



PLANNED DISCUSSION ITEMS FOR THE CALGARY CLIENT COMMITTEES

Be prepared to discuss the following items at the upcoming Client Committee Meetings in Calgary. Your input on these topics benefits the Doble Client Community and will encourage the sharing of information. Active participation is a key element of these closed door meetings. Free exchange of ideas is encouraged because manufacturers are not in attendance at these meetings. To provide additional topic ideas go to: <http://www.doble.com/topics/>

The following topics have already been submitted for discussion at the Calgary event.

Arresters, Capacitors, Cables & Accessories (ACCA)

Voltage Ratings for Metal Oxide Surge Arresters

Do your metal oxide surge arresters have the proper MCOV ratings?

Discussion of ABB XPS Surge Arresters

Do you have these arresters on your company's system?

Replacement of Silicon Carbide Surge Arresters

Does your company have a policy to remove the silicon carbide type arresters? Is the replacement based on age or test results?

Testing of High Voltage Power Cables

What is your company's program for testing high voltage power cables?

Failure Modes of Cable Terminations

Has your company experienced cable termination failures recently? How did they fail?

Asset & Maintenance Management (AMM)

Loss of Intellectual Capital

How are companies dealing with the issue of the shrinking pool of intellectual capital in the utility industry?

Efficiencies of Work Management

Is your work management tool affecting the efficient completion and monitoring of maintenance tasks?

Economic Climate

How is the economy affecting your utility?

Life Cycle Costing

How does your company calculate the cost of apparatus for its complete life cycle?

NERC/FERC Influence on Maintenance & Testing

How is the NERC/FERC involvement continuing to change maintenance and testing philosophies?

Bushings, Insulators and Instrument Transformers (BIIT)

Hot Spot on a 345kV Switch Base Insulator

The "hot spot" is uniform, 360° around the top few skirts of the insulator. The insulator did not fail, but the utility has taken it out of service. There is no visual evidence of contaminants or micro cracks on the porcelain. This poses the following questions:

- 1) Would your utility be concerned with a 6°C thermal rise on the insulator?
- 2) Would your company consider this acceptable or normal?
- 3) What is your critical temperature guideline for insulators during infrared scanning?
- 4) What additional testing would you recommend?

Failures of High Voltage Current Transformers

Recently there have been a number of reported failures of high voltage current transformers. A discussion of the failures will be discussed, the investigation and what utilities are doing to prevent additional failures.

Seismic Testing of Bushings

How is your company specifically covering the requirements added in the 2005 revision of IEEE-693?

Testing of GE Type A Bushings without a Test Tap

Circuit Breakers (CB)

First Trip Testing

A presentation from Doble on first trip testing and its advantages will be given.

SF6 Testing and Handling

The results of a technical questionnaire on this subject will be discussed.

Circuit Breaker Low SF6 Pressure - Best Practice Debate

What to do for low SF6 pressure – Trip or Not to Trip?

ABB R Magnetic Type Operating Mechanisms

Discussion of client experiences with this mechanism and the modifications being made to this mechanism by ABB.

Insulating Materials (IM)

Canadian PCB Regulations

With the significant changes that have just occurred in the governmental regulations concerning PCBs, how has this impacted your daily processes concerning sampling, oil processing and handling?

Canadian Oil Specifications

The new Canadian oil specifications have produced multiple classes of oil as opposed to the old Canadian specification, Doble TOPS, ASTM D 3487 and the IEC 60296. Has this been of benefit or has it made it more difficult to find multiple vendors for a specific product class, especially for oils used in very cold environments?

Cable Oil Monitoring

Recently there was a question concerning oil filled cable on the AskDoble maintenance forum. This topic will discuss oil filled cables in more detail including how often sampling is performed, at what locations, DGA analysis and the use of dissolved gas-in-oil on-line sensors.

In-service use of Cooper Envirotemp FR3 and ABB BIOTEMP Filled Transformers

Some of these transformers have been in use for about 10 years now. Do anyone have experiences where problems have been encountered with the use of these types of insulating liquids? Specifically, at higher operating temperatures and situations where gaskets have been compromised and leaks have developed, has anyone noticed oil polymerization occurring or an increase in viscosity of the liquid? Also has there been any experience of more acetylene production in these types of transformers as compared to mineral or silicone filled units?

Protection, Automation, Controls & Communications (PACC)

NERC Standard Update

A discussion will be held on the new NERC standard that is being drafted. This standard pertains to maintenance of protection assets.

Arc Flash Protection

Various methods of protecting against injuries related to arc flash will be discussed. One of the new methods is by using relays that operate with optic sensors. We will have a manufacturer talk about this type of relay.

Fiber Optics

Fiber optics is an extremely important element in protection. Some application tips and selection process will be discussed.

New CIPS Standard

Utilities have to abide by new cyber security standards that are being enforced vigorously. A discussion on how the utilities are implementing the security issues will be addressed.

Rotating Machinery (RM)

High Levels of Partial Discharge in New Motors

We have received reports of some Clients measuring high levels of partial discharge in new motors rated 6.6 kV and higher.

Problems with Isolated-Phase Bus

Doble Global Power Services has detected numerous problems in isolated-phase bus. In most cases, this bus was less than 10 years old.

Foreign Material Exclusions (FME)

We have received a higher number of reports about material being left in a machine after repair work.

Generator Upgrades

New or revised generator purchase specification. "Green Power" upgrade on a generator (and its prime mover).

Transformers (TX)

High Voltage versus Low Voltage Transformer Turns Ratio Tests

The transformer turns ratio (TTR) tests performed at high and low voltages have their strengths and weaknesses to detect problems. Examples will be shown that explain why the TTR test should be performed at several voltages to detect problems.

Tests Performed after a Transformer Trip

What tests are performed on a transformer after it has tripped out of service? What information is reviewed to determine why the transformer tripped? This discussion may evolve into a technical questionnaire to obtain feedback from a larger group of maintenance engineers.

Swept Frequency Response Analysis Experiences

Swept Frequency Response Analysis continues to be an active test technique that finds problems. New case studies will be discussed at the upcoming meeting