

**Protection System Workshop
for Field Personnel **Aug. 16-17, 2016****

The ReliabilityFirst Reliability Assessment and Performance Analysis (RAPA) group is sponsoring another protection system educational workshop for substation field personnel on **August 16 and 17, 2016 at our office in Cleveland, OH**. This workshop will **focus on protection system commissioning and testing** related to the top causes of protection system misoperations as identified by NERC, which are communications systems, settings related errors, and protection system equipment failure plus unknown causes.

The workshop agenda and logistics are shown below. Should you have any questions, they may be directed to either John Idzior or Jeff Mitchell of our staff. There will **no fee** to attend the training and it will be **open to neighboring Regional Entity staff and members**, too.

Intended Audience



- **Substation Supervisors**
- **Substation Electricians**
- **Substation Field Engineers**
- **Relay Technicians**
- **Relay Engineers and Others Who Work Directly with This Equipment**
- **Company Trainers on This Subject**
- **(This is not a compliance related event)**

DRAFT AGENDA

DAY 1 – August 16

1. **Registration** and continental breakfast provided *[7:30 – 8:00 a.m.]*
2. Welcome and introductions – Jeff Mitchell *[8:00 a.m.]*
3. **Why are we here? Protection System Misoperation Metrics** *[8:10 a.m.]*
4. **Using Relay Event Analysis** – Schweitzer Engineering Laboratories (SEL) *[8:30 a.m.]*
5. Break *[10:00-10:30 a.m.]*
6. **Test the System, Not the Element** – Omicron *[10:30 a.m.]*
7. Lunch provided *[noon-1:00 p.m.]*
8. **Untying the ‘Nots’ of Non-stop Change** – Patti Hathaway, The Change Agent *[1:00 p.m.]*
9. Break *[3:00-3:30 p.m.]*
10. **Technical Presentation** – Vendor 3 *[3:30 p.m.]*
11. **First Day Wrap-up** – Jeff Mitchell *[4:45 p.m.]*
12. Reception with refreshments and appetizers (& vendor displays) *[5:00 – 6:30 p.m.]*

Protection System Workshop for Field Personnel

August 16-17, 2016

DAY 2 – August 17

13. Continental breakfast provided [7:30 – 8:00 a.m.]
14. **Lessons Learned, Successes, Near-Miss Stories Shared** – 15 minutes each [8:00 a.m.]
- Commissioning Success Story - [volunteer needed]
 - Lesson Learned by a utility [volunteer needed]
 - Near-Miss Success Story by a utility [volunteer needed]
 - Other interesting topic-related stories - *Rich Quest, MRO TENTATIVE*
15. **Group Breakout/Discussions** – Facilitated by Jake Mazulewicz, Ph.D. [9:00 a.m.]
Topics for discussion:
1. Use of contractors
 2. Field familiarity with new relays and test processes
 3. How to handle field revisions
 4. How to trip test a composite protection scheme
16. Break [10:00-10:30 a.m.]
17. **Report Out from Group Discussions** – Dr. Jake & group leaders (15 min. ea.) [10:30 a.m.]
18. **Round table discussion of any other topics and debrief** [11:30 a.m.-noon]
19. Lunch provided [noon-1:00 p.m.]
20. After Action Review with 3-5 Volunteers from the Audience [1:00 – 2:00 p.m.]
21. Vendor Demonstrations [noon - 4:00 p.m.]
- Schweitzer Engineering Laboratories (SEL)
 - Omicron
 - Possible Vendor #3

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August 16-17, 2016

Untying the 'Nots' of Non-stop Change – Patti Hathaway, the Change Agent. **Your Input is KEY!** Nonstop change is now the workplace norm. According to a recent global survey, 82% of companies had undergone significant reorganizations in the previous year, and only 21% say those efforts were a success. Employees struggle to deal with the enormous amount of change they face and most feel out of control and stumped by the daily uncertainty. At our upcoming workshop, we have invited Certified Professional Speaker and best-selling author, Patti Hathaway, to speak to us on how we can deal more effectively with all these changes. **Please respond to these questions by August 1:** <https://www.surveymonkey.com/r/ReliabilityChg>.

Technical topics – related to protection system commissioning and testing:

- **Schweitzer Engineering Laboratories (SEL)** – John Liddy, P.E., from SEL will show how relay event analysis has been used predominately to investigate a power system interruption and assists in determining: root cause, corrective actions, and identify risks. Sometimes these activities identify a need for system-wide changes. Today relay event analysis can be used to help catch some of these issues prior to a system disturbance and minimize having to make system-wide changes. Relay event analysis can be used during commissioning to check for correct installation, proper operation of protection schemes, and verify individual protection functions. Using relay event analysis during commissioning reduces complicated schemes to analyzing protection logic and these events can then be saved as commissioning data.
- **Omicron** – Will Knappek will present the paper, *Test the System, Not the Element*. Explore the shift in traditional relay testing to a more complete system test. Test the logic of the relay, not the capability of the microprocessor to perform math. As the technology for protecting the power systems as evolved, the process of testing the protection must also evolve. The protection devices that are in service are moving away from electromechanical devices to intelligent electronic devices the methods of testing need to be updated. No longer is it applicable to test the capability of the modern relay to perform the mathematics of calculating the proper timing of an overcurrent element or the proper impedance characteristic in a distance element. This presentation will explore the testing practice of system testing and learn how to apply them.
- Possible third topic to be determined

Group breakout discussions – Jake Mazulewicz, Ph.D., will facilitate this session and will break the audience up into small groups to focus on each of the topics listed in the agenda above. Afterward, each group's leader will report out the discussions of the small groups.

Round table discussion of any other topics – this session will focus on the audience for input and comments on the topics and subject matter in general and to share any other information they may have. There will also be a feedback survey included.

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Participation will be limited to the first 100 people to register through the Eventbrite link. There will be a waiting list available if the maximum number is reached prior to the workshop. [link to Eventbrite for registration](#)

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Some speakers may be able to grant CEU/PDHs for its portion of the training. Unfortunately, RF cannot grant CEU/PDHs for the entire workshop.

We look forward to hosting you at our office!

June 2016