

## **Developing America's Next Generation of Electric Utility Professionals**

### **Mrs. Sonya Overstreet, EASi**

Sonya Overstreet, Learning and Development Manager (North America) at EASi a global engineering services company. Mrs. Overstreet's professional career includes years of experience in the engineering field. For several years, she managed the integration, use, and support of engineering design software at a multi-regional civil engineering firm. In her current position, Mrs. Overstreet is responsible for executing learning & development strategies to ensure the building of employee capabilities, development of leaders and retention of key talent to meet business objectives. Mrs. Overstreet earned a Bachelor of Arts Degree in Organizational Communication from Otterbein College and a Master of Science in Instructional Design and Performance Technology from Franklin University. Mrs. Overstreet has also earned the designation of Certified Performance Technologist from the International Society for Performance Improvement (ISPI).

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## **Abstract**

This paper will examine how industry leaders are creating solutions to address the looming skills gap in the electric utility industry. EASi, an engineering services company, developed a unique services model to support the electric utility industry and provide a fresh influx of talent. By embracing all three generations – baby boomer, generation x, and millennials – currently in the workforce, the model helps close the skills and knowledge gap.

## **Introduction**

In today's professional workplace environment, there is a mix of three distinct generations, baby boomer, generation x, and generation y, also referred to as millennials. Baby boomers, the post-World War II generation born between 1946 and 1964, generation x, born between 1965 and 1980, and millennials, born between 1981 and 2000. As baby boomers age, they will continue to leave the workforce. With their departure, years of knowledge, skill, and experience are also leaving the workforce. The electric utility industry, like many others, is feeling the effect of baby boomers' exodus to retirement. A variety of factors, including the growing retirement eligibility and "...the generational shift in the traditional utility workforce..."<sup>1</sup> is having an adverse effect on the utility industry.

According to the U.S. Bureau of Labor, 46.2 million baby boomers, 46.9 million generation x and 46.4 million millennials were employed in the fourth quarter of 2014. Baby boomers began to reach retirement age, 65, in 2011<sup>2</sup>. All baby boomers will be over 65 by 2029 and will make up more than 20 percent of the U.S. population<sup>3</sup>.

To get ahead of the curve, EASi partnered with one of the largest electric utility companies in the mid-west with an eleven-state footprint serving more than 5.4 million customers, to strengthen the pipeline of future electric utility professionals. What makes this partnership so unique is that there is an intentional blending of all three generations currently in the workforce.

This paper will focus first on the industry drivers that led the electric utility company to collaborate with EASi to develop a unique services model. Second, this paper will discuss the objectives of the model to (1) create a culture of learning, (2) re-engage retired electric utility workers in the workforce, (3) develop midcareer electrical engineers and entry-level two-year electrical engineering technologists and four-year electrical engineering graduates, (4) develop a talent pipeline for electric utility companies, and (5) create a recruitment program with local colleges. Last, this paper will discuss the ongoing needs, and challenges EASi faces in sustaining their partnership with the electric utility company.

## **Industry Need**

In a 2016 presentation at the Edison Electric Institute's fall Transmission Distribution Metering & Mutual Assistance conference, the Director Transmission Dispatching of the electric utility company and Maxim Castellino, Delivery Director, EASi detailed the workforce development

challenges faced by the electric utility company in 2010<sup>4</sup>. The Director Transmission Dispatching identified the challenge as the need to acquire talent. Due to a restructuring in 2010, the electric utility company lost 44% of their experienced Protection and Control Engineering (PCE) employees to early retirement. The 44% loss was equivalent to 30 of 68 PCE employees leaving the company.

Not only did the restructuring have a negative impact on their internal workforce, a host of new restrictions made it difficult to rebuild their workforce using traditional staffing options.

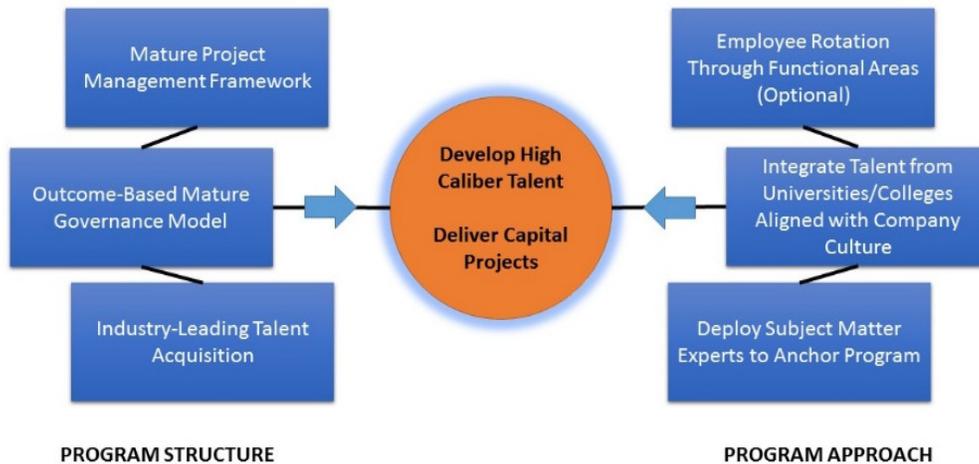
According to the Director Transmission Dispatching, there were internal restrictions on (1) hiring full-time employees, (2) rehiring former employees who received a severance package during the 2010 restructuring, (3) employees in a staff augmentation role, and (4) the training dollars dedicated to developing full-time employees.

Because of their internal workforce reductions, hiring and staffing restrictions, and need to continue to execute engineering projects, the electric utility company needed an innovative workforce development solution. It was critical that any support services solution address their immediate and long-term talent needs and scale up or down to meet future business requirements.

### **Engineering Services Model**

Shortly after the restructuring in 2010, the electric utility company entered into a partnership with EASi. EASi's solution to addressing the electric utility company's workforce development challenges in Ohio was to create a unique engineering support services model that incorporated a talent development pipeline.

According to Mr. Castelino, the structure and approach of the solution were designed to develop high caliber talent and deliver on capital engineering projects. To achieve these goals, there were six support objectives identified. Three of the support objectives targeted the program structure (1) outcome-based mature governance model, (2) mature project management framework, and (3) industry-leading talent acquisition. The remaining three support objectives targeted the program approach, (1) integrate talent from universities aligned with company culture, (2) deploy subject matter experts to anchor program, and (3) create optional rotation through functional areas. Figure 1 graphically depicts the structure of the model.



*Model recreated with permission.*

Figure 1 – EASi Engineering Support Services Solution for Electric Utility Company

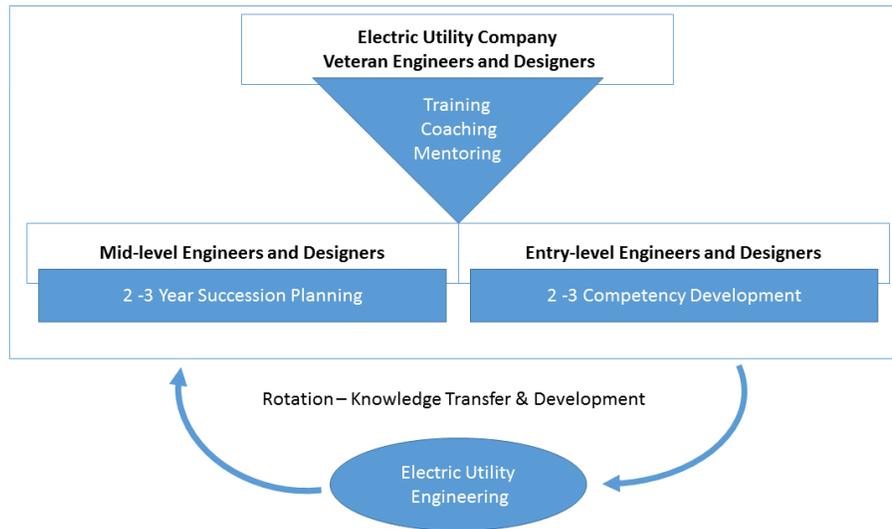
## High Caliber Talent

The initial focus of the model was to support the electric utility company’s Protection and Control Engineering group, but soon expanded to support other groups including Substation Engineering, and Project Management. To deliver high caliber talent, EASi needed to build an immersive learning environment that would facilitate and support the development of an accelerated talent apprenticeship program. The first step EASi took was to hire recent retirees and other veteran engineers and designers who had years of experience working directly for the electric utility company client or other similar companies. This group of subject matter experts would be responsible for training, coaching, and mentoring midcareer and entry-level employees, as well as ensuring quality deliverables and leading complex design projects.

The second step was to define the elements of the desired immersive learning environment, the cornerstone being hands-on learning. For EASi employees to have quality hands-on experiences, the electric utility company committed to providing EASi with billable “low risk” transmission engineering projects. Low risk projects as defined by the electric utility company are projects with budgets of less than one million dollars, operate at a 100kv or lower voltage, have short lead-time materials, and require a limited outage period. Low risk projects generally include rebuilding or replacing aging substation equipment.

These projects would be used as a continuous supply of active engineering projects to train and develop the skills and competencies of less experienced employees. Other elements of the immersive learning environment included access to the electric utility company’s institutionalized knowledge through their Learning Management System, customized software, and applications and standard and design guidelines. In addition to the knowledge pulled from the client, EASi would provide specialized technical documentation, post-project notes, and regular formal and informal learning sessions.

The third step was to build a pipeline of midcareer and entry-level employees. EASi’s talent acquisition approach incorporated a regional and national strategy for finding talent. To acquire the needed talent, EASi’s would first hire the retirees, second, hire midcareer talent for a two to three-year succession-planning window and third, hire entry-level talent with a two to three-year competency development window. See Figure 2 for the EASi talent development pipeline model.



*Model recreated with permission.*

Figure 2 - EASi Talent Development Pipeline

### Talent Acquisition and Academia Partnership

EASi’s acquisition of the retirees was straightforward. To maintain decades of legacy knowledge of their projects, practices, and procedures, the electric utility company provided EASi with the contact information of their valued retired employees. EASi then hired those employees to staff their technical management and subject matter expert positions.

The next step was for EASi to staff the midcareer and entry-level positions. To do this, EASi’s talent acquisition team began to reach out to colleges and universities inside and outside of Ohio. The team recruited heavily in Ohio from The Ohio State University, Ohio Northern University, Ohio University, and Zane State College. EASi expanded their recruitment territory to include Oklahoma State University, Arizona State University and Missouri University of Science and Technology. The reasons for the expanded recruitment territory were (1) the Ohio schools do not have a power focus in their electrical engineering programs and (2) EASi opened an office in Oklahoma to support the electric utility company’s West territory.

To increase their ability to attract talent, EASi developed relationships with engineering department chairs, professors, career placement departments, and alumni groups. EASi also actively participated in career fairs throughout the year and sponsored Ohio Institute of Electrical and Electronics Engineers (IEEE) programs.

## Industry Impact and Future Challenges

The two primary goals of the partnership were (1) develop high caliber talent and (2) deliver capital projects. EASi has met and exceeded these two goals. From the initial investment in 2010, when EASi hired five of their client’s former employees to deliver on Protection and Control Engineering capital projects in Ohio, to the end of 2016, the partnership has grown tremendously. By the end of 2016, EASi was operating three delivery centers with more than 200 technical and business operations employees covering ten different lines of business dedicated to supporting the partnership. Each colored cell in Table 1 indicates the lines of business supported in the delivery center. Cells with a down diagonal line indicate the lines of business not supported in the delivery center.

EASi is developing high caliber talent to complete capital projects within their organizational structure but is also feeding the pipeline of qualified talent that can transition directly to their client. From 2010 to the end of 2016, 91 EASi employees have transitioned to the electric utility company as full-time employees.

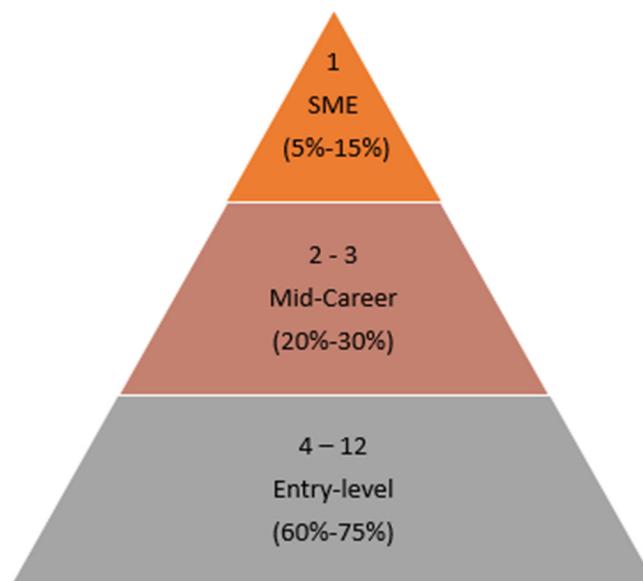
		EASi Delivery Center Locations		
		Ohio	Oklahoma	Virginia
Line of Business	Protection and Control Engineering			/
	Station Engineering			/
	Transmission Line Engineering			
	Project Management			
	Right-of-Way			
	Outage Coordination		/	/
	IT – Telecom			
	Distribution			/
	Planning			/
	Advanced Studies		/	/

Table 1 - EASi Delivery Center

In a series of presentations in 2016 and 2017 to EASi and the electric utility company stakeholders, David Rupert, Senior Delivery Manager, EASi, articulated the challenges facing the partnership in the near future. The main challenge is sustaining the success of the engineering services model while expanding the headcount by 30%-40% in 2017- 2019<sup>5</sup>. The projected 30%-40% headcount increase requires adding staff in all three delivery centers, Ohio, Oklahoma and Virginia.

Mr. Rupert provided a slight refocus of the partnership by identifying the three principle components moving forward: (1) providing engineering services, (2) developing business and technical processes and (3) providing a talent pool and engineering talent development. With this refined focus, 80% of EASi's efforts will concentrate on providing quality engineering services and developing effective business and technical processes. In turn, EASi will focus 20% of their effort toward developing a talent pool of experienced employees to transition to the client.

To maintain these three principle components, Mr. Rupert introduces EASi's new ideal state resource pyramid. The resource pyramid details the gearing ratio guideline, one subject matter expert, 2-3 midcareer engineers or designers and 4-12 entry-level engineers or designers. Figure 3 details EASi's ideal state resource numbers and gearing ratio.



*Recreated with permission.*

Figure 3 - EASi Resource and Gearing Ratio Pyramid

With respect to addressing the increased headcount by 30%-40% and considering the future attrition rates of EASi employees transitioning to the electric utility company, EASi's talent acquisition team estimates that they will need to hire between 130 and 150 technical employees. In 2016 alone, they hired 100 technical employees to support the partnership.

Finding and hiring 130 to 150 electric utility-minded employees is not going to be a simple task. EASi's talent acquisition team acknowledges that interest level to pursue a career at an electric utility company is low among U.S. engineering students. A career in electric utilities is simply not an obvious career option for many students. There is also a misconception that the industry is not innovative or creative.

## **Summary**

The electric utility industry is feeling the effects of the workforce generation swings. As many long time dependable utility workers began to retire in greater numbers, utility companies are forced to find creative solutions to rebuild their professional ranks.

One of the largest electric utility companies in the country, serving nearly 5.4 million customers in eleven states, reached out to EASi to develop a unique and creative solution to stop the drain in their institutional knowledge due to a major organizational restructuring where they lost 44% of their experienced Protection and Control Engineering (PCE) employees. EASi designed an engineering support services model where they would hire recent retirees, along with midcareer and entry-level engineers and designers, to complete the company's capital projects. This model would also train and develop talent to feed a pipeline of qualified professionals capable of transitioning to the electric utility company when openings are available.

To deliver the next generation of electric utility professionals, EASi recruits heavily from universities inside Ohio, as well as outside of Ohio at universities that have a power focus in their electrical engineering programs. To meet the talent needs in 2017–2019, they will likely broaden their search to include more universities. Thoughtful and deliberate partnerships between business and academia can help drive tremendous impact within any industry.