

Webinar: IBR Modeling Through the Lifecycle of a Project – Reliability Perspectives

Question	Answer
Are there any specific softwares that you have seen that have a more clear/consistent IBR model that can be referenced, if not what suggestions to create a model?	All software platforms have the ability to represent IBRs in different capacities. What is important is that the modeled representation of the facility matches the installed equipment and conforms to the requirements established by the transmission planner.
Does the equipment actually undergo some form of performance testing entailing physical operation in the real world? (not just comparing models/simulations)	Equipment (e.g., inverters) typically undergo some form of factory acceptance testing or hardware-in-the-loop testing to provide "validation" that the model matches the equipment (and to test the equipment).
Is there a possibility that the generic library models will be validated using field/test results. Generic library models have limitations.	I believe this is a provision or capability established in some of the recent directives, and I believe the model validation NERC standards project is also including requirements for field testing or operational data. Consult the official documents for more details.
Are there any differences between the models for Grid-follow vs. Grid-Forming IBR's? If so what aspects?	Grid forming models are still in the relative infancy. There are currently no "standard library models" that are adequately accepted by all equipment manufacturers, although there is one model that can be used for research purposes. For now, most (and maybe all) OEMs recommend a UDM for grid forming products.
Is there a validation process in which the model's fidelity is compared against the real-world performance of the equipment through some form of type test? (much like how substation equipment is tested to ensure performance consistent with its published ratings)	See NERC standard project related to model validation (MOD-026) for more details.
Do you foresee any requirements for mfr. to provide standardized UDM's? Often we see two different & incompatible UDMs for the same gen b/t two dif customers.	I am not sure where that will go but should be discussed in much more detail in industry forums.
Ryan, what are your thoughts on: If individual IBR or plant performance should be enforced vs. some system-wide risk-based measure is more practical? Thanks.	I would say that each model and performance is the responsibility of the asset owner. That aligns with performance-based standards. Rather than a system-wide risk assessment, which does not align requirements and obligations in my opinion.
Any thoughts on the use of nonparametric black box models for planning studies?	I would need more details regarding "nonparametric". Models should reflect actual equipment, and should not be a curve fit representation of the facility for a small handful of perturbations.
How can TP achieve the holy grail of comparison between interconnection stage and as-built IBR using EMT models if FERC 2003 allows only 150 days for study?	Entities will need to adapt their processes to meet the directives of FERC Order 2023, including ensuring sufficient resourcing to conduct EMT studies where needed.

What incentives is NERC considering to promote improved IBR modeling on commercial simulators (e.g., PSSE, PSLF, PowerWorld, etc)	NERC does not "promote incentives", particularly to any specific equipment manufacturers or service providers.
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