Compliance Training versus Operator Development Programs

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Non-compliance with the North American Electric Reliability Corporation (NERC) standards can be serious, costly and often result in an impact to an organization’s operator-training program. Fines for compliance violations can range from a few thousand to several million dollars depending on the severity of the violations and the risks posed to the reliability of the bulk electric system. The largest settlement to date, in addition to a multimillion dollar fine, included NERC instructions that the utility set aside several million dollars for enhancing its training and compliance program. Specifically, this investment was to be earmarked for the training and certification requirements of its operations teams and operating support personnel.

While most substantive violations are not specific violations of NERC’s PER standards (Personnel Performance, Training and Qualifications standards), training is regularly cited in notices of violation, and is often identified as part of the prescribed corrective action in the settlement. The challenges of the current and future power system (anticipated workforce shortages, age of the physical system, planned enhancements for the growth of renewables, e-cars and smart grids), when combined with the requirements to use NERC certified operating personnel twenty-four hours a day and seven days a week, make it ever more critical that training programs provide enough content for operators to understand the needs of the changing system. One of the most prudent planning and investment steps that utilities, generator operators and co-ops can take is to invest in the training of operations and operational support personnel.

Traditionally, control room personnel have not been electrical engineers by training. Therefore, most have not been exposed to system planning methods and techniques to facilitate understanding of the system’s response to given dynamic conditions. At a minimum, the different approaches to training and development of planning engineers as compared to that of operating personnel create disparate knowledge sets which widen the communication gaps that are frequently evident between these groups. Often these knowledge gaps are what cause some of the cited NERC violations.

To help shore up these knowledge gaps, traditional compliance training programs for operations personnel must evolve beyond system-response drills and move toward career development training. Operating personnel must have the opportunity to learn, at a high level, much of the same material that planning engineers are exposed to during their careers. The result is a more holistic training approach for operations personnel, one that includes the fundamentals of electrical theory, system planning and the evaluation of downstream impacts which planned interconnections can have on real-time operating scenarios. By creating a base of collective knowledge and experience, this approach enables a mutual appreciation of system fundamentals and fosters communications by providing commonly understood technical terminology, resulting in improvements to system reliability and security.

Siemens Power Academy workforce development training has been part of Siemens PTI’s core business more than 40 years. We’ve seen these anticipated benefits become reality for our clients – for planning engineers as well as for technicians and operators. That is why Siemens Power Academy has invested in content development to incorporate NERC operation and simulation standards into our courses; operators can enroll in our courses and accomplish their compliance training as they further their career development. Our NERC certified courses can provide operators with up to 300 professional hours, up to 120 standards hours and up to 50 simulation hours toward their compliance certification. Operating personnel can enroll in our NERC certified courses to learn the necessary theory and engineering skills as well as earn compliance hours for certificate maintenance; eliminating the need to choose between
compliance requirements and development goals. Operators can also enroll in one of our three curriculum tracks, choosing among certificate programs in PSS®E Network Planning and Analysis, Distribution Systems and Power Technology. Siemens Power Academy is an excellent choice for utilities, generator operators and co-op managers searching for development and compliance training for their teams.

Training more than 1000 students per year from more than 90 countries, Siemens PTI through Siemens Power Academy is a leading provider of power systems engineering training and education. The goal of the Power Academy is to provide our customers with meaningful training programs that help develop engineering skills while supporting industry compliance efforts. We are dedicated to the development of this industry’s operations and power system engineering workforce. As we embark on the design and development of the next generation of infrastructure, increasing the integration of renewables to the grid and making smart grid a reality, Siemens Power Academy will be here to support our customers’ and our industry’s training and development needs.