ECE 526 (Spring 2019)

Lecture 2
Handwritten Notes
Through-fault 

Heating due to overcurrent or overloaded 

Local heating 

Vibration - magnetostriiction 

Thermal cycling 

Sources of transformer stress
phase-to-phase fault

turn-to-turn fault

Turn-turn fault

Overexcitation

Restricted Earth Fault (REF)

Other transformer protective elements
Restricted earth fault (REF)
or $0.05$ at full load condition

$v/t > 1.1$ at no load condition

$V/H_2$ protection

$\phi$ = $\phi_w$ cos(\theta) = $\phi$ sin(\theta)

$\phi = \phi_w$ cos(\theta)

Orerecition Protection
Overexcitation Protection

Relay Characteristic
Generator Limit Curve
Transformer Limit Curve on Base

Volts/Hz (%)
Overcurrent Protection

- Through-faults
- Effects cumulative
- Thermal and mechanical stresses

- Current magnitude
- Fault duration
- # of faults
Transformer through-fault capability curves

multiple of nominal current

1EE CS7.12.00