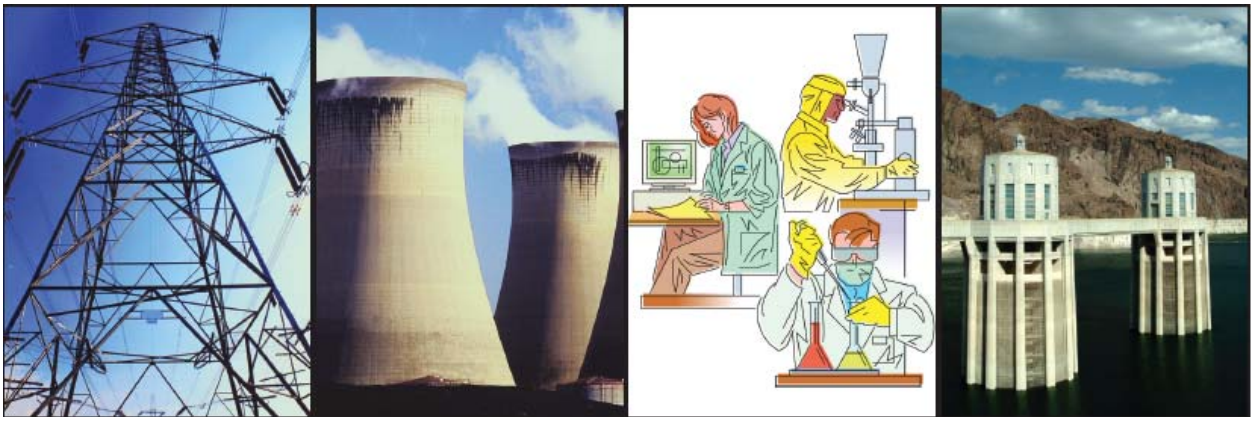
SUMMARY REPORT

NUCLEAR WORKFORCE SUMMIT



Sponsored by the Savannah River Site Community Reuse Organization (SRSCRO)

Prepared By:
MAS Consultants, Inc.

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BACKGROUND

The Savannah River Site Community Reuse Organization (SRSCRO) is charged with developing and implementing a comprehensive strategy to diversify the economy of the five-county SRSCRO region in the CSRA. The SRSCRO recognized that existing industry nuclear workforce studies were focused on the entire U.S. industry at a relatively high level with the smallest "slice" covering the entire Southeast U.S. To ensure that the collective resources in the region are maximized and to address the nuclear workforce challenge in a timely way, the SRS Community Reuse Organization sponsored a nuclear workforce survey and convened a nuclear workforce summit.

Early in 2009, the SRSCRO chose Booz Allen Hamilton, a consulting firm experienced in the nuclear industry, to conduct a more detailed analysis of the current and projected regional nuclear workforce needs over the next decade. Booz Allen Hamilton used interviews and a data collection questionnaire to survey the eight regional nuclear companies working in the local region to develop the nuclear workforce survey report. The survey was not intended to identify any immediate new job opportunities such as jobs created in response to the American Recovery and Reinvestment Act programs at SRS.

The Workforce Summit began on June 11, 2009 at a dinner at Augusta State University where the results of the survey were released by the SRSCRO. The Summit concluded with an all day working session on June 12, 2009 at Newberry Hall in Aiken, SC. The Summit was attended by invited participants from local nuclear employers, colleges, universities and economic development groups. The list of attendees that participated in the working session on June 12th is included in Attachment One.

This paper summarizes the results of the one-day Summit.

METHODOLOGY

Mike Schoener of MAS Consultants served as the facilitator for the Summit. The objectives of the summit were to:

- *Review the workforce skills needed for nuclear-related projects in the next decade.*
- *Identify education, training and other initiatives that may be needed to ensure an adequate, long term workforce*
- *Open a continuing dialog among nuclear employers, educational institutions, local economic development entities, local and state elected officials and others who can help identify needs and resources and influence implementation of successful nuclear workforce education and training strategies.*

The Summit was structured to provide initial information to the participants related to survey results as well as data related to degrees awarded by colleges and universities in South Carolina and Georgia. The summit participants were assigned to specific breakout groups to ensure that each group had diverse representation from industry (employers), education, and economic development. The Summit was structured so that the small breakout groups could address specific issues and provide recommendations, and then the results of each breakout group would be presented and the larger group would look for common areas that would support the development of recommendations.

RESULTS

Presentations

The Summit began with a presentation by representatives of Booz Allen Hamilton to present the results of the survey and to answer any questions that the Summit participants had. The results of the survey covered 57 key individual job positions in four primary categories: Professional, Technician, Engineer and Craft. The results indicated job needs by position in the near term (1-4 years) and the midterm (5-10 years). The participants were provided with a copy of the survey results presented by Booz Allen Hamilton.

Following the presentation of the survey results, Dr. Susan Winsor, President of Aiken Technical College presented the results of data compilation that included the number of related degrees that have been issued by colleges and universities in South Carolina and Georgia as well as the head count of students in these degree areas. This data was given to the Summit participants to provide them with an indication of the current output of related degrees and number of students enrolled in programs that correlate with the upcoming job needs.

First Breakout Session

The five breakout groups were asked to review the data from the survey results and the educational data and address the following two items:

- *Identify the most significant gaps between regional graduates and jobs available.*
- *What new program or programs are needed regionally to fill the gaps (near term and mid term)?*

The breakout groups were asked to present their recommendations for each of the four primary position categories (professional, technician, engineer and craft). Each of the breakout groups presented the results of their working session

to address these two issues. Mike Schoener then facilitated a group session to identify common recommendations and considerations. The results of this first facilitated session are as follows:

Professional

- Industry and education should work together to establish a "feeder program" to prepare local people to go into a nuclear operator program. This could be a two-year degree program or certificate program and provide the fundamental technical training that would prepare people to be nuclear operators at SRS or operators at a nuclear power plant, and eventually become a licensed operator. This is not a nuclear engineering program.

- There is significant need for both Quality Assurance and Quality Control professionals and technicians (see below). Emphasis needs to be placed on making individuals aware of requirements for these jobs. Local colleges and universities could support this effort through two-year degree programs, certificate programs, a small series of courses, and/or continuing education.

- The Scientist/Engineer position is primarily in support of research and development (R&D). There is a growing need for these individuals. Industry and education need to work closely together to try to meet these needs. Strategies to be considered include establishing co-op or intern programs, providing research funding for faculty, providing summer or other part time job opportunities for faculty and/or industry providing part time or loaned faculty to support these education programs.

Technician

- The following top six positions in the survey need specific attention:
  - Health physics technician
  - Mechanical Technician

  - Instrumentation & Control technician
  - Electrical technician
  - Chemistry technician
  - Quality Control (QC) technician

- Support for these programs needs to be primarily from two-year colleges. Aiken Technical College has a Health Physics program. Particular emphasis should be placed on developing programs that support the Instrument Control and Quality Control positions.

- There are existing Industrial standards that should be considered when establishing curriculum for these areas. Industry and education must work together to establish the curriculum for these programs.

- If possible, the institution(s) providing this education/training should issue appropriate credentials to go with certificate or degree.

Engineer

- There is not a significant number of Fire Protection Engineers required but qualified people are hard to find. Is it worth it to build a program – or have alternatives?

- Nuclear engineering curriculum should be reviewed to consider the addition of in-depth coverage of specialized codes and standards that are specific to the nuclear industry.

- There is not a large number of Nuclear Engineers identified, but what are needed are other engineers (e.g. Mechanical Engineers) with nuclear knowledge. Colleges and Universities that provide engineering programs should consider adding nuclear courses as electives, providing courses that cover codes and standards that are specifically related to the nuclear industry, and/or encouraging engineers to minor in nuclear engineering.

- While there is regional access to engineering programs, there is no local access to this curriculum. There should be consideration given to distance learning and other initiatives to provide engineering curriculum to local people.

- Colleges and universities should work together to establish "2+2" programs to allow local people to get started with an engineering curriculum in a two year college and then move to a university to obtain a four year degree.

Craft

- Local colleges should consider the development of a common, industry standard curriculum. Industry Standard curriculum means that the course of study meets the current practices and processes that are being utilized in the industry. Those processes and practices get antiquated over time so it is important to keep them current.

- Aiken Technical College is currently providing training in welding, pipefitting, and electrical, although not to the specific standards required by the nuclear industry.

- Two-year colleges should consider programs and curriculum from organizations such as the NCCER – National Center for Construction & Research.

- Colleges and universities should consider developing a curriculum for developing leadership skills among craft preparing them to be supervisors, foremen and trainers.

- Training and education should be provided so that individuals come out with industry credentials or they are able to sit through and pass exams and receive industry credentials.

- Education and industry need to work together to attract and/or provide faculty that can effectively teach the up-to-date curriculum to meet the needs of industry.

Other

- All education and training provided by colleges and universities should consider the addition of curriculum that addresses the "nuclear culture."

- Individuals that are considering entering the nuclear field should be made aware of the requirements associated with "Fitness for Duty"

- A strategy to get more students interested in all of the above areas should be pursued. This includes a strategy to work with K-12 educators and counselors to get students interested early.

Second Breakout Session

The second breakout session was conducted in the afternoon. For this session, the five breakout groups were asked to address the following item:

> *What needs to be done in the near term (next 4 years) and the mid-term (5-10 years)? (e.g. collaboration, grant submittals, political support, regional taskforce, inviting others to participate, etc.)*

Each of the breakout groups presented the results of their working to session to address this issue. Mike Schoener then facilitated a group session to identify common recommendations and considerations. The results of the second facilitated session are as follows:

- With regards to the expansion of existing curriculum, we need to look at existing curriculum to determine what we have, if it needs to be repackaged, changed, or added to. There needs to be an integrated partnership between industry and education to do this review. In

addition, there needs to be an alignment of curriculum across all of the affected educational institutions.

- Industry and education need to sit at the table together to ensure that there is more nuclear awareness in the educational programs, so students have a better understanding of what is required of them when they go into the nuclear field.

- We need to establish a plan and strategy to establish funding for the initiatives that are being recommended. The grant writing process is integral to this. Existing Advisory Boards should be considered as a source of assistance.

- Consideration should be given to establishing a four-year engineering campus in the local area.

- A single information repository to establish what the colleges and universities have that could be useful to industry would be helpful.

- A single, coordinated strategic plan should be developed related to outreach and communication in support of these initiatives. This must be a collaborative effort with industry and education. Elements to be included in this plan are:
  - Representatives from both education and industry must participate in the outreach efforts.
  - The plan must include working with K-12 students to get them involved and interested.
  - It must have a common, unified, fact-based message.
  - The message must be delivered to all schools in the effected region, not just selected schools.
  - Outreach must also target the unemployed and the underemployed.
  - It should consider "piggy-backing" with the stimulus initiatives and stimulus funding that may be available to help get the message out and prepare people for the future. People who are looking at jobs right

now can be ready in a few years – but they need to get the required education.

- There must be a coordinate effort to get political support for these initiatives. This must be a combined effort of education, industry and economic development. Communication should be with local, regional and national representatives. There must be one voice and one vision with regards to this effort. The message must be that this is an investment in the future and not just education for the sake of education. It is education and training what will produce a competent job force and improve economic development in the area.

- Not everyone needs to get a degree right away. There can be a progression of education starting with some courses, a certificate program or a two year degrees from technical and community colleges. Progression can then be made in the future to obtain a Baccalaureate degree.

- Funding for these initiatives is required to ensure success. Sources for funding should include ARRA (stimulus funds). STEM grants from the National Science Foundation, DOE-EM (including direct discussions with Ines Triay), other DOE organizations such as Nuclear Energy (NE) and Office of Science (SC), Nuclear Regulatory Commission, direct funding from nuclear employers, State and local governments and the South Carolina Center for Research.

- There are other groups and organizations that need to be involved in this effort. The following are groups that should be contacted to determine their interest in participating in or supporting this initiative:
  - Local craft unions
  - K-12 educators and counselors
  - Parents and Parent organizations

- Other consortia such as Carolinas Nuclear Cluster, the Nuclear Energy Institute, the CASEnergy Coalition and the Center for Energy Workforce Development
- Department of Commerce
- Economic Development Administration
- Work force investment boards

Path Forward

The following were identified by the group as near term actions that should occur:

- A summary of the results of the Summit will be developed and provided to all participants.

- The SRSCRO should take a leadership role to coordinate and manage this initiative.

- An implementation plan should be developed based on the recommendations from the Summit to integrate and prioritize the recommendations and identify specific action items and schedules to move forward.

- The implementation plan should include the use of sub-teams to help identify and work on specific areas that will be addressed. The full group should get together after the subgroups have had an opportunity to work the issues.

ATTACHMENT ONE
Workforce Summit Attendees

Participants

Andrew Bouldin - Southern Nuclear
Anne Carmichael - University Of South Carolina-Salkehatchie
Ernie Chaput - Aiken -Edgefield Economic Development Partnership
Randy Collins - Clemson University
Nick Delaplane - US Department Of Energy - DOE-SR
William Edwards - Georgia Power Company
Bob French - Parsons
Gemma Frock - Aiken Technical College
Rick Hall - Augusta Technical College
Thomas Hallman - University Of South Carolina-Aiken
Andrew Hauger - Augusta State University
Mark Himelberger - Shaw Construction
Fred Humes - Aiken -Edgefield Economic Development Partnership
Anna Johnson - Shaw Areva - Mox
Jamil Khan - University Of South Carolina
Travis Knight - University Of South Carolina
Scott Macfarland - SCE&G
Charles Malarkey - Savannah River Nuclear Solutions
Michael Mikolanis - US Department Of Energy - DOE-SR
Marc Miller - Augusta State University
Bill Pirkle - University Of South Carolina-Aiken
Brian Powell - Clemson University
Bill Robinson - Southern Carolina Alliance
JoAnne Robinson - Augusta Technical College
Derek Stone - Paine College
Michael Thomas - US Department Of Energy - DOE-SR
Rob Trimble - Savannah River Nuclear Solutions
John Waddell - Denmark Technical College
Susan Winsor - Aiken Technical College

Staff

Maureen Bergstrom – Aiken Technical College
Mike Butler - Consultant, 360 Marketing/PR Store
Jake Lefman - Booz Allen Hamilton
Anne Manttari- SRS Community Reuse Organization
Rick Mcleod - SRS Community Reuse Organization
Neil Midkiff - Booz Allen Hamilton
Mike Schoener - MAS Consultants Inc

Observers

Ron Bielewicz - Savannah River Nuclear Solutions
David Jameson – Vice Chair, SRSCRO and Greater Aiken Chamber Of Commerce