

Unapproved Minutes from WPM 2002
Distributed Generation Integration Working Group

To: Distributed Resources Integration Working Group

CC: Reigh Walling, Charles Perry

From: Phil Barker

Date: January 30, 2002

Re: Minutes of the Working Group on Distributed Resources Integration from the Summer 2001 Power Meeting in Vancouver, BC.

The second meeting of the working group was held on January 29, 2002 at the Winter Power Meeting in New York City. The group is chaired by Reigh Walling (reigh.walling@ps.ge.com). There were 31 attendees that signed the attendance sheet.

The following activities occurred:

1. Meeting minutes from the previous WG meeting were approved
2. Ray provided an update of P1514 status and other IEEE WG activities related to DG
3. Reigh discussed the potential for having a Task Force on DR impacts on power delivery infrastructure. The Task Force would prepare an unbiased report documenting the potential value (positive or negative) of DR for deferring T&D infrastructure. Report could be useful for FERC and other regulators in evaluating DR policies. No one volunteered to lead the task force but there was much interest so this item will be considered again at the next meeting (Chicago).
4. The group is putting together a panel session on “Impacts of DG on Power Delivery” for Chicago.

Topics and panelists include:

Voltage Regulation Impacts (Ljubomir Kojovic)
Dynamics Interactions of DG with Power system (Reigh Walling)
Overvoltage Issues – (Tom Short or Phil Barker)
Protection Impacts with Case Studies (Mike Dolye)

Panelist need to get abstracts in by Feb 12th and final papers (2-6 pages) by early March (see IEEE PES Website for details of format and deadlines.)

5. The major item of discussion for the meeting was the list of items that would go into the “laundry list paper.” Here are the sections and key people assigned:

Voltage Issues (Ljubomir Kojovic)

Voltage regulation + VAR management
Voltage Regulator + Control Interaction

- i. Reverse Power sensing
- ii. Fooling the LDC
- iii. Cycling (hunting) or regulator due to DG

Capacitor Control DG Interactions

- iv. Time
- v. Temp
- vi. VAR
- vii. Voltage
- viii. Current

Voltage Rise/Drop
DG Regulation Modes
Post Fault Voltage
Voltage Balance
Cycling (hunting) type interactions
LTC Control

Protection Issues (Roger Dugan)

Fuse Coordination
Feeding fault (I^2t) after utility protection (recloser, breaker, etc.) opens
Impact of DR on interrupting ratings of devices
Fuse, breaker, sectionalizer and recloser
Faults on adjacent feeder – nuisance or sympathetic tripping
Fault current level
Fault detection – relay desensitizing
Ground source impacts
1 phase interruption on 3 phase line – loss of phase 1 or 2 phases
Recloser coordination
Conductor Burndown

Networks (Dave Smith)

Adjacent feeder fault causing network protector (NP) trip.
NP cycling
NP rating for DG interruption
Power flow reversal due to load drops
Loading Levels

Safety and Overvoltage (Reigh Walling)

Grounding
Self excitation
Out of Step Reclose

Operation and Restoration (Jim Burke)

Cold Load pickup

- Feeder Load Pickup without DG
- Hot line versus dead line work
- Special practices
- Feeder reconfiguration incompatibility with DR
- Remote trip
- Islanding (intentional and unintentional)

Power Quality (Nick Miller)

- Harmonics
- Inverters
- Pitch of winding (rotating machines)
- Flicker
- Reciprocating engine misfiring
- Synchronization
- Wind/PV flicker
- Mitigation

Dynamics (Nick Miller)

- Voltage stability
- Transient Stability
- Damping
- Large System

Communication (Farroh Albuyeh)

- IT and communication infrastructure
- Monitoring

Volunteers for the laundry list should get their contributions submitted to Reigh 1 month prior to the meeting in Chicago.

6. Other activities:

Two presentations were given –

Nick Miller GE gave a presentation on the “Impact of DR on System Dynamic Performance”

- this presentation showed that the impacts of a large area voltage disturbance on the bulk transmission system could trip DG over a wide area. The implication being that as penetration levels increase for DG that the DG response to such disturbances could exacerbate voltage sags and lead to instabilities. Trip settings and control of DG for high penetration scenarios will need to take into account the bulk system needs.

Marek Wacławski, United Illuminating “Results of Microturbine Interconnection Testing”

- this presentation discussed the utility system interconnection of three 30-kW microturbines connected in parallel at a single customer site – issues and concerns that arose during testing of the anti-islanding tripping response of the systems were discussed.

Informal Poll of WG Members

Larry Morgan took an informal poll to find out if the WG members felt that DG interconnection issues are “tariff” related or “technical.” The vast majority felt that they were technical issues.

Next Meeting will be held at the Summer Power Meeting in Chicago. We will attempt to schedule the same time slot and duration.

Meeting Adjourned at 3:00 PM