Meeting Minutes

This was the first meeting of the working group. Much of the time was spent presenting and discussing the charge and organization of the Working Group, soliciting contributors, and having a round-table discussion of what the appropriate focus and level should be, given the targeted beneficiaries of the Working Group’s efforts.

Working Group Officers:

Bruce Mork, Michigan Tech Univ, is the chair of the WG. Volunteers are being sought for co-chair and secretary.

Potential Contributors - suggested and volunteering:

- Reigh Walling, GE
- David Jacobsen, Manitoba Hydro
- Atef Morched
- Roger Dugan
- EDF
- ABB
- Others?

Discussion:

Going around the table, there were many useful suggestions made as to the scope of the topics, level to present them at, etc. Summarizing:

♦ Focus on practical issues in power companies.
♦ Suggested operational procedures and constraints would be very useful.
♦ Targeted reader/recipient: BSEE power engineer who has practical understanding of power system, knowledgeable about phasor calculations (like fault studies and loadflow) but is maybe not so knowledgeable about time-domain simulations and nonlinearities.
♦ Parameter sensitivities vs. responses.
♦ Concern that EMTP-like programs “not easy enough” to use for ferroresonance “prediction.”
♦ Piecewise linear vs. continuous λ-i characteristic.
♦ Establish clear boundary/guideline between practical approach and need for more advanced help.
♦ Advice on parameters to change/investigate with respect to sensitivities.
♦ Hysteresis in ferroresonant behaviors - “turn-on” vs. “turn off” vs. risks involved.
♦ Back-feed, safety, arresters.
♦ 3-phase switching vs. phase-by-phase. What is danger of failure/explosion. Can it be single-phased for a short time?
Waveform pictures - educate them on waveforms, subharmonics, chaos.
Transformer connections that are most and least prone.
Key: Convey insights to operators. Catalog the scenarios (system configuration and switching sequence) identify participant L-C elements.
Working Group presentation? Invited informal presentations for next meeting.
It would be nice to document some known failures, include in paper.

January meeting objectives:

- Begin developing Reference List
- Informal presentation of scenarios for FR. Possible presenters:
  - Bruce Mork - FR intro, background
  - Atef Morched - Case study, failure documentation
  - Dan Durback ?
  - David Jacobson - scenarios for FR
- Agree on focus and level of material to be presented.
- Discuss possible panel for near future.
- Discuss papers, special publication