

Integrated University Program Coordination Meeting

November 20, 2009

Final Minutes

Nuclear Regulatory Commission (NRC)
Department of Energy (DOE) - Office of Nuclear Energy
DOE - National Nuclear Security Administration (NNSA)



Background

A follow-up meeting between the Nuclear Regulatory Commission's (NRC's) Deputy Executive Director for Operations, NRC representatives from the Office of Human Resources, Office of Administration, Office of the General Counsel and representatives from the Department of Energy (DOE), Office of Nuclear Energy and DOE, National Nuclear Security Administration (NNSA), Office of Nonproliferation and Verification Research and Development; was held on November 20, 2009 at NRC headquarters, to discuss the Integrated University Program.

Directors and staff from each agency continued discussions on the implementation of § 313 of the Omnibus Appropriations Act of 2009 (H.R.1105) for Fiscal Year 2009, and the Conference Report to accompany Energy and Water Development and Related Agencies Appropriations Act 2010 (H.R.3183) for the NRC for Fiscal Year 2010. These Appropriations established the Integrated University Program for the purpose of supporting nuclear-related activities at universities. Each organization received \$5 million to jointly implement and coordinate the Integrated University Program for "multiyear research projects that do not align with programmatic missions but are critical to maintaining the discipline of nuclear science and engineering." Coordination of these jointly implemented grant funds, totaling \$15 million, was the subject of this meeting.

Summary

The three organizations agreed that they share mutual goals and objectives regarding support of university nuclear science and engineering programs. Grants awarded in Fiscal Year 2009 by each organization under this program serve a common interest and meet the Integrated University Program's objectives. The three organizations also agreed to share the grant information awarded under this program.

Topics to consider for future collaboration include:

- Conducting briefings of Congressional staff and the Office of Management and Budget (OMB) regarding university nuclear programs
- Developing suitable metrics to measure progress and success
- Conducting a joint nuclear industry workforce needs analysis
- Performing an assessment of university research and development (R&D) infrastructure to determine if there are special needs for certain science disciplines to support nuclear energy
- Coordinating university programs activities with other related federal agencies, including the Department of Education.

NRC

In Fiscal Years 2009 and 2010, NRC received \$15 million total – \$10 million was to support university research and development in areas relevant to the organization’s mission and \$5 million was to support a Nuclear Science and Engineering Grant Program that will support multiyear research projects that do not align with programmatic missions but are critical to maintaining the discipline of nuclear science and engineering. These grants will fund faculty development, scholarships and graduate fellowships, and trade school scholarships. NRC awarded 59 awards from 130 applications as a result of the Fiscal Year 2009 solicitation.

The NRC discussed the grants that were awarded for the \$5 million program in Fiscal Year 2009. They were for faculty development grants valued at \$100,000 per year for three years, meet the objectives of the Integrated University Program. These grants are intended to attract and retain junior, untenured faculty members with less than six years experience, as well as to set up research laboratories and develop curricula. Awardees are eligible for an additional \$50,000 per year from the NRC for a total of \$450,000 from NRC over three years if their institutions contribute a matching amount. These grants are not NRC mission-related and although they are not directed to a specific project, they support research projects and are “critical to maintaining the discipline of nuclear science and engineering.” The NRC proposed to use a similar scope of grants for Fiscal Year 2010.

NRC also discussed the type grants that were awarded in Fiscal Year 2009 for the \$10 million portion of the NRC’s authorization. These grants supported fellowships, each valued at \$50,000 per year for four years (up to \$400,000 per year). Universities can also receive up to \$200,000 to fund two-year undergraduate scholarships of \$20,000 per year. Trade schools and community colleges received up to \$150,000 for one-year scholarships of up to \$10,000 per student. Fellowships, university scholarships, and trade school scholarships are awarded to the institution; individual students are not eligible to apply. However, each student recipient must demonstrate satisfactory academic progress and is required to work six months in nuclear-related employment for each year or partial year of NRC support.

All NRC grants are subject to a competitive peer review process, similar to that used by DOE-NE and DOE-NNSA, and are fully funded in the initial year to avoid creating unfunded commitments in the years following the grant award.

DOE-NE

DOE-NE University Programs received about \$50 million from ‘set-asides’ from other DOE-NE research and development programs to directly support these missions, and \$5 million in direct appropriations for the Integrated University Program, for a total funding of about \$55 million. To award this funding in Fiscal Year 2009, DOE-NE issued four separate competitive funding opportunity announcements through the Nuclear Energy University Programs (NEUP), and selected for award 71-two- or three-year research and development (R&D) projects totaling \$44 million, 29 Infrastructure grants ranging from \$150,000 to \$300,000, 70- \$5,000 one-year scholarships, and 17-\$150,00 three-year fellowships. Most of

the award selections have been made and all of the awards for the four solicitations are planned to be issued by the end of the fiscal year.

Sixty-two of the 71 R&D projects are mission-related and support DOE research in the Advanced Fuel Cycle Initiative (AFCI), Generation IV Nuclear Energy Systems, and Light Water Reactor Sustainability (LWRS) programs. Nine of the 71 R&D projects totaling about \$4.5 million are “investigator-initiated R&D” projects and are not considered mission-related. These projects will meet the objectives of the Integrated University Program. The remaining \$450,000 of the \$5 million was provided to support three fellowship awards, fully funded at \$150,000 each over three years. DOE-NE planned on using a similar process for awarding the grants in Fiscal Year 2010.

Like the NRC awards, DOE-NE is fully allocating the cost of multi-year awards up front to avoid creating unfunded “mortgages.”

DOE-NNSA

In Fiscal Year 2009, DOE-NNSA’s Office of Nonproliferation & International Security (NA-24), received funding of \$5 million to support the Integrated University Program and worked closely with DOE-NE to allocate the funds. Due to the late funding appropriation in Fiscal Year 2009, DOE-NNSA was not able to include this scope under its own request for proposals. Both DOE-NE and DOE-NNSA agreed DOE-NNSA would fund proposals from the 216 proposals submitted under the DOE-NE R&D solicitation (discussed above under DOE-NE). DOE-NNSA performed its own review of the proposals submitted under the DOE-NE request and selected ten proposals based on the quality of the proposal. These awards support research projects that do not directly align with DOE-NNSA’s programmatic mission but do help maintain university-based nuclear science and engineering. The Idaho National Laboratory’s Center for Advanced Energy Studies will be executing these awards with oversight from DOE-NNSA.

For Fiscal Year 2010, execution for the entire \$15 million in total Integrated University Program funding for NNSA was placed with the Office of Nonproliferation and Verification Research and Development (NA-22) and not split between NA-22 and NA-24, as had been done in Fiscal Year 2009. DOE-NNSA plans to use a different process for awarding the grants in Fiscal Year 2010.

Discussion and Future Opportunities

The three organizations determined that they met the requirement of §313 in Fiscal Year 2009 to collaborate on a Integrated University Program, based on the timing of the Omnibus Appropriations Act of 2009 (H.R.1105), and were able to implement and coordinate different aspects of the Integrated University Program for “multiyear research projects that do not align with programmatic missions but are critical to maintaining the discipline of nuclear science and engineering.” They also agreed that this meeting and minutes constitute documentation of coordination efforts to implement the Integrated University Program in Fiscal Year 2010 and to establish a common plan for the future.

The three organizations also discussed the needs for nuclear energy science and engineering disciplines and research now and in the future and agreed that there is a need to (1) develop metrics to measure success of these grant programs and (2) perform an analysis of the current state of the workforce and education infrastructure in this area. As background, in January 2007, the American Nuclear Society, Special Committee on Federal Investment in Nuclear Education, prepared a report outlining the critical need for continued federal support of the U.S. nuclear engineering education enterprise¹. Then in June 2008, the American Physic Society Panel on Public Affairs, Committee on Energy and the Environment, concluded “*the federal government should assume significant responsibility for educating the next generation of nuclear scientists and engineers.*”² To determine where federal funding may be best invested to meet the recommendations of these reports, DOE proposed a joint effort for DOE-NE, DOE-NNSA, and NRC to conduct two studies over the next year to better understand the current state of the nuclear workforce and educational infrastructure. A workforce analysis would assess the current and projected nuclear related workforce (industry, suppliers, constructors, national laboratories, etc.) and identify potential emerging gaps. This would enable strategic decision making on whether federal investments in workforce training and development are necessary and if so, where the focus should lie (undergraduate, trade schools, graduate). An infrastructure assessment would entail visiting nuclear facilities at colleges and universities to evaluate their existing equipment and identify projected needs.

NRC, DOE-NE, and DOE-NNSA discussed the status of FY2010 Programs:

The agencies each provided information on their respective funding announcements and plans for processing and issuing grants in the Integrated University Program for Fiscal Year 2010.

NRC

NRC issued three separate funding opportunity announcements under the total \$15 million program for grants in support of nuclear science and engineering education on October 16, 2009. These grants will support scholarships and graduate fellowships, and trade school scholarships, and faculty development research. Applications for scholarships and graduate fellowships, and trade school scholarships are due December 16 and faculty development on December 22, 2009. Peer reviews will be held in February. Award recommendations will be announced in April and final awards issued in May. The faculty development program (\$5M) will support the research and development goals of the Integrated University Program.

¹ Nuclear’s Human Element: Defining the Federal Government’s Role in Sustaining a Vibrant U.S. University-Based Nuclear Science and Engineering Education System for the 21st Century, Revised, Feb 2007.

² Readiness of the U.S. Nuclear Workforce for 21st Century Challenges.

<http://www.aps.org/policy/reports/popa-reports/upload/Nuclear-Readiness-Report-FINAL-2.pdf>

DOE-NE

DOE-NE issued funding opportunity announcement for pre-applications for research and development on October 9, 2009. Pre-applications were received November 10, 2009. R&D full proposals are due in February 2010. The scholarship and fellowship announcement will be issued in January 2010 with applications due in March 2010. The three infrastructure funding opportunity announcements will be issued in February 2010 with applications due in March 2010. DOE-NE plans to use \$5M to fund scholarships and fellowships to support the goals of the Integrated University Program. Panel reviews of the scholarship and fellowship applications will be held in March-April 2010 timeframe with awards announced in May 2010.

DOE-NNSA

DOE-NNSA's Office of Nonproliferation and Verification Research and Development notice of intent was issued in June 2009 and announcement was issued in July. The announcement closed in August. Peer reviews are complete and recommendations have been made. The announcement covered 5 topic areas. Each award will be \$250K - \$350K per year, for three years. Some will be fully funded in Fiscal Year 2010, and some will be incrementally funded with funds in FY10, FY11, and FY12. DOE-NNSA received 100 proposals across five topic areas: 1) Remote Sensing 2) Simulation Algorithms and modeling 3) Radiation Detection and Advanced Materials 4) Radiological Source Replacement and 5) Advanced Safeguards. Awards will be announced in December 2009.

Methods discussed to integrate the FY 2010 programs among NRC, DOE-NE and DOE-NNSA

The organizations discussed how they can continue to coordinate the integration of all three programs. It was stated that DOE-NE will issue Scholarship and Fellowship awards. NEUP/INL says that their \$5M will go towards Investigator R&D projects. The language of IUP is for basic science. Dr. Miller, the Director of NE, desires to have "Mission relevant" investigator related as a part of the grants, tied to NE's overall mission. NRC will award Integrated Research awards as part of the Faculty Development awards, while NNSA will issue Global Nuclear Security Research awards. NNSA says their funds are going toward global nuclear security, radio chemistry and health and security. NRC agreed to coordinate with DOE-NNSA to ensure there is no duplication in awards with Nuclear Security. All organizations agreed to sharing recommendation lists between all agencies to guard against overlap in grants. South Carolina University Research Education Foundation (SCUREF) thinks it is important to share information on fellowship award recommendations. Additionally we agreed we would take credit for how we are already working together by attending each others grant workshops which gave us the opportunity to share the different programs with the community. It was a consensus that a joint announcement was not beneficial. If a recipient receives an award from multiple agencies for the same area, it was suggested that the first agency to make the award would be controlling, and the other agency may need to reconsider their award. This issue is being evaluated. The agencies are taking measures to insure there is no duplication.

IUP Actions

- NE will issue Scholarship and Fellowship grants
- NRC will issue Faculty Research grants
- NNSA will issue Global National Security Research grants
- NRC and NNSA coordinate for Security Research and Development to ensure no duplication
- Acknowledge in future reports that the programs are sharing information with the community by providing Grant Workshops where NRC and DOE attended each others event and spoke regarding the each agencies grant programs
- NRC, DOE-NE will share a list of scholarship and fellowship recipients
- NRC and NNSA will coordinate to ensure no duplication in the area of Global Nuclear Security
- Develop suitable metrics to measure progress and success
- A third meeting in April 2010 to discuss collaboration on the FY2010 Integrated University Program. NNSA will host this meeting.

For the Department of Energy,
Office of Nuclear Energy:

R.Smith-Kevern concurrence received via email on 1/13/10
Rebecca Smith-Kevern _____ Date

For the Nuclear Regulatory
Commission:

/RA/ _____ 1/15/10 _____
Bruce Mallett _____ Date

For the National Nuclear
Security Administration:

E.Watkins concurrence received via email on 1/14/10
Edward Watkins _____ Date

Attachment 1 – Agenda

Integrated University Program Meeting

**Nuclear Regulatory Commission Bldg
11555 Rockville Pike
EDO Conference Room, Rockville, MD
November 20, 2009
1:30 – 3:30**

1. DOE and NRC discuss status of FY2010 programs
 - NRC discussion of announcements, review schedules
 - and proposed dates for issuance of grants
 - DOE (NNSA and NE discussion of announcements, review
 - schedules and proposed dates for issuance of grants

2. Methods to integrate the FY 2010 programs among DOE and NRC
 - Proposed integration by subject areas and/or disciplines of science and engineering
 - Sharing reviewers for application reviews
 - Elimination of duplication of awards
 - Aiding geographic and type school diversity
 - Balancing diversity compared to how we did in FY2009
 - Developing suitable metrics to measure progress and success
 - Conducting a joint nuclear industry workforce needs analysis
 - Completing a DOE/NRC “Joint” announcement for FY2011

3. Decisions for each agency’s path forward
 - What is success this year
 - Report to Congressional oversight committees
 - Briefing of DOE and NRC internal stakeholders

Attachment 2: Attendees

**Nuclear Regulatory Commission Bldg.
Friday, November 20, 2009**

Name	Affiliation	Phone	email
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