

UCH FAZALI IKKI CHULG‘AMLI TRANSFORMATORNING YUKLAMA HOLATIDAGI TAVSIFLARI VA PARAMETRLARINI TEKSHIRISH

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***Annotatsiya:** Mazkur maqolada uch fazali ikki chulg‘amli transformatorning yuklama holatidagi ish rejimlari tahlil qilinadi. Transformatorning asosiy elektr parametrlarini aniqlash, energiya samaradorligini baholash va yirik sanoat iste‘molchilariga xizmat ko‘rsatishdagi ahamiyati yoritiladi. Amaliy o‘lchovlar va hisob-kitoblar asosida yuklama ostidagi kuchlanishning tushishi, toklar va quvvat ko‘rsatkichlari o‘rganiladi.*

***Kalit so‘zlar:** transformator, yuklama holati, kuchlanish tushishi, quvvat omili, samaradorlik, aktiv va reaktiv quvvat.*

CHECKING THE CHARACTERISTICS AND PARAMETERS OF A THREE-PHASE TWO-WIRE TRANSFORMER UNDER LOAD

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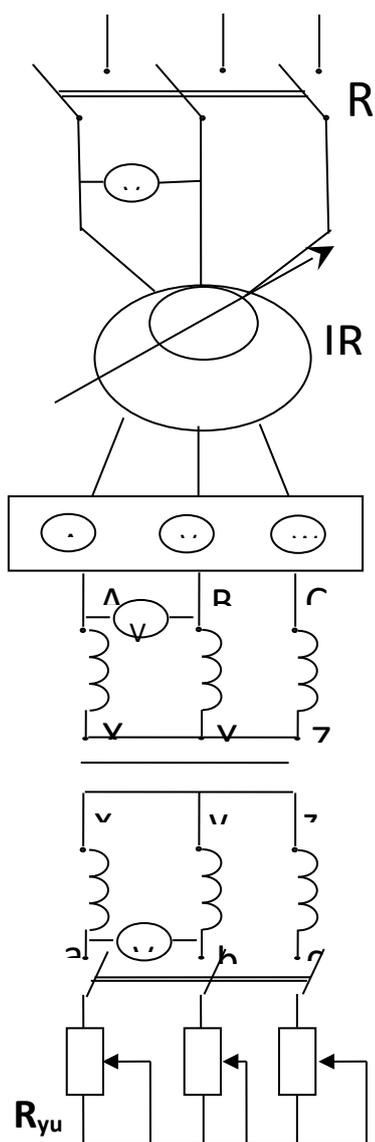
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***Abstract:** This article analyzes the operating modes of a three-phase two-winding transformer under load. The importance of determining the main electrical parameters of the transformer, assessing its energy efficiency and servicing large industrial consumers is highlighted. Based on practical measurements and calculations, the voltage drop, currents and power indicators under load are studied.*

***Keywords:** transformer, load condition, voltage drop, power factor, efficiency, active and reactive power.*

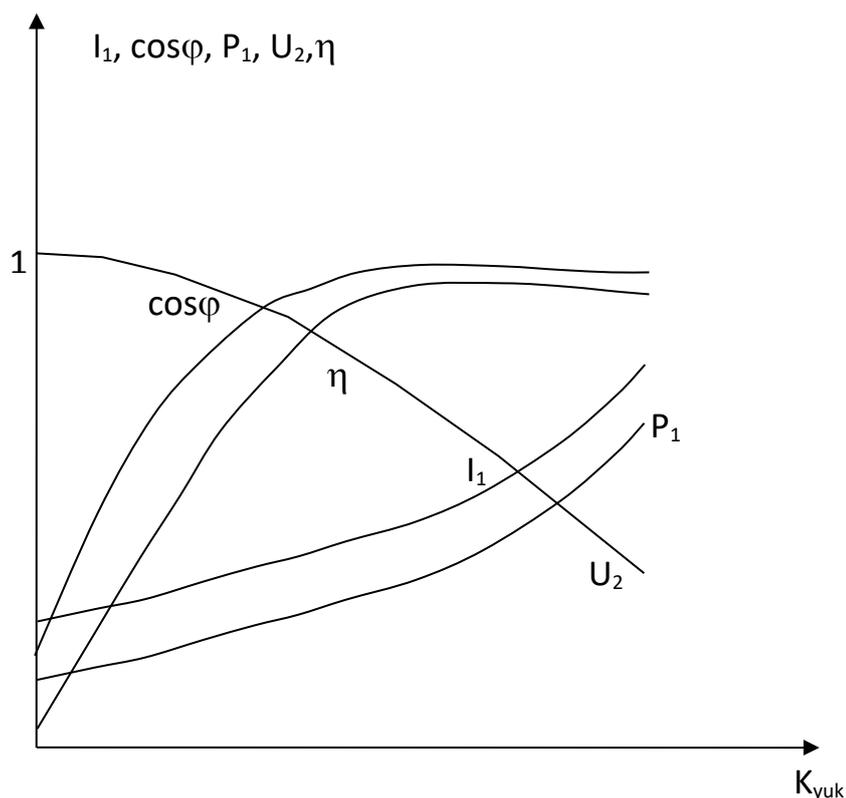
UCH FAZALI IKKI CHULG‘AMLI TRANSFORMATORNING YUKLAMA HOLATIDAGI TAVSIFLARI VA PARAMETRLARINI TEKSHIRISH

Transformatorning yukli ishlash rejimini hosil qilish uchun 1- rasmdagi kabi, birlamchi chulg'amga nominal kuchlanish berib, ikkilamchi chulg'amni esa istemolchiga ulash lozim. Kuchlanish $U_1=U_{1n}$ qiymatni o'zgartirmasdan saqlagan holda, Z yuk ning 4-5 ta qiymatlari uchun birlamchi chulg'am toklari, quvvati va ikkilamchi chulg'am toki hamda kuchlanishlarining qiymatlarini o'lchov asboblari ko'rsatkichlarini yozib olinadi.



1- rasm. Transformator yuklama sxemasi

Birlamchi chulg'am tokining o'rtacha qiymati, Quvvati va quvvat koeffitsientlari avvalgi tajribalardagidek hisoblanib jadvalning o'ng tomoni to'ldiriladi.



2-rasm.Transformatorning yuklama tavsifi

Kichik kuchlanishli 10/0.4 kV li, 100 kVA quvvatga ega transformator laboratoriyada sinovdan o'tkazildi.

. Asbob-uskunalar

Uch fazali yuklama stendi; Voltmetr, ampermetr, vattmetr; Reaktiv yuklar; Termopara va infraqizil harorat o'lchagichlar

O'lchov natijalari

Yuklama (%)	I_1 (A)	U_2 (V)	P (kW)	$\cos(\varphi)$	Harorat ($^{\circ}\text{C}$)
0	2.1	400	0.12	-	25
25	9.3	397	23.8	0.85	32
50	18.5	392	47.2	0.88	40
75	27.6	388	70.1	0.91	52
100	36.7	384	93.5	0.93	65

Tahlil va muhokama

Yuqoridagi natijalarga ko'ra, yuklama oshgani sari ikkilamchi kuchlanishda sezilarli tushish kuzatilmoqda, bu esa chulg'am qarshiligi va dispers induktivlik sababli yuzaga keladi. Quvvat omili yuklama ortishi bilan yaxshilanmoqda, bu

transformatorning to'liq quvvatda optimal ishlashini ko'rsatadi. Harorat oshishi ham transformatorni ortiqcha yuklash xavfiga ishora qiladi.

Xulosa

Transformatorlarning yuklama holatidagi elektr-issiklik tavsiflarini tekshirish ularning ishonchli ishlashini ta'minlashda muhim ahamiyatga ega. Yuklama ortishi kuchlanish tushishi va harorat ko'tarilishi bilan bog'liq bo'lib, buning oldini olish uchun yuklamani me'yorida ushlab turish zarur. Energiya samaradorligi yuqori bo'lgan transformatorlarni tanlash sanoat tarmoqlarida energiyani tejashga yordam beradi.

Foydalanilgan adabiyotlar.

Asosiy adabiyotlar:

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