Week 10 Meeting

11/05/18
Team Leader: Ahmed
Other Team Members: Katayi,Nur, Chufu, Tam, YJ
Advisor: Dr. Ajjarapu

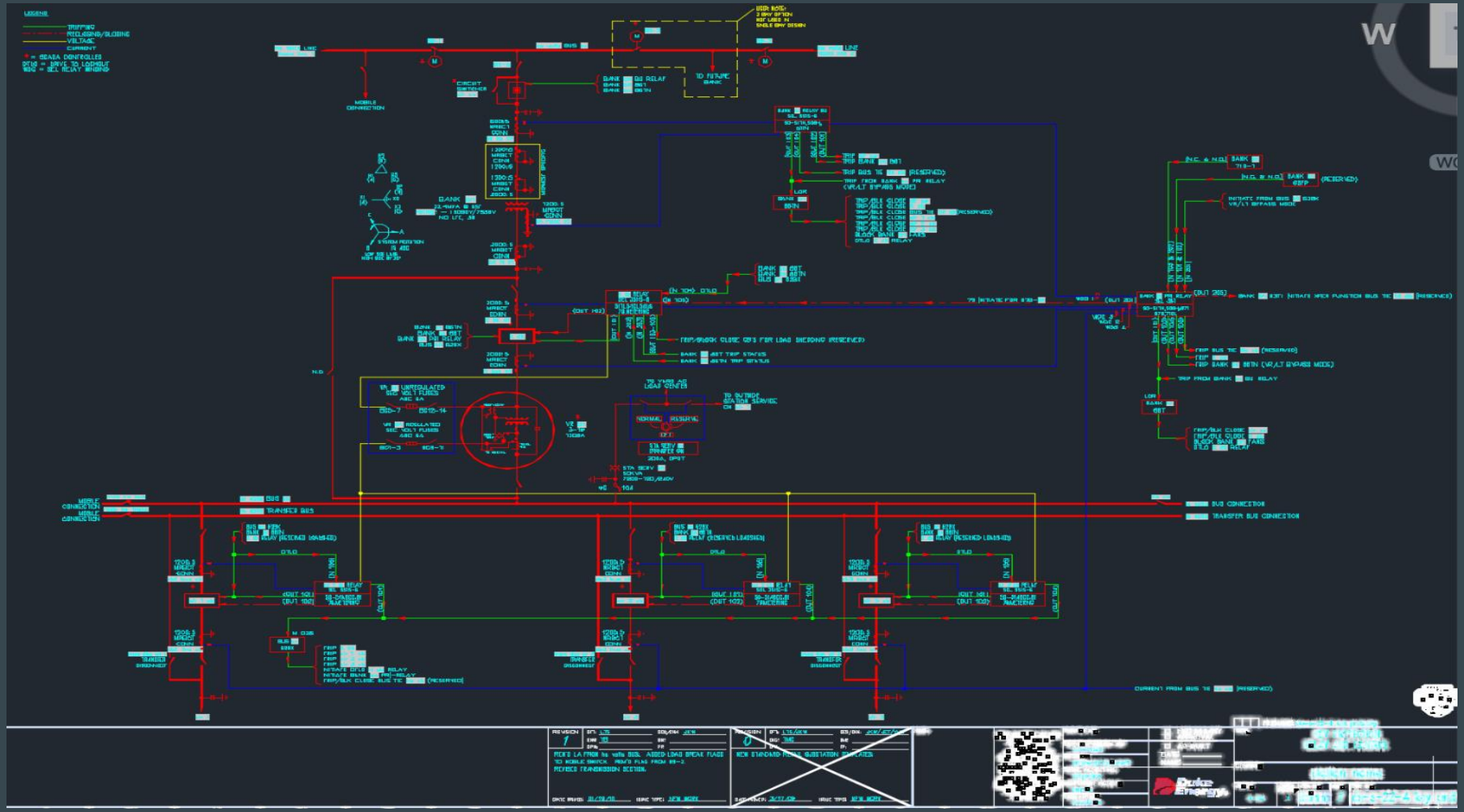
Safety Moment: Downed Power Lines

Power lines may come down as a result of windstorms, ice buildup, and motor vehicle accidents, and you cannot know whether that lines are still energized or not by looking at it. Also, all the objects that the energized line contact with are also energized. Therefore:

- Treat downed power lines and anything in contact with them as energized. Stay far away from any downed line.
- Call the power company immediately. A crew with proper training and equipment will arrive as soon as possible.
- Wait for the power company representative to confirm that it is safe to approach the scene. Only the power company can confirm that the system has been de-energized and that power will not automatically be restored.

Topics

- Key Protection Diagram with Questions
- More Questions


LEGEND
TRIPPING
RECLOSING/BLOCKING
VOLTAGE
CURRENT
* = SCADA CONTROLLED
DTUS = WAVE TO LOADBUS
WAV = SEL RELAY WAVING
TO FUTURE BANK
MOBILE CONNECTION
BUS
LINE
TRANSFER BUS
TRANSFER BUS CONNECTION
BUS CONNECTION
LOAD CENTER
TO INTRUS SEATING SERVICE
REVISION 1
REVISION 0

Key protection diagram

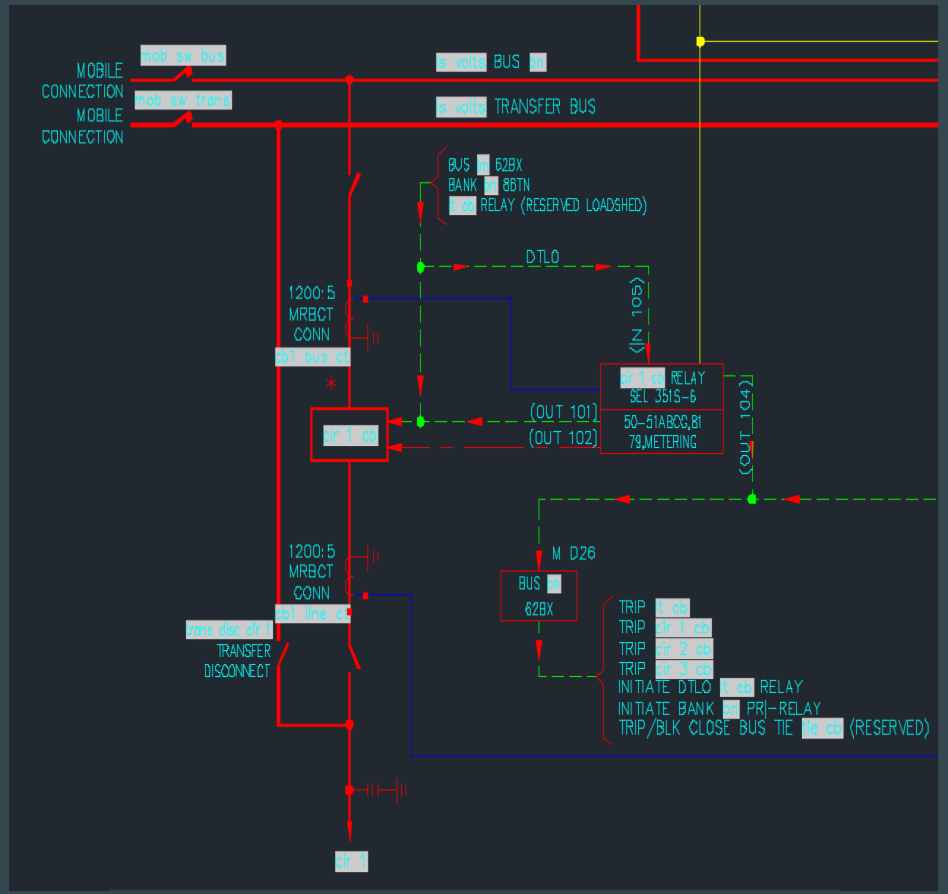
Single feeder components:

- Transfer disconnect switch
- Circuit breakers
- Protection relays

Question: How does the transfer disconnect bus work? Is it at the same voltage level as the 34.5 kV bus?

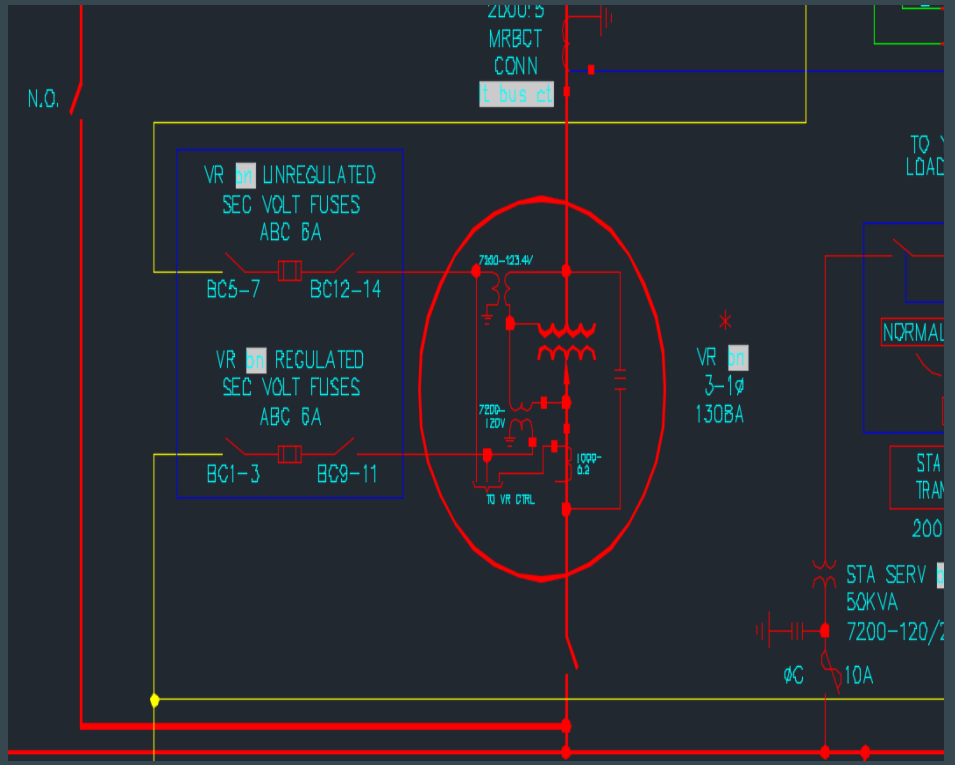
What is the mobile connection? How does it work?

Why some relays have metering and other don't?



Key protection diagram

- What is happening in the circle? What does the transformer represent?

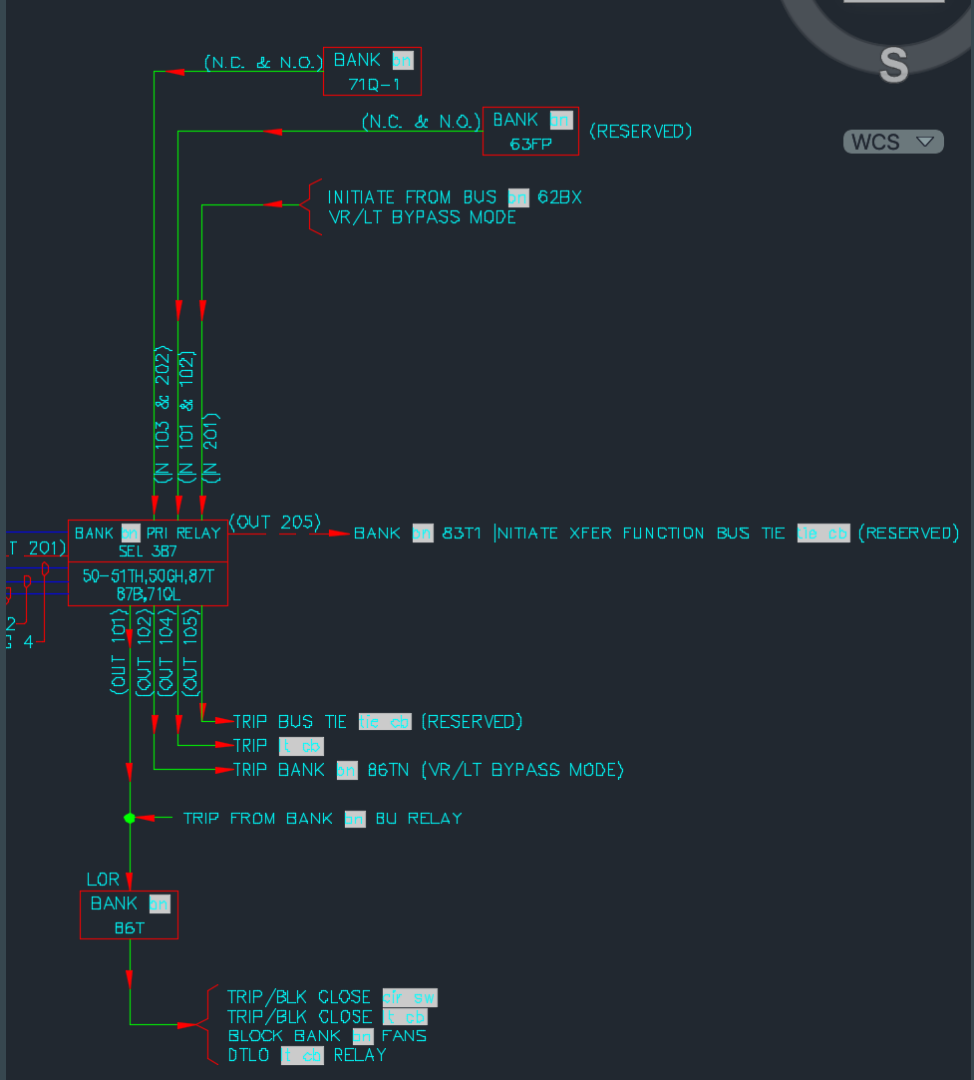


Key protection diagram

Capacitor banks:

- Set of many identical capacitor connected parallel
- Power factor correction and substation protection
- Reduction of phase difference between voltage and current.

What is a trip bank?



Questions

1. How does the transfer disconnect switch work?
2. How does the transfer disconnect bus work?
3. What is the mobile connection? How does it work?
4. What is happening in the circle? Is this the transformer that steps the voltage up to 115kV?
5. What is a trip bank?