Charlie Williams, Chair
Jim Bouford, Vice Chair
Russ Ehrlich, Secretary

Attendance list passed around. (28 persons in attendance)

Why a working group on Stray Voltage……

- No standard guide
- No terminology consistency
- No definitions
- No guidelines
- No measurement device specifics
- Many studies going on (NEETRAC, EPRI)
- EEI asked for a standard @ Denver Meeting (need to find out what the charge is)
- No IEEE document/standard

Video Presentation (Inside Edition)

Jim Bouford gave the group and update regarding the Mass. & NY commissions

- Requirements of an every 5 year check by the utilities to take a voltage reading at every possible contact point, except meter pans, by Nov. 1
    - Estimated cost $20 million, measurements only (one utility cost only)
    - Not allowed to pass the costs on
    - Set range of 8V, below move on, above requires repair within 24 hrs.
        - Can't leave a potentially dangerous situation
        - Can disconnect to remedy the problem
        - Needs to be made safe
        - Fluke w/2K resistor

Chuck to comment on status of dairy business, still an ongoing issue.

- Wisconsin has some regulations on the books @ animal contact points
    - 500 Ohm, shunt resistor
    - Utility contribution limited to ½ Volt, 1 mill-amp
- Cases to state supreme court

Jim Burke, distribution working group, does not address stray voltage.

Progress Energy has 9 mitigating reactors on their system

- Progress purchased one pool
- 7 less than 1000' of a substation

Neutral to Earth voltage becoming more prevalent an issue. Pools, showers, spas

- Fiberglass pools w/lack of equipotential bonding
    - Water and neutral potential

NEC 2005 Article 680, covers equipotential plane between water & deck.

Jim Bouford, recommends starting on a guide, not how to perform a study.
Charlie, a guide on Neutral to Earth voltage, deals only with pieces of equipment bonded and connected to earth.

Scope: To Address a Neutral to Earth Voltage, contact voltage(s) are outside the scope of this work.

Possible working group paper on contact voltages

Discussions on what should be addressed

Different voltage levels (perceptive, aggravation, danger levels 50V NEC/NESC defined)
Sources (N to Earth, perceived acceptable, aggravation, keep below danger levels)
Causes/reasons & how to address
What resistance to use (500 ohm, 1 K,….)

Should we have a section on current levels

- How do you measure
- What equipment to use
- Need to consolidate

Navy study and IEEE working group working on pacemaker voltages…let go current levels.

Do we need a sub-group to handle contact voltage issues?

Definitions to go into the dictionary

- Neutral to Earth (Stray Voltage)
- Contact Voltage (Touching an energized)
- Induced voltages
- Equipment to Earth
- Ground Fault voltage

Use the term hazardous voltages.

Working group paper, panel session planned for T & D in New Orleans…..7 papers to be presented.

Georges Simard, his group is financing two projects

Test & Identify, Load & No load test, identify source, mitigation…..

Charlie Williams provided a presentation. (IEEE 80 reference for current levels)

Discussions followed Charlie's presentation on is this the best way to present this case……this is not stray voltage.

John Kennedy, Georgia Power Co,

Don't give the wrong impression to the regulators/lawyers/media

In Wisconsin it's called animal contact voltage.

USDA Red Book, Vermont, Wisconsin definitions of Stray voltage.

NESC has wording talking about excessive Neutral to Earth voltge….who decides what is excessive.

List of draft definitions, scope and send out an e-mail for comment

Task force for definitions (Jim Boouford, Jim Burke, Frank, Chuck, Chris Mullins) Include references

Who will be in New Orleans…….possible Web Ex/net prior to meeting in New Orleans.

Charlie to put together stray voltage questionnaire to send out to membership

Seven papers out to membership prior to meeting.