP |
| - | Interpretation of components of the code |  |
|  | \* Oil-filled pressure cable  | M |
|  | \* High voltage cable  | B |
|  | \* Pressure cable  | D |
|  | \* Placed in tight pipe | T |
|  | \* Transported in a oil steel box | K |
|  | \* Cross-section of cable core mm2 | 1x625 |
|  | \* Voltage of cable KV | 220 |
| - | Technical requirements  |  |
|  | \* Cable is placed in a tight pipe, transported in a specific-purposed oil container before erection  |  |
|  | \* 3 cable cores of three phases are placed in tight steel pipe as specified | Ø 219x10 |
|  | \* Oil of the cable is filled in the pipe  | Gas-filled |
|  | \* The first segment is connected to each phase of the transformer and the cable core outlet is placed in a brass distribution pipe as specified. | Ø 100x5 (brass pipe) |
| - | Main specification of oil-filled pressure cable  |  |
|  | \* Rated voltage | 220KV |

- Detailed equipment are specified at table 2.5b

|  |  |  |  |
| --- | --- | --- | --- |
| No | Name of cable terminal aggregate equipment | Quantity | Technical data – code  |
| - | Oil-filled cable code  |  | MBDTK-1x625 |
| - | Alloy steel pipe (containing 3 cores) for 8 units | 8 | Ø219x10 |
| - | Brass distribution pipe (each core) 6 sections x 8 units | 48 | Ø100x5 |
| - | Cable end box (3x8 unit) | 24 | KMBDT-220 |
| - | Cable head box (3x8 units) | 24 | KTBD-220 |
| - | Distribution box (1x8 units) | 8 | CPMBDT-220 |
| - | Distribution box (1x8 units) | 8 | PMBDT-220 |
| - | Oil pressured pump station (4 pumps) – 2 stations | 2 | AIIy1-AII |
| - | Vacuum pump  | 2 | CK-AB3-20 |
| - | Solenoid valve | 8 | Dy50, Py16 |
| - | Stop valve of the system  | 30 | Dy50, Py15 |
| - | Stop vale to electric contact pressure gauge  | 10 | Dy50, Py25 |
| - | Collector containing cable head I-II | 2 | Ø57x3,5 |
| - | Pressure self-recording gauge  | 2 | MTC-71 |
| - | Indicating pressure gauge | 4 | MII-4(MIII) |
| - | Vacuum electric contact pressure gauge | 2 | ЭKMB |
| - | Electric contact pressure gauge | 10 | ЭKM-1 |

3. Basic structure of oil-filled cable aggregate equipment:

- Cable connector KMBдT-220 includes:

\* Cable supporting plate connected to cone top

\* Insulation core ceramic bulb on cable supporting plate for outlet busway

\* Current busway is pressed on one head of the cable core and soft knitted brass for heat compensation segment.

\* One head of the heat compensation segment is connected to the outlet of the cable connector.

\* Oil resistant rubber gasket is used for fixing

\* Insulation inside the cable connector is of reinforced insulation layer

- Cable connector TBд-220 includes:

\* Cable connection box and bushing of the one-phase transformer are connected with an intermediate box in which there is an insulation plate and it is filled up with transformer oil.

\* Oil in the intermediate box is not circulated with transformer oil and cable oil.

\* Cable connector has its own expansion tank to ensure the expansion of the oil volume when the temperature changes, 3 cable connectors have a common expansion tank.

- Branch cable connection box CPMBдT-220 is used to connect cable at the main pipe transition segment to the brass manifold.

\* Connection box includes outer sheath of transition rings and flanges to connect brass manifold.

\* Inside the box are connections of conductor cores and insulated in reinforced manner

- Distribution box PMBдT-220 is used to separate cable phases from the main pipe to connect to ceramic insulator KM (outlet of the oil-filled pressure cable line) via bushing ᴦMAA to the transition station.

\* The box include transition rings welded to the main pipe

\* The box body is consisted of a flange to weld to the brass manifold ceramics.

4. AIIy oil pressured pump station:

- AIIy oil pressured pump station works in automatic mode to supplement oil with maintained pressure in cables within stipulated limits.

- Oil pump equipment includes: 2 oil pump stations AIIy-1 and AIIy-2, each station is consisted of two oil pressured pumps, one working in automatic mode, the other in standby mode.

- Oil pressured units are connected to common two segment collector system. To ensure safe work, oil-filled pressure cable lines are arranged in the following segments:

\* Oil-filled pressure cable line of 1-3-5-7 units is connected to segment 1

\* Oil-filled pressure cable line of 2-4-6-8 units is connected to segment 2

\* 2 common collectors’ valves are connected, when necessary it can change the mode of operation depending on the specific operation situation of oil-filled cable line of the units

- AIIy-1 and AIIy-2 oil pump station aggregate includes:

\* Two cable oil tanks of 4m3 from this tank is supplemented or received from return oil-filled cable when oil temperature in the cable decreases or increase respectively.

\* Oil separation equipment

\* Vacuum pump

\* Inspection equipment, pressure gauge, electric contact, one-way valve, solenoid valve, etc.

|  |  |
| --- | --- |
| \* Cross-section of oil-filled cable (1 core) | 625mm2 |
| \* Insulation oil in pipe | 5RA |
| - Origin | Japan |
| - Puncture voltage  | 45KV |
| - Oil increase tgδ % | 1 |
| \* Oil pressure in the working pipe  | 13,5-15,5 kg/cm2 |
| \* Oil-filled cable insulation  |  |
| - Outside the externally soaked insulation paper  | Semi-conducting tape  |
| - Outside the semi-conducting filter membrane  | 2 layers of tape  |
| - Insulation protection when sliding inside pipe  | Two brass cords are wound in moon shape  |
| Pressure cables placed in oil-pressure pipe are arranged at the top of the high-voltage transformer chamber | ▽ 46,0 |
| Length of the oil-filled pressure cable line is consistent with each unit. |  |
| \* Oil-filled pressure cable line of unit 1 | L1=555m |
| \* Oil-filled pressure cable line of unit 2 | L2=571m |
| \* Oil-filled pressure cable line of unit 3 | L3=593m |
| \* Oil-filled pressure cable line of unit 4 | L4=614m |
| \* Oil-filled pressure cable line of unit 5 | L5=555m |
| \* Oil-filled pressure cable line of unit 6 | L6=571m |
| \* Oil-filled pressure cable line of unit 7 | L7=593m |
| \* Oil-filled pressure cable line of unit 8 | L8=614m |

2. 220KV oil-filled pressure cable aggregate equipment:

Diagram of oil-filled pressure cable aggregate is shown in the drawing.

Oil-filled pressure cable aggregate equipment include:

1- Oil-filled pressure cable pipe

2- Brass manifold

3- Cable connector KM, KT

4- Branch cable connection box CPM, PM

5- Solenoid valves, stop valves, discharge valves

6- Pressure gauges

7- Oil pressured pump station

8- Vacuum cable oil pump station