Protection System Workshop for Technical Personnel
August 15-16, 2017

The ReliabilityFirst Reliability Assessment and Performance Analysis (RAPA) group is sponsoring its third annual protection system educational workshop for technical personnel and others that may be interested on August 15-16, 2017 at our office in Cleveland, OH. This workshop will **focus on Human Performance in Protection System Design.** This is a highly interactive workshop with the attendees providing ideas, suggestions, and stories for the benefit of everyone. There will also be vendor presentations and displays available both days.

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 this workshop and it is open to neighboring Regional Entity staff, members, and others.

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**

(Note: This is not a compliance related event)

Participation will be limited to the first 80 people to register through the Eventbrite link. There will be a waiting list available if the maximum number is reached prior to the workshop.

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 have an RF rate for hotel rooms at the Embassy Suites by Hilton – Cleveland Rockside ($124 per night) and the Crowne Plaza Cleveland South – Independence ($99 per night, located across the parking lot from our office), plus there are numerous other hotel brands in the area. The file below contains information for our office location and local restaurants.

RF Hotel & Office Logistics

Cleveland-Hopkins airport is about a 15-minute drive away from our office and most hotels in the area have complimentary shuttle service. The Akron-Canton airport is about a 45-minute drive south on I-77.

Breakfast and lunch will be provided both days, along with a reception at the end of the first day that includes appetizers and beverages. We look forward to hosting you at our office!

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DRAFT AGENDA (subject to change)

DAY 1 – August 15

1. Registration and full breakfast provided (vendor display setup) *[7:30 – 8:30 a.m.]*
2. Welcome and introductions **–** Jeff Mitchell *[8:30 a.m.]*
3. **Why are we here? – Protection System Misoperation Metrics and Such** *[8:45 a.m.]*
4. **Human Performance Handbook –** Jake Mazulewicz, PhD *[9:10 a.m.]*
5. Break (and vendor displays) *[20 minutes]*
6. **Human Performance in Protection System Design** – Mike Carden *[10:15 a.m.]*
7. **Phoenix Contact Design Modifications** – Allen Sappe *[11:05 a.m.]*
8. Lunch (and vendor displays) *[noon-1:00 p.m.]*
9. **How to Minimize Errors by Building Template Files** –
   Terry Smith, GE Energy Connections *[1:00 p.m.]*
10. **Group Breakout/Discussions** – Facilitated by Jeff Mitchell *[2:00 p.m.]*
    Suggested topics for discussion, consider human performance in the following:
    1. Protection scheme design, including settings
    2. Relay panel design and constructability
    3. Clearance issues within the station and control house
    4. Other areas determined at the workshop
11. Break (and vendor displays) *[20 minutes]*
12. **Report Out from Group Discussions** – each group leader (15 min. ea.) *[3:45 p.m.]*
13. **First Day Wrap-up –** Jeff Mitchell *[4:45 p.m.]*
14. Reception with refreshments and appetizers (and vendor displays) *[5:00 – 6:30 p.m.]*

DAY 2 – August 16

15. Full breakfast provided (and vendor displays) *[7:30 – 8:00 a.m.]*
16. **Are YOU Hearing Voices? - The Human Performance Connection –** Monika Bay, BGE
    - *[8:00 a.m.]*
17. **Lessons Learned, Successes, Near-Miss Stories Shared** – 20 minutes each *[9:15 a.m.]*
    - Success Story by a utility – *Tagging Relay Panels – Duke*
      – HP Tool Bag & Standard Panel Labeling - AEP

- Lesson Learned by a utility – *Use of Sliding Links - FirstEnergy*
- Near-Miss Success Story by a utility *[volunteer needed]*
- Other interesting topic-related stories - attendees

18. Break *[20 minutes]*

19. Human Performance Improvement at Schweitzer Engineering Laboratories – SEL representative *[10:15 a.m.]*

20. Round table discussion of any other topics and debrief *[11:55 a.m.-noon]*

21. Lunch provided *[noon-1:00 p.m.]*

22. After Action Review with 3-5 Volunteers from the Audience *[12:30 - 1:00 p.m.]*

23. Vendor tables will be displayed throughout the workshop and may have demonstrations after lunch

- Schweitzer Engineering Laboratories (SEL)
- General Electric (GE)
- Phoenix Contact

ADDITONAL INFORMATION

Human Performance Improvement Handbook – Jake Mazulewicz, Ph. D. will discuss aspects of design in human performance techniques. Topics include:

- The car Brake Pedal Interlock story (unintended vehicle acceleration) and how it led to a game-changing process improvement.
- How Human Performance Improvement programs based entirely on Individual Defenses tend to fail.
- How Human Performance Improvement cultures that include Process Improvement and Building Resilience are usually much more effective.
- Real world examples of Defensive Design, Fail Safes, and Resilience from the Human Performance Improvement Handbook (this pocket size handbook will be given to all attendees).

How to Minimize Errors by Building Template Files - Terry Smith, GE Energy Connections

Settings files often change custody several times in the process of design of the IED. For example a P&C Engineer might be responsible for logic, a communications engineer responsible for communications, a protective engineer responsible for protective settings, and a testing engineer who is responsible for placing the settings onto the IED and commissioning it. Errors could happen at any point along the chain of custody. This presentation will explore a mechanism for creating a template settings file that locks access to the settings areas that are un-needed by the next person in the custody chain. Additionally it allows the user to lock and remove un-used settings once a tested template file is built.

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June 2017
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