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ALGORITHM AND THE BLOCK DIAGRAM REMOTE CONTROL SUCCESSFUL AUTOMATIC RECLOSING PARTITIONED SWITCH LEP

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To increase the reliability of electricity transmission line (PTL) and especially extended divided into parts (partition the). Between them, set switches, called partitioned. In normal operation, these switches are turned on and come into effect - are switched off when a short-circuit (SC) in the line at the point of installation. And after a trip, if the circuit breaker is equipped with an auto-reclose (AR), the switch turns on again. This inclusion can be successful (RS unstable) and unsuccessful (SC stable) when the switch is turned on again switched off again. [3]

When the automation of electrical networks, it is important to know about the position switch transmission line (on or off) and whether they committed action to restore the electricity supply in the event of stable or unstable fault and that information must be obtained on the substation remotely. [4]

The purpose of research - development of the algorithm and the block diagram remote control of reclosing is partitioned switch lines.

Materials and methods issledovaniy.Dlya timely information obuspeshnom AR partitioned switch transmission lines developed the method described in [1]. According to this method at the beginning of transmission lines control the appearance of the cast short-circuit current. Since the advent of the cast short-circuit current time starts equal to the response time is partitioned protect switch, and control the time of the throw off the fault current. If at the end of the countdown is switched off throw short-circuit current, it establishes the fact partitioned off switch lines. And

then, after throwing off short-circuit current, start counting time equal to the exposure time of the AR breaker. At the same time control the appearance of the second inrush current. And if at the end of the time delay reclose partitioned switch appears inrush current value greater than the normal working, but less than short-circuit current, then to establish the facts of successful reclosing partitioned switch transmission lines [1].

Results issledovaniy.Dlya successful implementation of the control switch AR partitioned transmission line algorithm (Figure 1).

The algorithm for the remote control operation is partitioned vyklyuchatelyaLEP is based on the analysis of charts [2], reflecting the various options for its work. Start algorithm provides for embedded data values and the minimum operating current fault current, exposure time AR vyklyuchatelya.Nachalo rabotyalgoritma (see. Figure 1) provides control of the appearance of short-circuit current in the transmission line. When the condition inherent in the block 4 of the algorithm concludes that occurred fault and starts timer, counting time equal to the time of operation of protection partitioned switch lines. This enables the units 6 and 7. At the time of closure timing by blocks 8 and 9 is controlled by a current. When the condition inherent in the block 9, unit 10 is given a signal to disconnect partitioned switch lines. A further included timer unit 11 (time delay switch APVsektsioniruyuschego) .It is provided by blocks 12 and 13. At the moment of closure timing by blocks 14 and 15 is controlled by a current. Block 15 is controlled by the appearance of the cast of operating current power lines (caused by load connection located behind the transmission line is partitioned switch). When the condition inherent in the block 15, block 16, a signal is successful AR partitioned switch lines.

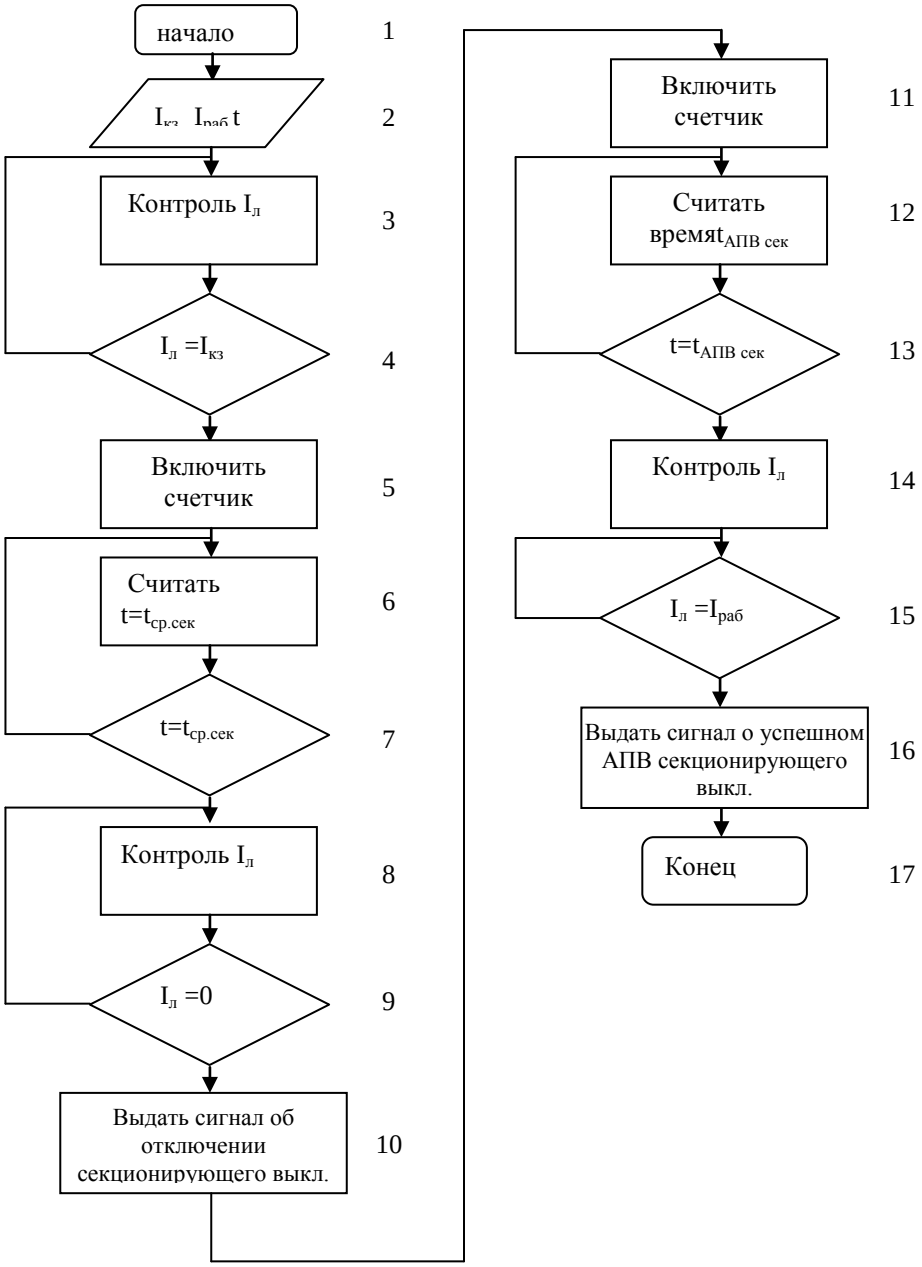

Fig. 1. Algorithm for the remote control switch is partitioned power lines

On the basis of the algorithm was compiled block diagram of the remote control of a successful auto-reclose partitioned switch transmission lines (Fig. 2) .Rassmotrim work on the block diagram of an example of partitioned switch Q3.

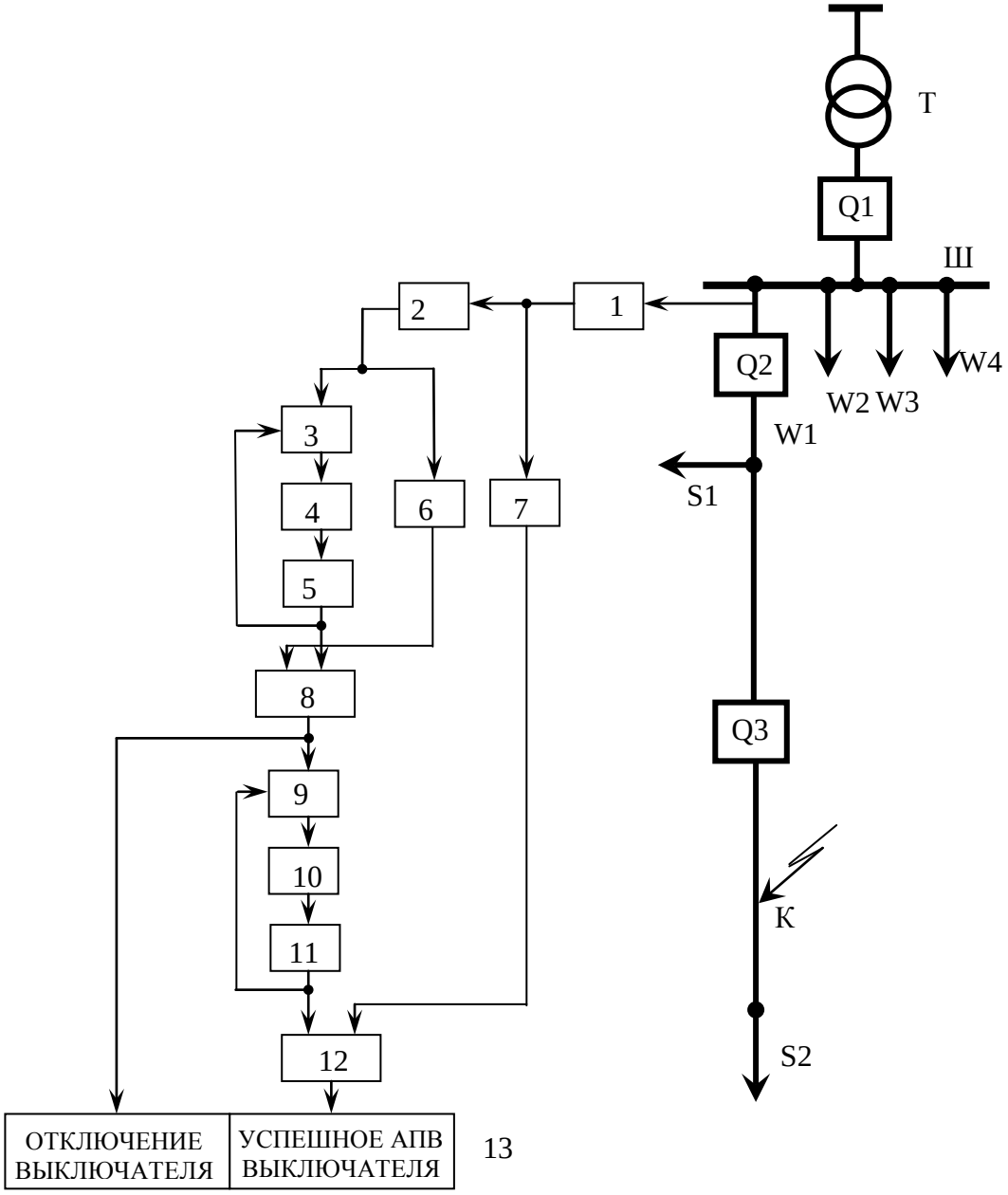

Figure 2. Simplified scheme of the substation and a block diagram of the remote control of a successful reclosure breaker Q3:

T - Power Transformer; Q1 - main switch tires; W1, W2, W3, W4 - transmission line; Q2 - LEPW1 head switch; Q3 - partitioned switch LEPW1; S1 and S2 - load; K - fault point; 1 - current transformer (CT); 2 - the gauge of short-circuit current (DTKZ); 3, 9 - MEMORY; 4, 10 - DELAY; 5, 11 - REPEATER; 6 - NO 7 - monostable; 8, 12 - I; 13 - recording unit (RU)

In normal mode, the controlled partition the switch Q3 is turned on. At the outlet 1 has a CT value of the output signal due to the operating current, but not

enough to trigger the monostable DTKZ 2 and 7. Therefore, the output signal of the NOR 6 only on one input of AND gate element 8 is insufficient for its operation and the circuit is in the control mode .

When fault at point K output value CT 1 is sufficient to trip DTKZ 2, therefore its output signal appears (see. Fig. 2), which goes to input of memory 3 and NOT element 6. The output of the NOR signal disappears 6 coming before the first input of the AND 8. signal received from DTKZ 2, remembered element memory 3 and goes to the input of a delay element 4, the output of which the signal will appear in a time equal to the time of operation of protection partitioned switch Q3. And the output element 4 signal goes to the input element REPEATER 5. This element will give a single pulse, which resets the memory element 3 and goes to the second input of the AND 8. At this time, the controlled partition the switch Q3 disconnects short-circuit current and DTKZ 2 disappears output. From this point on will be output from the NOT element 6, which goes to a first input of AND gate 8. The simultaneous presence of the two input signals at the input of AND gate 8 will cause its output signal, which goes to the input member 9 MEMORY and RC 13. This in EN 13 poyavitsyainformatsiya that happened partitioned off switch lines. The signal on the input element 9, it will be remembered and will go to the input of a delay element 10, the output of which the signal will appear in a time equal to the exposure time is partitioned AR switch Q3. After this time, the signal from the element 10 will go to the input element 11 REPEATER, this element will give a single pulse, which resets the memory element 9 and will go to the first input of AND gate 12. At the same time the switch Q3 is turned on. Moreover, if the switch is successful, the output signal CT 1 appears insufficient to trigger DTKZ 2, but sufficient to trigger the monostable element 7. The output signal from the one-shot 7 will go to the second input of AND gate 12. This will result in its output , which goes on RU 13 and provide the appearance of information out there about what happened successful reclosure partitioned switch transmission line Q3.

If a short circuit at the point K will be steady, the Q3 switch again after turning off. This output DTKZ 2 reappears signal. This will result in a scheme in

place, and it will duplicate the signal flow in the EN 13, ensure that information in it about how to disable the switch Q3.

Conclutions

Thus, by considering the block diagram on the basis of the algorithm is possible to develop a device that would allow the substation to receive timely information about how to disable and successful reclosure sectionalizing switches lines.