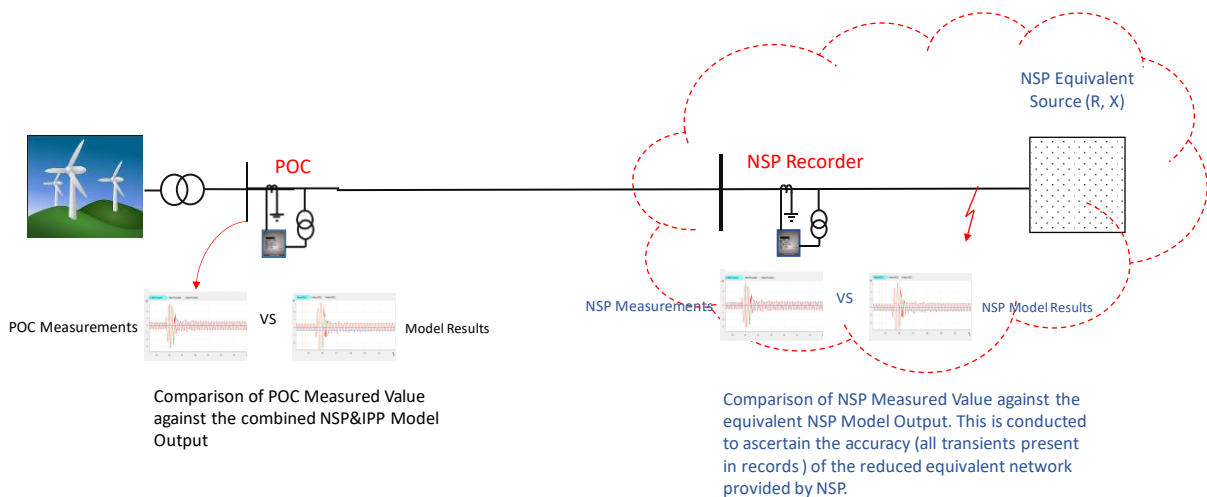


Questions 1.07 What consideration should be given to ongoing model verification as compared to validation prior to or immediately after commissioning of Wind and solar PV power plants?

Currently, we do not conduct ongoing power plant model verification.

- Model validation is required after commissioning the wind and solar PV power plants. Our validation process is quite stringent.
 - We require recorders that can sample at more than 1kHz at the point of connection. These recorders trigger for network faults, and the POC circuit breaker must not operate.
 - The small portion of the network where the fault occurred is modelled and embedded into the power plant EMT model to replay the faults.
 - A comparison of the recorded signals and simulated oscillography is made. Successful validation is confirmed when the traces match up closely within specified limits.
 - The requirement is for accurate as-built model for RMS simulations to be made available after commissioning, validated within 6 months. No validations are done during commissioning for the protection relays.

- The EMT validation setup is shown below:-



We do perform static network model validation once a year against information from disturbance recorders for specific network event to ensure that the model correctly captures the ongoing addition of power plants and their behaviour.

- The EMT data requirements and process flow for model validation is indicated below:-

