

INTRODUCTION TO NUCLEAR POWER GENERATION WORKFORCE DEVELOPEMNT

FREE WORKSHOP WITH A \$400 STIPEND

AT THE CAMPUS OF ALBANY STATE UNIVERSITY

Monday July 25 – Friday July 29

**SPONSORED BY:
ALBANY STATE UNIVERSITY**

**SUPPORTED BY A GRANT FROM:
US NUCLEAR REGULATORY COMMISSION
MINORITY SERVING INSTITUTION PROGRAM**

ELIGIBILITY AND REGISTRATION

In order to qualify for this certification workshop you must be a US citizen or a permanent resident. You must also be a full time employee of the institution you will be representing, faculty or staff. You may also be a student of good standing, senior or graduate student, and plan to stay at the institution for at least one more year.

Each participating institution can send as many applications as they wish, however, only 4 to 6 applicants may be selected from each. All applications must be received by Albany State by the close of business day Friday June 30, 2011.

Follow the instructions for application submittance at the end of the registration form.

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FREE ROOM AND BOARD
AT THE CAMPUS OF ALBANY STATE UNIVERSITY**

REGISTRATION FORM

PAGE 1 of 2

NAME: _____ DATE: _____

Address _____

Work phone _____ Personal Phone _____ e-mail _____

Institution Represented _____

Institution address _____

Faculty ____ Staff ____ Undergraduate Student ____ Graduate Student ____

Date of graduation _____ US Citizen ____ Perm Resident ____ US Vet ____

Department: _____ Dean or Manager _____

Work Position _____ Responsibilities: _____

_____ Years in position _____

Full time ____ Part time ____ Minority: Yes ____ No ____

Reason(s) for applying for this workshop:

Has your school received any nuclear related grants in the past? Please explain:

Applicant's signature _____ Date _____

Page 1 of 2

Please, make sure you complete the second page!

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REGISTRATION FORM

PAGE 2 of 2

NAME: _____ DATE: _____

By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances and agree to comply with any resulting terms if I accept the award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001).

I also agree to comply with the workshop completion requirements which are to be present at least 80% of the class time, fill all related quizzes, have at least a 75% correct answers, and actively participate in the class project. If I fail to meet these requirements and terminate my participation without acceptable excuse, I agree to reimburse Albany State the cost of the course which is \$1800.

Applicant's signature _____ Date _____

Dean or Department Manager _____ Date _____

Please spell signed name and position: _____

For ASU use only:

Applicant Accepted: Yes _____ No _____ Notified and Registered Yes _____ No _____

Date of Registration _____

ASU – OSP Director _____ Date _____

Applicant: Please mail, Fax, or e-mail complete and signed form to ASU – OSP no later than Friday June 30, 2011. You will be notified by July 10, 2011 of your acceptance: Mrs. Melisa Widner, OSP - Albany State University, 504 College Drive, Albany, Georgia 31705. Voice: 229-430-3690, Fax: 229-430-3691, mrwidner@asurams.edu.

Note: For mileage reimbursement you may apply at the workshop.

-- FREE WORKSHOP --

**INTRODUCTION TO NUCLEAR POWER GENERATION
WORKFORCE DEVELOPMENT PROGRAM**

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Minority Serving Institutions Program**

AT THE CAMPUS OF ALBANY STATE UNIVERSITY

MONDAY JULY 25 – FRIDAY JULY 29. 2011

Learning objectives:

- **Become familiar with the nuclear industry, the legal requirements of licensing nuclear plants, the major industry players, and power plant layout.**
- **Become knowledgeable about the health and safety issues that they are expected to encounter in the nuclear work environment, including radiation protection, fire protection, OSHA requirements and emergency planning**
- **Understand the economic, technical and environmental differences between nuclear power generation and other types of power generation, including coal fired plants, hydroelectric dams, solar thermoelectric and direct generation, wind mills, power storage facilities, geothermal and others**
- **Learn about industrial accidents and how they compare with those in the nuclear industry (including the situation in Japan), risk assessment of different types of generation, and risk and public policy in power generation**
- **Understand the workforce needs, business, educational and training opportunities as they become available with the growth of the industry**
- **Train educators to use innovative thinking tools and the techniques which will significantly strengthen their skills as communicators, team builders and coaches to their students for NPG career opportunities**
- **Teach participants to use creativity methods to determine their institutional strengths and how they can be used to seek grants from the NRC, DOE, NSF and other government agencies within the realm of the Albany State NPG Workforce Development Program.**

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CLASS SCHEDULE & COURSE CONTENT OUTLINE

Sunday July 24, 2011 Registration 6:00pm Dinner 7:00pm

Monday July 25, 2011 Registration 8:00am

Begin Classes, Welcome 9: 00am

9:30am to 12:00 pm

Harry Vardis, KSU

MODULE 1 Understanding how to "think out of the box" in order to explore opportunities in grants, jobs and careers in the field of clean energy.

12:00pm to 1:00pm Lunch

1:00pm to 3:00pm

Clayton Smith, FLUOR

MODULE 2 Introduction to Nuclear safety mentality
Quality Assurance Concept and Worker Certifications

3:00pm to 5:00pm

Tony Sideris, PE

MODULE 3 History and Public Perception of Nuclear Power

- Brief History of Nuclear Energy
- Brief History of Nuclear Power
- Brief History of Nuclear Regulation
- The widespread misunderstandings about nuclear power
- The nightmarish scenarios of spent fuel
- Coal versus nuclear fuel

MODULE 4 NPP Operating Experience and Public Policy

- Notable nuclear accidents: TMI and Chernobyl
- Comparison with other industrial accidents
- Risks and Public Policy

Tuesday July 26, 2011

9:00am to 12:00pm

Tony Sideris

MODULE 5 Comparison to other power sources

- Definition for Base Load Transmission
- Renewable energy sources - overview
- Solar, wind and wave generation economic and technical comparisons
- Power storage and peak power facilities

MODULE 6 Uranium Management, Production & Market

Dale Jackson, Tetrattech

- Uranium Enrichment
- Uranium – spent fuel cycle
- Spent fuel reprocessing
- Major market players

MODULE 7 Augusta Tech Nuclear Workforce Program

Jo Anne Robinson, Dean

- Workforce needs and program initiation
- Courses, degrees and certifications
- Roles of the NRC, INPO and Southern company
- Program future plans

12:00pm to 1:00pm Lunch

1:00pm to 2:00pm

Jimi Yerokum, NRC

MODULE 8 US Nuclear Regulatory Commission Region II

- Organization and geographical layout
- NRC Mission and objectives
- Regulation and inspections
- New construction regulatory oversight
- Inspection, Testing, Analysis, Acceptance and Certification

2:00pm to 3:00pm

Dwayne Cheatom

MODULE 9 OSHA Requirements

- Legal standards of the Code of Federal Regulations
- Identification of risks
- Risk assessment process
- Compliance and Inspections

3:00pm to 5:00pm **Class project exercise**

Harry Vardis, KSU

Tools to use in order to write more focused proposals from new perspectives. Define subjects.

Wednesday July 27, 2011

9:00am to 12:00pm

Tony Sideris, PE

MODULE 10 Reactor Operation

- Basic reactor physics
- Basic reactor design
- Reactor control systems
- Reactor operation
- Maximum hypothetical accident

MODULE 11 Physical plant layout. Power island buildings

- Reactor building
- Basic Pressurized Water Reactor
- Basic Boiling Water Reactor
- Different types of nuclear reactors and new advanced plants

MODULE 12 NPP Basic Engineered Safety Concepts

- Multiple safeguard barriers
- Containment structure and reactor building
- Security concepts
- Procurement of NPP components

MODULE 13 Fire Protection for NPP's

- Fire definitions
- Material flammability
- Industry experience
- Fire prevention systems
- Fire extinguishing systems

12:00pm to 1:00pm Lunch

9:00am to 12:00pm

Tony Sideris, PE

MODULE 14 Basic Radiological Concepts

- What is Radiation
- Radiation contamination
- Manmade and natural radiation sources
- Personnel exposures
- Measurement units of radiation
- Radiation accidents
- ALARA concepts

MODULE 15 Emergency Planning

- WASH 1400 Requirements
- Legal Requirements
- TMI Lessons Learned
- Chernobyl lessons learned
- Fukushima lessons learned
- EP Organization
- Program, Training & Exercises

Thursday July 28, 2011

9:00am to 12:00pm

Tony Sideris

- MODULE 16** Special NPP QA / QC requirements
- Title 10 CFR Part 50, Appendix B
 - ASME NQA-1
 - ASME BPV Code, Section III, Subsection NCA
 - ISO 9000
 - ASME nuclear accreditation
 - ITAAC – New approach to regulatory oversight
- MODULE 17** Major Nuclear Industry Players
- Owners
 - Regulator
 - Nuclear Steam Suppliers
 - Architect-Engineering firms
 - Constructor firms
 - Major fabricators
 - Nuclear Industry Organizations
- MODULE 18** Future of Nuclear Power in the US and the World
- Licensing status of NPP's in the US
 - Plans for NPP's in other countries
 - Workforce needs and development
 - Business opportunities and marketing approach

12:00pm to 1:00pm Lunch

1:00pm to 2:00pm New Generation Scalable Reactors Juan Villarreal, B&W

2:00pm to 5:00pm Harry Vardis, KSU

- MODULE 19** Innovation for educational business development
- Introduction to the element of innovation
 - Process of innovation
 - People and how they can be innovative
 - Environment for implementation
 - Application to the NPG program knowledge
 - Development of examples for future proposals

Friday July 29, 2011

9:00am to 12:00pm

MODULE 20 Creative problem solving

- Introduction to Creative Problem Solving
- FourSight as a tool to team creation and development
- The two phases of creative thinking
- Prototyping an idea
- Team productivity
- Tools and techniques

12:00 to 1:00pm Lunch

1:00pm to 2:00pm TVA's workforce needs for Bellefonte NPP

Malcolm Estrada, TVA

2:00 to 5:00pm

MODULE 21 Workshop completion

- Review of workshop learning objectives
- Class projects completion
- Class projects presentations
- Certifications
- Demobilization

Tony Sideris, Harry Vardis

End of workshop