

Minutes from WPM 1999

To: Working Group on System Design
CC: Dan Ward, Gene Baker
From: Cheri Warren
Date: February 21, 2001
Re: Minutes from the Working Group on System Design from the 1999 Winter Power Meeting in NYC

The meeting began at 8 am with the approval of the old minutes. There were 27 people in attendance throughout the meeting.

New Business items:

1. The TF groups meet concurrently with the WG on System Design as outlined below. Please list them in the program as TF as well as WG on System Design and schedule them in the same room.
 - a) TF on Reliability Indices from 8 to 9 - Chair Cheri Warren
 - b) TF on Reporting Practices from 9 to 10 - Chair Dan Pearson
 - c) TF on the Application and Creation of PQ Indices from 10 to 11 - Chair Mike Sheehan
 - d) WG on System Design

TF for Reliability Indices P1366 - Chair Cheri Warren PTI

The Trial Use Guide passed the RevCom review and was made an official standard in March 1999. Charles Heising showed up at the meeting and is still concerned about the standard. He would like the group to consider adding stronger wording about the use of this standard for distribution systems and not industrial systems.

This guide is a Trial Use Guide, which means that the group has two years to update and reissue as a full standard. The full standard allows the group a five year window to make changes. The group will update the guide during the next two years. They will add a section on designs for reliability. Greg Welch, Cheri Warren, Charlie Williams, and Rich Brown will work on the new portion.

Joe Crozier from SRP wrote to the group asking us to consider cost based indices. The group discussed it and decided that cost based indices are out of our scope.

Roy Billinton wrote to the group regarding the use of MAIFI. He asked the group to consider changing MAIFI to SAIFI_M in order to follow the naming convention.

PGE is interested in adding an index that tracks sustained interruptions per mile. The California commission is pushing this idea.

Rich Christie volunteered to help with the survey paper.

Presentations

1. Mike Sheehan discussed the round table meeting that is scheduled for Thursday February 4 from 8 to 12: Where does reliability end and PQ start? Many groups will meet at this time to decide where his TF belongs. Larry Conrad will speak on ANSI C84.1, someone on the Gold Book, Jim Burke on P1250, Mike Ingram on Transmission, and Mike Sheehan on P1366.

Task Force on Reporting Practices - Chair Dan Pearson PGE

Dan gave a presentation about the issues he wants to address with the TF. See attached presentation. The purpose of this work is to help quantify the way companies are recording their data so that comparison can be more easily accomplished. The group agreed that most of the differences in reliability indices which are seen between companies is due to the definitions of an interruption, major event, planned interruptions, and step-restoration efforts.

Dan also prepared a survey, which the group reviewed and made minor changes. Dan and Cheri will issue the survey to the same group as was used for the distribution reliability measurement practices survey work. Based on the survey, Dan and Greg Welch will prepare a transactions paper by the SPM 1998 for the group to review. The expectation is to submit for WPM 1999. After the paper is complete, the group will decide if we need to pursue a more permanent document for the information. We are considering an appendix to P1366, an application guide, or a recommended practice.

Some interesting comments which were made during the TF meeting:

- ~~California PUC is allowing no more than 12 interruptions per customer per year.~~ The California PUC is requiring utilities to report instances when any customer has experienced more than 12 interruptions in a year. The reporting is done on a feeder basis.
- In California, the utilities are required to break out events that were caused on the transmission from events that were caused on the distribution system for reporting to the PUC. They still report every thing to the customers.
- Oregon PUC had Oregon utilities define the definitions and found that within the state they were comparing apples to grapefruit. The PUC took a stab at defining the definitions and now they are comparing apples to oranges - so things are improving but aren't perfect.

TF on the Creation and Application of PQ Indices - Chair Mike Sheehan PSE

This TF was created at the WPM 1997. Mike outlined his ideas for this task force. We would like to use the work, which has been done in P1159.1, P1159.2, P1346, ITIC, and P1433 in defining sags. Based on that work, the group would like to define the methodology for calculating voltage sag indices. It seems a natural extension to the Reliability Indices definition. The goal of the group is to define how a customer is affected by sags and to find a way to present the information to the customer in a simple, easy-to-understand method. In essence, it is to set up methodology, NOT to define required levels of service.

Marek Waclawiak from United Illuminating gave a presentation on the way he is using the PQ Indices that were developed by EPRI. See attached. The group discussed using the work that has been done

by EPRI as a start point. Marek showed why he needs a system wide SARFI as well as a customer based SARFI. Some members of the group showed some discomfort with the concept of a system wide SARFI, but others thought it was a good idea.

Mike summarized the areas of interest:

1. ISO - what level of sags should the distribution companies accept?
2. Are home offices becoming an issue in the sag arena?
3. How should AMR's be set to capture meaningful data?
4. Simulations can be used as well as monitors to collect the data
5. To help define sag issues for manufacturers.

Mike will put together a survey instrument for SPM 1998 to try to find out what the industry is doing today with regard to PQ Indices and sag definition for the customers. Based on this survey a transactions paper will be prepared. A par will be formulated by SPM 1998. Mike will chair a panel session at WPM 1998 and will look for speakers from SCE, Detroit Edison, SDG&E, Con Ed, and maybe Texas Utilites.

Round Table of System Design Issues

Yampa Valley Electric Association is starting to use arresters on distribution. They have no sheilded overhead lines. They add arresters when they replace poles.

NMPC uses arresters to improve distribution system performance. They are applying them four to a mile on the top span.

NSP uses arresters every other pole on the top span for 35 kV. It has significantly improved performance.

PSE is refurbishing switches which are 30+ years old. They talked to line personnel to see how they do switching after two people were injured during switching. They found that there are many Mark 1-3's on the system and that personnel needed to be retrained on how to do switching for these old units. After reviewing the situation, they found that the whole switches really needed replacing, but in these days of low/no budgets this is difficult.

FPC is using faulted circuit indicators with cellemetry. They are working well. They are also participating in trial use of fault distance indicators for single phase URD systems. The unit is made by Remote Monitoring Inc.

FPC converted all their arresters to under-oil arresters two years ago. On the overhead system, they saw a 50-90% reduction in failures over the two year period. They found lead lengths to be the biggest issue with failure.