QISQA TUTASHUV NATIJASIDA ELEKTR QURLIMANING YONG‘INGA BARDOSHLILIK HISOBI.

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Annotatsiya: *Qisqa tutashuv natijasida elektr qurlimaning yong‘inga bardoshlilik hisobi aniqlash.Elektro energiya istimolchilari tarmoqqa birdaniga ulanmaydi. Buning ustiga dvigatellar hamma vaqt to’la yuklash bilan ishlayvermaydi. Shuning uchun hisoblashda o’rnatilgan kilovvat emas, uning istemolchi tomonidan birdaniga foydalanish mumkin bo’lgan qismi nazarga olinadi.*

Kalit so’zlar: *Qisqa tutashuv,hisoblagich,qurilma,bardoshlilik*

Hisoblangan quvvatning o’rnatilgan quvvatga nisbatan talab koeffitsenti deyiladi.

Bunda: P_h va I_h–birdaniga foydalanishi mumkin bo’lgan (hisoblangan) quvvat yoki tok; $P_{o`}$ va$I_{o`}$ –o’rnatilgan quvvat yoki tok; K_m-talab koefitsenti.

Yoritish yuklamalari uchun talab koeffitsenti:

1. Tashqi yoritish tarmoqlari uchun K_m=1
2. Ro’zg’ordagi yoritish tarmoqlari uchun K_m=0.7-0.8
3. Sanoat korxonalari tarmoqlari uchun K_m=0.7-0.9
4. Uzoq vaqt davomida ishlaydigan dvigatellar uchun K_m=0.8

Ko’tarish mexanizmlarida ishlaydigan dvigatellar soni 1 dan 5 gacha bo’lsa K_m=0.8 ; 5 dan 10 gacha bo’lsa K_m=0.65 , dastgohlarda o’rnatilgan va takroriy qisqa muddatili rejimda ishlaydigan dvigatellar uchun 1 dan 5 gacha K_m=0.8, 5 dan 10 gacha K_m=0.5

Bir foizli o’zgaruvchan va o’zgarmas tarmoqlar uchun yoritish yuklanishida hisob qilingan tok:

$$I_x = \frac{K_m \cdot P_y}{U} = \frac{P_x}{U}. \quad (1)$$

Uch fazali tok zanjiri uchun:

$$I_x = \frac{K_m \cdot P_y}{\sqrt{3} \cdot U} = \frac{P_x}{\sqrt{3} \cdot U}. \quad (2)$$

O’zgarmas tok dvigatelining naminal toki:

$$I_n = \frac{P_n}{U \cdot h} \quad (3)$$

Uch fazali dvigatelning nominal toki:

$$I_н = \frac{P_н}{\sqrt{3} \cdot U \cdot \cos\varphi \cdot h} \quad (4)$$

η-elektor dvigatelining foydali ish koeffitsenti .

Dvigatellar uchun va ning qiymatlari ma'lumotnomalar va kataloglardan olinadi. Tahminiy hisoblashlarda 10-12 kVt gacha kichik quvvatli dvigatellar uchun η*cosφko'paytma qattiqligi 0.7:0.8 ga teng deb olinishi mumkin.

$$I_x = K_m \cdot I_н = K_m \cdot I_{ý} \quad (5)$$

Simlarning kesim yuzasi ular uchun yo'l qo'yiladigan qizishga ko'ra jadvaldan aniqlanadi. Jadvalda uzoq muddatli yo'l qo'yiladigan tok uchun standart kesimlari berilgan.

Simlarda yo'l qo'yiladigan tok hisoblanadigan tokdan kichik bo'lmasligi kerak, ya'ni:

$I_{yq} \geq I_h$ (6)

I_{yq} -yo'l qo'yilgan tok.

Saqlaglarning eruvchan qo'yilmalarini tanlash

Saqlagichlarning eruvchan qo'yilmalarning vazifasi simlarning qisqa tutashuv toklaridan va katta ortiqcha yuklanishdan saqlashdir. Hisoblash tokidan katta toklar o'tganida eruvchan quyma quyib ketishi kerak.

Erpuvchan quymaning normal toki I_{quy} liniyani himoya qilayotgan hisoblash tokiga teng yoki undan katta bo'lishi kerak, ya'ni:

$I_{quy} \geq I_h$ (6*)

Bitta dvigatelь uchun eruvchan quymaning nominal toki quyidagicha hisoblanadi.

A) dvigatelning nominal tok bo'yicha:

$I_{quy} \geq ά I_{nom}$ (7)

B) yurgazish toki bo'yicha

$$I_{қуй} \geq \frac{I_{ю}}{\beta} = \frac{K_I \cdot I_{ном}}{\beta} \quad (8)$$

Bundan: I_{nom}- dvigatelning normal toki, I_{yu}-dvigatelning yurgazish toki, ά-dvigatelning ish rejimiga bog'liq koeffitsenti (uzoq muddatli rejim uchun ά=1, takroriy ыisыa muddat rejimi uchun ά=1.25).

β-yurgizish sharoitini belgilaydigan koeffitsenti (normal sharoitda β-2.5, og'ir sharoitda β-(1.6-2), K_i-yurgizish tokining karraliligi.

Ishlayotgan bir guruh dvigatellar uchun eruvchan quymaning toki

$$I_{куй} = \frac{\Sigma I_{ном.дв.} + (I_{ю} - I_{ном})}{2{,}5} \quad (9)$$

Bunda: $\sum I_{nom.}$- birdaniga ishlaydigan dvigatellar nominal toklarining yig'indisi.

I_{yu}- I_{nom} -dvigatelni yurgizish toki va nominal toklar farqi.

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