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United States Nuclear Regulatory Commission
Protecting People and the Environment

2012 TRTR Annual Meeting

NRC's Nuclear Education Grant Programs

September 25, 2012

San Diego, California

Mary Muessle

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OCHCO - Types of Grants

- **Curriculum Development**

  (both 4- and 2-year educational institutions)

  – For development of new courses or revamping of previous/existing ones

  – 2 years / up to $200,000

- **Faculty Development**

  (4-year educational institutions)

  – For probationary, tenure-track faculty during the first 6 years of their career and new faculty hires

  – 3 years / up to $600,000

  ($450,000 from NRC; $150,000 institution match)

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Types of Grants (con't.)

- **Scholarships**

  (4-year educational institutions)
  - For undergraduate students
  - 2 years / up to $200,000
  - Maximum of $10,000 per student per year

- **Fellowships**

  (4-year educational institutions)
  - For graduate students
  - 4 years / up to $400,000
  - Maximum of $50,000 per student per year

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Types of Grants (con't.)

- **Trade School & Community College Scholarships**

  (2-year educational institutions)

  – For undergraduate students at 2-year educational institutions
  – 2 years / up to $150,000
  – Maximum of $10,000 per student per year

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NRC Service Agreement

- Each scholarship and fellowship recipient must maintain minimum required GPA, as established by the NRC, and serve 6 months in nuclear-related employment for each year of academic support
- Failure to comply with the agreement may trigger repayment from recipient
- Service agreement is in the process of being modified to be less restrictive

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Curriculum Development Grants – Focus Areas

- **Nuclear Engineering**
  - Criticality safety courses for nuclear professionals
  - Thermal-hydraulics model development
  - Reactor physics
  - Nuclear power plant safety, licensing, and regulation
  - Nuclear power plant design and operations (including operating and emergency operating procedures)
  - Fuel Performance
- **Radiochemistry and Radiobiology**

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Curriculum Development Grants – Focus Areas (con't.)

- **Health Physics**
  - Health physics modeling
  - Dosimetry and measurements
  - Environmental transport, dissolution, and migration
  - Decontamination and decommissioning
  - Reprocessing, recycle chemistry, and technology courses
- **Materials and Mechanical Engineering**
  - Welding principles and non-destructive examination (NDE) technology
  - Management of aging plants (components and systems)
  - Material corrosion

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Curriculum Development Grants – Focus Areas (con't.)

- **Reliability and Risk Analysis**
  - PRA (Levels 2 & 3)
- **Electrical Engineering**
  - Power generation and distribution or electrical components
  - Digital instrumentation and control systems
- **Safeguards and Security**
  - Material control and accountability courses
  - Vulnerability analysis

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Curriculum Development Grants – Focus Areas (con't.)

- **Human Factors and Human Reliability**
  - Human factors modeling
  - Applied-experimental psychology, specializing in human performance and human factors
- **Fire Protection Engineering**
  - Fire modeling for fuel cycle facilities
  - Fire modeling for nuclear power plants
- **Nuclear Waste**
  - The fuel cycle
  - Nuclear waste forms
  - Disposal methods
  - Chemistry of nuclear waste

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Curriculum Development Grants – Focus Areas (con't.)

- **Computational Methods**
  - Application to nuclear safety
  - Model development
  - Computer code development and maintenance
  - Computational methods using alternative computer operating systems

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Faculty Development Grants – Focus Areas

- Nuclear Engineering
- Health Physics
- Radiochemistry
- PRA (Levels 2 & 3)
- Other related disciplines

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Program Authorization

- **Energy Policy Act of 2005 - $5M (Curriculum Development)**

  "…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."

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Program Authorization (con't.)

- **Congressional Language - $15M**

  (Scholarships/Fellowships, Trade School / Community College Scholarships, Faculty Development)

  "Funding ….includes $15,000,000 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."

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NRC Grants Funding by Year

- FY 2007 - ~$4.7M
- FY 2008 - ~$20M
- FY 2009 - ~$20M
- FY 2010 - ~$20M
- FY 2011 - ~$10M
- FY 2012 - ~$19M
- FY 2013 - $4.7M (current request)

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Plans for FY 2013

- Funding remains uncertain
- Funding Opportunity Announcements (FOAs) posted to www.grants.gov on July 26, 2012
- Application Due Dates
  - October 3, 2012 – Curriculum Development
  - October 5, 2012 – All others
- Peer reviews will occur late fall 2012
- Anticipated award date is April 2013

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Additional information on grant programs:

http://www.nrc.gov/about-nrc/grants.html

IF ANY QUESTIONS, PLEASE DON'T HESITATE TO CONTACT US!

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RES Grants / Cooperative Agreements

- **NRC's Office of Nuclear Regulatory Research (RES) also offers grants and cooperative agreements for the following:**

  "Funding under this program includes, but is not limited to, research in support of nuclear materials safety, radioactive waste safety, fire safety and testing, digital instrumentation and controls, advanced very high temperature gas-cooled reactors, probabilistic risk assessment training, high temperature gas reactor thermal hydraulics, and reactor physics.

  RES shows a high regard for institutions and organizations that propose to conduct independent experiments and analyses, develop technical basis for supporting realistic safety decisions, and the evaluation of safety issues involving current and new designs and technologies.

  Additionally the RES financial assistance program funds high quality conferences/scientific meetings, which facilitate the coordination, exchange, and /or dissemination of information in any of the previously listed topics or significant topics of interest, in support of nuclear research. "

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