Pre-release Information - Nuclear Energy University Programs (NEUP) Integrated Research Partnership (IRP) Summaries

***Disclaimer**: This document contains pre-release information supporting an upcoming NEUP request for applications and as such, provides information that is appropriate for planning purposes only. Thus, any and all potential applicants should refer the official Request for Proposals (RFP) when it is released to obtain the full and final official details for this solicitation.*

Purpose – Provide potential applicants with appropriate background information regarding the planned scope for IRPs to facilitate planning in advance of issuance of the NEUP IRP RFP in early FY 2011 (subject to program priorities).

Background - The mission of the Department of Energy's (DOE) Office of Nuclear Energy (NE) is to lead the DOE investment in the development and exploration of advanced nuclear science and technology. NE promotes nuclear energy as a resource capable of meeting the Nation's energy, environmental, and national security needs by resolving scientific, technical, and regulatory challenges through research, development, and demonstration.

NEUP's goal is to support outstanding, cutting-edge, and innovative research at U.S. universities. At the fiscal year (FY) 2011 NEUP Planning Workshop, Dr. Warren Miller, Assistant Secretary for Nuclear Energy, updated the NEUP strategy to include a three component graded approach to its program based upon appropriate program linkage and relevance. The three components are Program Directed (PD), Program Supporting (PS) and Mission Supporting (MS).

Summary - IRPs are the newest element of the NEUP program, and represent the PD component of the NEUP strategy by providing research and development (R&D) solutions that are the most directly relevant to the near-term, significant needs of the NE R&D programs. IRPs complement the other NEUP components, which include PS & MS university-based R&D, PS University Reactor and Research Equipment Infrastructure Upgrades, and MS Student Fellowship and Scholarship Grants.

IRPs will be significant, three-year projects within specific research areas (with the opportunity to extend for three additional years, pending assessment of need, results obtained, and Congressional appropriations). The research areas (IRP RFP scope) will address specific needs, problems or capability gaps identified and defined by the NE R&D programs, and are intended to develop a capability within each area. These projects will be multidisciplinary and require multi-institutional partners.

The following two IRP focus areas will be addressed in the upcoming initial FY 2011 RFP:

- Development of Advanced Reactor Technologies ($2.5M/yr totaling $7.5M)
- Accelerated Aging of Used Nuclear Fuel in Storage ($1.5M/yr totaling $4.5M)

NE has identified these two topic areas as presenting a critical barrier to achieving its goals as defined in the NE R&D Roadmap (Note: a third focus area may be added later in FY 2011.) Within the new NEUP R&D structure, each IRP will comprise a highly collaborative team, spanning multiple scientific, engineering, and, where appropriate, economics and public-policy disciplines. IRPs are to be led by Universities partnering with top talent across the full spectrum of R&D performers—including private industry, non-profits and National Laboratories- to teaming directly with NE internal program specialists. Each IRP is expected to deliver an exemplary product for use within the NE R&D portfolio. IRPs will bring together the skills and talents of multiple investigators to enable fundamental research of a scope and complexity that would not be possible with the standard individual investigator or small group research project. As such, the IRPs will strengthen and complement the existing portfolio of the single Principal Investigator and small group research projects currently supported within NEUP. The IRPs will foster unique scientific collaboration that will be critical to success, and must be backed by a meaningful and sustained investment.