Program Overview

- NRC Education Grant Programs: $5M & $15M
  - FY 2008 Language - $15M
    - Scholarships, Fellowships, Faculty Development and Trade Schools
    - Focus is on Nuc. Engr., HP, and Rad. Chem.
The Energy Policy Act of 2005 directed NRC to:
“support courses, studies, training, curricula, and disciplines pertaining to nuclear safety, nuclear security, nuclear environmental protection, and other fields that the Commission determines to be critical to NRC’s regulatory mission.”
Program Authorization - $15M Program

• Yearly Congressional Language (2008 on) included funding to:
  “support education in nuclear science, engineering, and related trades to develop a workforce capable of the design, construction, operation, and regulation of nuclear facilities and the safe handling of nuclear materials.”

• Benefit the nuclear sector broadly, not primarily NRC
How do we do what the legislation requires?

- **Scholarships** – 2 years, $10,000 per student per year, awarded to institution ($200,000)
- **Fellowships** – 4 years, $50,000 per student per year, awarded to institution ($400,000)
- **Faculty Development** – 3 years, $150,000 per year plus institution match ($450,000 + $150,000)
- **Trade schools/community colleges** – 1 year, $10,000 per student ($150,000)
- **Curriculum development** – ~ $200,000 over 2 years
HP/Rad. Chem. Awards – 2009 & 2010

- 2009 HP – 25 awards totaling $3.76M
- 2009 Rad. Chem. – 4 awards totaling $. 8M
- 2010 HP – 19 awards totaling $4.0M
- 2010 Rad. Chem. – 5 awards totaling $1.09M

- 2009: 24% of funding; 28% of awards
- 2010: 26% of funding; 25% of awards
Significant Developments

• Support over 500 students annually
• FY 2007-2010; support 108 institutions in 33 states, DC and Puerto Rico
• Re-emphasized participation of:
  - Trade schools and community colleges
  - Minority serving institutions
  - Health physics and radiochemistry
• Continued cooperative work with DOE and NNSA on the Integrated University Program
What’s Happening

• Student population growing
• New university nuclear programs beginning
• Government grant funds leveraged
• Partnering occurring
• Increasing interest by trade schools and community colleges
Observations

- Grant Applications far exceed available funds
- Currently, the greatest near-term workforce needs appear to be in the trade and craft areas
- Outreach to pre-college students is essential to enable students to make informed decisions about pursuing the study of nuclear technology
- Success may depend, for the foreseeable future, upon continued government investment in nuclear education
Education - Not Promotion

- As a regulator, NRC’s educational reach is more limited than other agencies, such as DOE
- Congress has provided NRC funding for workforce development but not necessarily physical infrastructure support
- NRC dilemma: Balance educational needs of the nuclear sector with regulatory mission
- NRC is unable to fund an educational program that will satisfy all of the Nation’s nuclear education infrastructure needs
Examples of Other Education Areas that Require Support

- University research reactors
- Internships for students – gov’t, labs and industry
- Nuclear engineering/science research grants
- International – students, faculty, and curriculum
- Pre-college outreach programs – i.e., DOE’s “Harnessed Atom”
- Cooperative programs among universities, Federal agencies and private sector
- A nationwide survey to gauge the expected demand for nuclear trained workers (engineers, health physicists, radio-chemists, the trades, etc.), and the demographics of the current workforce
Pitfalls - Lessons Learned

- Funding discontinuity undermines program
- Loss of funding = loss of interest
- Regulatory body can educate but not promote
- Coordination among government, industry, and universities is essential for best use of limited resources
- Balance workforce supply with demand to avoid over-populating the field
- Outreach efforts are important
Hurdles

- Scope limitations of current NRC program
- Annual funding uncertainty
- Better understanding of the workforce in terms of personnel and physical infrastructure needs
- Building relationships among universities to avoid duplication of effort
- Within NRC, efficiency in processing grants and responsiveness to stakeholders
Possible New Directions

- University Faculty exchanges with NRC (FD recipients), national labs, and internationally
- Summer internships at national labs and international facilities
- Regional university partnerships to include minority institutions and smaller schools
- Focused research on topics “relevant” to industry and NRC – not “mission-related” more “problem-related”
- Outreach to pre-college students on nuclear safety/technology education
- Increased funding
What Can NRC Offer Students?

- “Best place to work” in the Federal Government
- Scholarships and fellowships
  - $10,000 to $50,000 per year for up to four years
- Student internships (usually summer)
- Student Career Experiences Program (Co-ops)
  - Upon completion (640 hours) student is eligible for non-competitive appointment
- Nuclear Safety Professional Development Program
  - Two year program for exceptional recent grads
  - Three tracks, Engr., HP, and Scientific
  - Two 90 rotational assignments
  - Promoted each year and placed in career ladder position
Conclusions

- Federal nuclear education programs, in cooperation with other entities, appear to be developing a sufficient pipeline of personnel to meet U.S. needs
- Funding discontinuity may undermine confidence in Federal commitment to nuclear education
- Absent retirements and new builds, oversupply could occur in some areas
- “Supply and Demand” survey being conducted by DOE should help identify where education resources should be focused
- While NRC grant program has been successful and well received, broader mission scope would enable increased assistance to un-served and underserved
Contacts - Grants Office

- John Gutteridge
  - john.gutteridge@nrc.gov

- Nancy Hebron-Isreal
  - nancy.hebron-isreal@nrc.gov

- Randi Neff *
  - randi.neff@nrc.gov

- Tanya Parwani-Jaimes
  - tanya.pawani-jaimes@nrc.gov

- Mike Atsalinos
  - mike.atsalinos@nrc.gov

* On rotation from grant program