
Maintenance of Circuit Breaker

Abstract: Circuit breaker maintenance procedures are defined by regulations[1], recommendations and guidelines. Due to the obsolete regulations (as has been already stated in 1994 at the Točč conference[2]) and the requirements of the new Slovenian Energy Law[3], it is necessary to determine new maintenance methods. The paper presents a decision support method for maintenance of MV circuit breakers in the 110/MV substations based on assessment of breaker state and importance. This should stimulate a new maintenance approach. The state and importance matrix and its graphical presentation have been made for MV circuit breakers in the distribution utility Elektro Primorska. The assessment was performed by five criteria based on data from the integrated information system (IIS) and SCADA. The method is a foundation for a maintenance cost reduction.

1. uvod

Referat obravnava nov način odločanja o vzdrževanju stikalnih aparatov z upoštevanjem zakonske regulativne in pomembnosti aparata glede na mesto vgradnje. S pomočjo meril je ocenjeno stanje in pomembnosti aparata. Medsebojno primerljivost dosežemo s primerjavo relativnih vrednosti. Pomembno je razmerja med težnostmi faktorji.
2. UGOTAVLJANJE STANJA

Stanje odklopnikov ocenjujemo s pomočjo petih meril: starost, tip, število delovanj v opazovanem letu, povprečna obremenitev.

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3. UGOTAVLJANJE POEMBNOSTI

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| leta | 2000 |
4. MATRIKA STANJE / POMEMBNOST

V matriki združimo stanje in pomembnost. Ordinata predstavlja stanje, abscisa pa pomembnost. Vrednosti so podane v relativni vrednosti zaradi lažjega in preglednejšega prikaza.

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V tabeli 8 in 9 je predstavljena tudi prioritetna po merilu stanja in po merilu pomembnosti. Vrednosti so razdeljene na tretjine.

### tabela 8: STANJE PRIORITETA

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<th>oznaka TR</th>
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### tabela 9: POMEMBNOST PRIORITETA

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MATRIKA S/P odklopnikov 20kV
v RTP 110/20
ZAKLJUČEK


Metoda je pomožno orodje pri odločanju o vzdrževanju. Zasledovanje pomembnosti v kombinaciji s stanjem pomeni lahko zmanjšanje oziroma optimiziranje stroškov vzdrževanja. Stanje naprav smo tudi v dosedanji praksi srečali, medtem ko je pogled pomembnosti prisoten še v zadnjih letih kot posledica sprememb v energetskem sektorju. Za širše uporabo je potrebno imeti dobro razvit informacijski sistem in sodoben sistem daljinskega vodenja oziroma sodoben DCV s potrebnimi funkcijami, da se vse obdelave izvajajo stalno in povsem avtomatizirano.

6. LITERATURA