

Meeting minutes 03/29/2021 – 31 minutes

2021 Meeting 8

1. Safety moment – remember to start signing up for vaccine appointments! New technology – HVDC transmission lines are seeing utilization transmitting renewable energy to population centers over long distances
2. Bus calculation
 - From initial look, it seems well done, Patrick needs to take an in depth look at it this week
 - Assumptions like no force calc on flexible bus and no ice force were correct
3. Grounding calculation review
 - We had some trouble getting our grounding calculation exactly perfect
 - Patrick found a couple of incorrect assumptions, mainly, n_d value was much less than our assumed value of 1
 - Our D_m value was also not quite right either, pretty easy fix for both of them though
 - We still may need to play around with spacing and grounding rods, but now all our input values are right
 - For this and the bus calculation, we need to make final polished reports to present
4. DC system calculation introduction
 - DC system and AC system are the final calculations needed for substation
 - DC calc involves all the DC loads inside the control house
 - Again, there is a lot of material for us to read through on those calculations
 - Different substation loads will have different magnitudes and time periods, need to figure out the load profile for our substation

- We should find cutsheets for SEL relays (need to make SEL account)
- Worst case fault will tell us how many breakers will be tripped and what our max dc current will be
- Lastly, we should actually find and size what DC battery we will need in our control house
- Assume CT connections to inverters will be fiber cable

5. Action Items

- Begin work on DC system calculation
- Make polished presentations for grounding and bus calculations that show what we did
- Circle back around to cable trench - Adam sent more cable info