Question	Answer
What is your suggestiosns to overcome these modeling issues of both wind (GENROU) and solar (rcc_b) ?what about wind and solar EMT models suggested in RSCAD?	Industry needs to make a concerted effort to improve existing models that may be obsolete, incorrectly parameterized, or not representative of actual installed equipment. TPs and PCs should establish requirements to ensure models are accurate and validated during the interconnection study process. And EMT models should also be required, per NERC IRPWG guidance.
Could you share your thoughts Dynamic phasor models as an alternative to the averaged EMT models?	TPs and PCs should establish requirements based on their study needs to gather models that are suitable representative of the entire plant. Current IRPWG guidance is that the AVMs are suitable for large-scale studies but more detailed models may be needed in some cases.
What are your thoughts about the representation of momentary cessation in equivalent plant models, where collector networks are not represented in details?	Current models can represent MC but fail to account for partial momentary cessation, which we have seen in multiple disturbances across multiple facilities. This is a limitation in the equivalent models that unfortunately leads to less accurate studies. Sensitivities are recommended.
What is the opinion on using first principle models (inverter branch current + controller) rather than parameterized (current controller) models?	I don't have an opinion on this. Current model techniques can represent in detail the inner control loops of the IBR, which are often required to account for things like weak grid issues, controls interactions, etc. So these models would be encouraged and/or required.
Is there an automated process to ensure most updated model info is made available during the course of development/interconnection of a Generating Resource?	For most entities, the answer is no. Should there be? Yes.
Are you planning to introduce certain standards that the model validation by OEMs need to adhere to while performing factory or hardware-in-the-loop tests?	Industry develops standards, not NERC. NERC facilitates the development of standards. Anyone can submit a Standard Authorization Request on the NERC website.
Have you considered the impacts on modeling/performance for plants that are operating below full potential output? Especially with FERC 845 plants.	The ability of a facility to operate below its maximum available power output can be modeled in all current models, and planners will need to figure out how to study uncertainty around this in the future as more IBRs operate off maximum available power.
When comparing the real time performance with the dynamic models, are these being compared with the latest models through coordination with TPs?	Not sure I fully understand the question. TPs and PCs should be reviewing real-world events, using available data, and performing some level of validation. MOD-032 allows TPs and PCs to seek model improvements if deficiencies are identified.
I have expertise in EMT modeling, how can I contribute to help with the modeling efforts?	Please reach out to Ryan Quint (ryan.quint@nerc.net). IRPWG is working on an EMT guideline currently.

DER tripping- do you think its all Loss of mains protection or some invertor control tolerance based? In these events distribution may see different angle move	I don't have good insights here. But I would guess it is inverter controls/settings/protection, based on anecdotal evidence.
are you also simulating the local frequency dip that may be happening at the same time in these events? hard to do i know, but may be relevant to performance	The discrepancies between the models and actual performance are so drastically different, that the short-lived frequency spikes would not be the culprit of these modeling issues.
Is there some standard form available between DER owners and grid owners, in order to standardize and specify the parameters needed in these shared models?	I am not familiar with DER-related topics in this area.
Are there any publicly available EMT models that we can see as an example which shows how to properly model these IBR? Any generic models?	For the purposes of BPS reliability studies, NERC IRPWG does not advocate or support the use of generic EMT models.
Is a black box EMT model from OEM sufficient for EMY studies?	The EMT models should generally include some degree of black-boxing since specific OEM controls would be embedded and intellectual property would need to be protected. Hence, most every EMT model used for BPS reliability studies should be black-boxed.
are you considering specifying an EMT model being either open and translate-able between offline and realtime analysis, or wo separate models that need to agree	Having EMT models that are interoperable across tools/platforms/study horizons/etc. would be a huge step in the right direction. We need more of that in this area.
Today, how much confidence do we have in EMT models that do not use real code? ARe there controller standards that could allow models wo requiring real code?	As long as the OEM has verified/validated and certified that their model is a reasonable representation of the actual controls, who is to say otherwise? The proof is in the validation report… We should focus on the "what" and not the "how"…
If it is as bad as you suggest what is the risk of needing a black start in the next 5 years?	Not sure I fully understand the question. TOPs and RCs are required to have blackstart plans and cranking paths at all times, ready to be called upon if needed. What is the risk of a large-scale outage? I cannot speak to that, but the discrepancies between models and actual performance are currently systemic and problematic across a large portion of the BPS. This is a concern and risk to BPS reliability.
Should inverter controls be standardized as synchronous generators do? This would made modeling and simulation easier.	I will leave this question alone, as it is controversial… :) But standardization could help ensure some degree of modeling accuracy, and I know IEEE P2800 is working to accomplish this.

What role for AI black box models driven by enhanced monitoring? Is trying to model from the inside out just futile?	I don't believe it is futile, I think we've lacked proper requirements and focus from transmission entities. We struggle as an industry to have adequate monitoring at most every IBR facility, so we are a long ways from being able to derive models using monitoring. Most facilities have 1 to 5-min data resolution and call that "fast".