

## **Regional Stakeholder Education Through The Nuclear Workforce Initiative - 11101**

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### **ABSTRACT**

Unique growth in the nuclear industry is occurring in a region of Georgia and South Carolina where new nuclear facilities are being developed. Major expansion projects are progressing at two nuclear power plants, Plant Vogtle in Georgia and V.C. Summer Nuclear Station in South Carolina. In addition, the Mixed Oxide Fuel Fabrication Facility and other projects are underway in the heart of the region at the Department of Energy's Savannah River Site (SRS). The SRS Community Reuse Organization (SRSCRO) commissioned a regional nuclear workforce survey to determine the associated workforce demand. Results showed that as many as 10,000 new workers are needed to support the local nuclear industry over the next decade.

To strategically address the region's nuclear workforce demand, the SRSCRO established the Nuclear Workforce Initiative (NWI). Nuclear employers, educators and economic developers participate in NWI to collaboratively support the vision of a well-trained and highly qualified workforce that meets the ongoing needs of the nuclear industry. Collectively, NWI participants are working to ensure that people in the region have an opportunity to develop the skills required for nuclear-related jobs in the region.

Educating the public about the region's nuclear industry and associated career-development opportunities is a key aspect of NWI. Components of NWI include the following:

- Identifying energy workforce issues for the region
- Building awareness of the need for energy workers
- Creating a sense of excitement around the energy industry in the region
- Identifying opportunities for economic growth and worker advancement
- Building relationships with education, industry and economic development partners
- Facilitating regional education and training offerings to meet employer and worker needs.

The unified approach toward developing a nuclear workforce is inherently educating the public about the nuclear industry as it promotes career awareness and education for the nuclear industry.

### **INTRODUCTION**

The U.S. nuclear industry is preparing to support increasing national energy demands through expansion. As a result, the need intensifies to educate the public about positive economic benefits of the nuclear renaissance, particularly regarding career opportunities. Building a

single new nuclear plant creates more than 1,400 jobs during construction. The operation of a nuclear plant generates between 400 and 700 permanent well-paying jobs [1]. Yet, as the demand is increasing for a safe, reliable nuclear workforce to support new nuclear power units, more than a third of current nuclear utility employees are eligible for retirement [2]. The resurgence of the nuclear energy industry requires qualified workers, and educating the public encourages the preparation required to meet critical nuclear skill needs.

Expansion of the nuclear industry is a reality in the two-state region of Georgia and South Carolina known as the Central Savannah River Area (CSRA). The CSRA includes the U. S. Department of Energy's (DOE) Savannah River Site (SRS), where construction of the Mixed Oxide (MOX) Fuel Fabrication Facility is underway for converting weapons-grade plutonium into MOX fuel assemblies. Just west of SRS, construction activities are progressing for two new nuclear power facilities at Plant Vogtle in Georgia. To the east of SRS, work is proceeding for two additional new nuclear power units at the V.C. Summer Nuclear Station in South Carolina.

These new facilities are scheduled to begin operating in the near future. The MOX facility is slated to begin operation in 2016. That same year, two new nuclear power plants are scheduled to come on line – one at Plant Vogtle; the other at V.C. Summer. The two new plants at Plant Vogtle and at V. C. Summer will begin producing power in 2017 and 2019, respectively. Each of these facilities will require a properly trained and skilled workforce, in addition to the workers required to operate and maintain the three existing commercial nuclear plants and many SRS facilities.

Beginning in 2008, the SRS Community Reuse Organization (SRSCRO) assessed the workforce challenge associated with nuclear expansion in the greater CSRA region. The SRSCRO is a 501(c)(3) private, non-profit organization that was originally designated as the region's U.S. DOE Community Reuse Organization consistent with Section 3161 of the Defense Authorization Act of 1993. The SRSCRO is governed by a 22-member Board of Directors composed of business, government and academic leaders from Georgia and South Carolina. The organization is focused on diversifying the region's economy by facilitating economic development and job creation in its two-state, five-county region that includes Richmond and Columbia counties in Georgia, and Aiken, Allendale and Barnwell counties in South Carolina.

The SRSCRO considered how the region it serves is significantly affected by expansion of the nuclear industry in the greater CSRA. The region's economic future is impacted by demand for a capable and available technical workforce to support the growing nuclear industry. To assure a continued pipeline of local talent, the SRSCRO called for a cohesive strategy to benefit the people of the greater CSRA.

## **EDUCATING COMMUNITY LEADERS**

The SRSCRO formally addressed the local need for new nuclear workers during November 2008 in a position paper titled "Ensuring a Skilled Workforce for the Nuclear Renaissance." The SRSCRO called for a unified, regional approach to address the local need for new nuclear workers, emphasizing the dramatic economic impact to the community associated with building

and operating regional nuclear power plants and Savannah River Site facilities over the next decade. Community leaders from all relevant private, governmental and educational institutions along with economic-development entities were called on to work together. The group's single-minded goal was ensuring that an adequately trained workforce is ready in sufficient numbers to meet the challenges posed by regional nuclear expansion [3].

To determine credible estimates of the quantity and timing for the demand of new nuclear workers, the SRSCRO commissioned a regional nuclear workforce survey in 2009. The consulting firm of Booz Allen Hamilton conducted the survey, which included eight regional nuclear employers. With a focus on filling both new positions and jobs vacated due to retirement and attrition, the survey quantified future needs for more than 50 key nuclear industry jobs in professional, engineering, technical and craft categories. The results showed the need for approximately 10,000 new nuclear workers over ten years in the region. This data validated the region's need for a capable and available technical workforce to support economic success [4].

The results of the survey were officially released at the Nuclear Workforce Summit in June 2009, with stakeholders from the CSRA participating. Dr. Inés Triay, Assistant Secretary of Energy for Environmental Management, served as the keynote speaker for the opening session. The Summit included working sessions where representatives from colleges and universities, economic developers and nuclear employers explored ways to ensure that an adequately trained workforce is ready in sufficient numbers to meet the workforce challenges identified in the study. Summit participants identified gaps between existing training programs and employer needs. Participants recommended that the SRSCRO take a lead role to coordinate and manage a unified regional effort to ensure that education and training programs are in place to meet the long-term need for a nuclear workforce [5].

During August 2009, the SRSCRO held a separate summit with the eight school District Superintendents of the region. Results of the nuclear workforce survey were discussed with a focus on the significance to K-12 educators and their students. Leaders recognized that students currently in middle and high school have an opportunity to be part of the local nuclear workforce. The meeting resulted in a continuing dialogue with area Superintendents regarding best practices for reaching students with the message of career opportunities in the nuclear industry and approaches to developing related skills.

To confront the workforce demands and respond to expectations of the workforce summits, the SRSCRO instituted the Nuclear Workforce Initiative (NWI). A program manager was hired to manage the effort by coordinating the collaboration of appropriate stakeholders and facilitating the development of a long-term strategy to increase educational and training capabilities within the region.

## **BUILDING COLLABORATION**

Through the workforce summits, community leaders developed a unified understanding of the regional need to ensure a capable and available technical workforce for the local nuclear industry. The NWI was established to implement the concept of ensuring that people in the

region have the opportunity to develop the skills needed for the nuclear industry jobs of the region. The concept is known through NWI as “*growing our own through collaboration.*”

Beginning in January 2010, the NWI program focused on building the collaboration required to implement the “growing our own” concept. To ensure that government and industry nuclear workforce needs formed the foundation of NWI, the SRSCRO called on the executive managers of local nuclear employers. One senior manager from each organization that participated in the Booz Allen Hamilton survey attended a strategy forum to provide guidance and direction and to assess the most productive subcommittee structure for implementing the NWI program. At the forum, the NWI vision, mission and goals were established:

### **NWI Vision**

To provide a well-trained and highly qualified workforce that meets the ongoing needs of the nuclear industry in this region.

### **NWI Mission**

To promote and expand nuclear workforce-development capabilities by facilitating integrated partnerships between nuclear employers and educational and training entities that foster regional educational attainment, economic growth and job opportunities.

### **NWI Goals**

1. Facilitate collaboration among nuclear employers on regional staffing needs and incorporate staffing strategies into the Nuclear Workforce Initiative mission.
2. Promote nuclear career paths and enhance science, technology, engineering and mathematic (STEM) programs in coordination with existing K-12 public-education curriculum requirements.
3. Align and coordinate regional educational and training entity curricula and certification requirements to specific job skill needs of nuclear employers.
4. Perform outreach and form collaborations to achieve regional and national support to advance the mission of the Nuclear Workforce Initiative.

To address each NWI goal, four committees were formed: Staffing, K-12, Post-Secondary and Outreach. Members of the committees include representatives of nuclear employers, with specific knowledge of corporate human capital needs; K-12 educators; local college and university leaders; economic developers, and nuclear-employer representatives with experience in outreach activities.

Over 40 participants became actively involved with NWI during 2010. Each committee developed focus areas and ultimately began the process of engaging the region in nuclear workforce development. Through the Staffing Committee, the region’s nuclear employers were connected to discuss hiring, retention and training issues and trends. These employer needs and

issues were addressed through the Post-Secondary Committee, where college and university leaders met to collaborate on realistic solutions for education and training programs. The K-12 Committee focused on expanding K-12 best practices through the region that promote nuclear career awareness and skills needed by the nuclear industry. The Outreach Committee served as an advisory panel on ways to effectively build nuclear industry awareness and collaboration using media and other public-relations tools.

## **ENGAGING THE REGION**

By the end of 2010, just 18 months after the nuclear workforce survey results were released, early impacts of the Nuclear Workforce Initiative are already noticeable in the region. Some are intangible, such as connections made between employers for relaying best practices or the collaborative spirit formed between employers in support of K-12 programs. But others are easily attributed to NWI.

Communication of nuclear career information to leaders of the region's eight K-12 school districts created a receptive environment for programs that educate the educators. Actions by NWI's K-12 Committee expanded participation and content for an existing nuclear science workshop. Science teachers from 17 high schools participated in the July 2010 program. The effort also demonstrated regional demand for more nuclear science-related teacher development programs for the eight local districts.

NWI partnered with nuclear employers for a successful pilot, educator field-study program at SRS. The program informed principals and career counselors about careers at SRS through site tours and information sessions. Specific skills sought by SRS employers and ways that students can obtain those skills through local education and training programs were emphasized so that K-12 educators have current information for advising students.

Gaps between local education training programs and critical career needs have been identified through NWI. Colleges and universities of the region worked together through NWI and identified seven new college programs for development. The programs are directly linked to local nuclear staffing needs. The post-secondary institutions coordinated plans for the programs across five colleges in the region. Once implemented, these programs will complement other expanding, well-recognized nuclear education programs of the region.

A single source for information about nuclear-related educational and career development opportunities has been established through the updated SRSCRO website. New NWI web pages provide information about regional programs and link users to virtual job-shadowing information, useful educational resources and local post-secondary programs. NWI is using these tools to generate excitement about the nuclear industry and to relate industry opportunities to the community.

## **SUMMARY**

The CSRA region of Georgia and South Carolina has unique needs relative to a nuclear workforce due to major expansion projects in the government and utility sectors of the area's nuclear industry. The SRSCRO commissioned a regional workforce study that quantified the local workforce need and used the results to communicate the economic opportunity and obligation that local leaders have to ensure a skilled workforce for the region. Results from the nuclear workforce study served to educate the public about the emerging nuclear renaissance in the CSRA region and sparked a collaborative leadership response.

Nuclear employers and educators are collectively addressing the region's needs through the Nuclear Workforce Initiative of the SRSCRO. The Nuclear Workforce Initiative is focused on expanding workforce development capabilities and promoting education and career opportunities so that people in the region have the opportunity to prepare for the nuclear industry jobs of the region. The result is an initiative that is inherently educating the public *about* the nuclear industry as it promotes career awareness and education *for* the nuclear industry.

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