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THE DEVELOPMENT OF HIGH VOLTAGE HIGH FREQUENCY 60kVA POWER TRANSFORMER FOR SUPPLYING OF ELECTROSTATIC PRECIPITATOR STATIONS ON THERMAL POWER PLANTS

Slobodan Vukosavic*, Zeljko Despotovic, Obrad Djordjevic***
*School of Electrical Engineering, Belgrade, Serbia
**Mihajlo Pupin Institute , Belgrade, Serbia

Abstract: *The high frequency supply of electrostatic filter allows significant savings in the surface of the electrodes, the amount of embedded steel, electricity and more efficient separation of particles of smoke and ash. One of the key components of high frequency (HF) power converter is a power step-up voltage transformer. Its implementation requires solving a whole range of engineering and technical problems, for which the scientific and professional public still has no adequate solution. he work of the HF transformer applications, there are problems of degradation due dielektrophoresis, due to the presence of high speed changes of the electric field. Besides this, the design ferrite core transformer for high power is related to problems caused by the presence of a positive temperature coefficient of power losses in the core. The paper presents the results of the project high voltage high frequency (HVHF) transformers with a description of solutions of major problems. t the end will be presented experimental results obtained by testing in laboratory conditions.*

Key words: ***Electrostatic precipitator, HVHF transformer, power converter, IGBT, high frequency supply, open-circuit test, short-circuit test.***

RAZVOJ *VNVF* TRANSFORMATORA SNAGE 60kVA ZA NAPAJANJE ELEKTRO FILTARSKIH POSTROJENJA U TERMOBLOKOVIMA EPS-a

Sadržaj: *Visokofrekventno napajanje elektrostatičkih filtara omogućuje značajne uštede u površini elektroda, količini ugrađenog čelika, električnoj energiji i efikasnije izdvajanje čestica dima i pepela. Jedna od ključnih komponenti visokofrekventnog (VF) energetskog pretvarača je energetski transformator podizač napona. Njegova realizacija zahteva rešavanje čitavog niza stručnih i tehničkih problema, za koje u naučnoj i stručnoj javnosti još uvek nema primerenog rešenja. U radu transformatora pri VF primenama postoje problemi degradacije dielektrika usled dielektroforeze, prisutne usled velike brzine promene električnog polja. Pored ovoga, projektovanje feritnog jezgra za transformator velike snage je skopčano sa problemima usled prisustva pozitivnog temperaturnog koeficijenta gubitaka snage u jezgru. U radu su prikazani rezultati projekta visokonaponskog visokofrekventnog (VNVF) transformatora sa opisom rešenja najznačajnijih problema. Na kraju će biti prezentirani eksperimentalni rezultati dobijeni testiranjem u laboratorijskim uslovima..*

Kjučne reči: ***Elektrostatički izdvajač, VNVF transformator, energetski pretvarač, IGBT, visokofrekventno napajanje, prazan hod, kratak spoj.***