

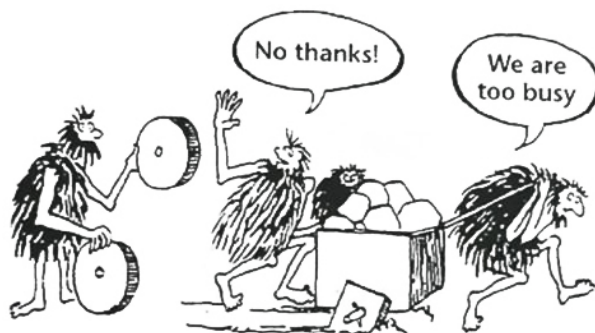


Improving Relay Setting Processes to Keep Talent

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The daily operations of a relay setting engineer can be loaded with many different tasks such as answering calls from the field, attending meetings, trouble-shooting a mis-operation, and, above all, developing crucial relay settings. The relay setting process alone can be laborious, difficult and frustrating using the internal processes established by each utility. For example, engineers must provide accurate settings by following a process that requires them to transfer large amounts of data manually from short circuit programs to calculation sheets and then to relay setting files and, finally, to reports. Furthermore, NERC has added another layer of responsibility whereby engineers must ensure that the settings comply with NERC standards. As can be seen, the process to develop relay settings is complex, and engineers must navigate a labyrinth of complicated and broken processes to complete a setting job. All these requirements and expectations may lead engineers to seek out new career options, so utilities must be creative in finding ways to improve their internal processes in order to keep talented employees. The use of automation techniques to develop relay settings can help to alleviate the pressures engineers feel and may increase the likelihood that they will feel satisfied and fulfilled in their positions.

Based on a report by Nitex, broken processes may contribute to employee turnover as employees look for other opportunities inside or outside of the company (1). Utilities cannot afford to lose the repositories of specialized talent and expertise that these engineers represent. Learning to be a good protection engineer is a slow process that can take several years of experience to achieve. Furthermore, according to the ManGroup, employers are struggling more than ever to find the right talent. Sixty-five percent of large organizations cannot find the skill they need (2). As a result, utilities must seek innovative solutions to improve their existing processes in relay setting development to ensure that talented engineers are given a fluid and efficient process for their daily operations.



The tedious manual processes that engineers currently employ can be reduced tremendously with the use of cutting-edge technology. By combining the protection engineer's expertise with this technology, the processes can be made significantly more dynamic and efficient. SynchroGrid has created an innovative automation tool called SARA (Settings Automation Relay

Assistant) that completely eliminates the copy and paste steps engineers now utilize and replaces them

with automation algorithms. These new algorithms are intelligent enough to perform the tasks required by the utility protection philosophy and standard methods. Empirically, these new automation routines have reduced the required time to develop settings for complex applications from 6 hours of manual work to less than 10 minutes.

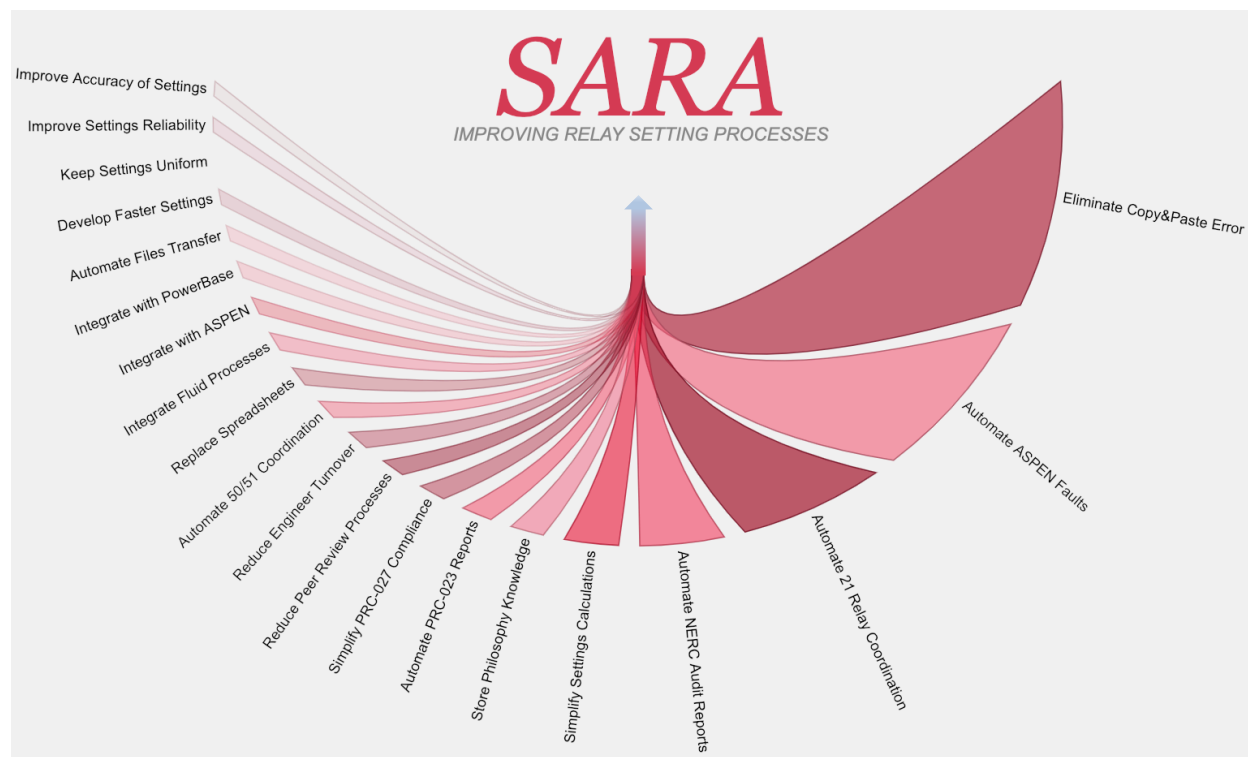


Figure 1: Improving Relay Setting Development Processes with SARA

While the time reduction is certainly an enormous benefit, the elimination of copy and paste errors is the greatest gain. Furthermore, using similar techniques, protection engineers can also automate the relay setting reports that are required for NERC compliance. Through the use of automation, protection engineers can easily streamline the creation of relay settings and produce appropriate reports in less than one minute. Figure one depicts all the steps that can be consolidated and automated through SARA. SARA can additionally automate faults, peer review processes, data retrieval, reports, and coordination of distance and overcurrent elements for any given transmission line application. This smooth and fluid process empowers engineers to be more efficient and gives them the opportunity to turn their attention to other important tasks at work.

Utilities must find new ways to improve their internal processes in order to retain talented protection engineers. The use of automation features makes the protection engineer's daily performance more efficient, allowing them to be more productive and enjoy more job satisfaction.

References:

1. <https://go.manpowergroup.com/talent-shortage-2018>

2. <https://info.nintex.com/rs/272-JVS-996/images/Nintex%20AMBP%20Ebook%20Final.pdf>