\( w_r^z \quad w_r \quad w_r^* \quad w_r = w_{\text{syn}} \quad w_r > w_r^* \)

\[ V_o \quad w_{\text{syn}} \quad \text{Unit 1} \quad \text{Unit 2} \]

\[ P_1 \Rightarrow 0 \quad P_2 \Rightarrow P_{\text{max}} \]
Excitation Systems
Excitors

AC

Brushless AC

Static

DC

1st in time
Variable stationery

Commutators & brushes

Art as usual, real.
University of Idaho

A.C. Excitor

100 kVA

Exciter

main w/lc

AC supply

chd rect.

CSCR bridge

slip rings & brushes
Static Excitation

Stationary (not rotating)

60°

360 Hz

1 kV

13 kV

24 kV
Separately Excited DC m/c
Used as the exciter

A. Ignore Saturation (Physical Units)
\[ e_f = R_c e_f + \frac{dl}{dt} \]

\[ y_{ef} = L_{ef} \]

\[ k_x = \omega \cdot k \]

\[ e_x = k_x y_{ef} \]

\[ e_x = k_x y_{ef} \]
\[ e^x = k \cdot l_{cf} \text{ i.f.} \]

\[ R_j : = k \cdot l_{cf} \]

\[ e^x = R_j \text{ i.f.} \]


not ohm's law
ex 4 iif are not electrically connected

ex 4 iif are not electrically
magnetically connected
\[ e_{ef} = \frac{Rf \cdot \text{ex} + \frac{d\text{ef}}{dt}}{R_g} \]

\[ e_{ef} = \frac{Rf \cdot \text{ex} + t}{kr \cdot \text{ef}} \]
\[ E_{ef} = \frac{R_{ef}}{R_2} \]

\[ E_{ef} = E_{x} - \frac{R_{ef}}{R_2} \]

\[ E_{eff} = \sum_{x} k \]
\[ E_x = \frac{K_x}{s} \left[ E_{cf} - \frac{R_{cf}}{R_y} \right] + c_x(0) \]