

## **POLICY ISSUE INFORMATION**

November 7, 2007

SECY-07-0198

FOR: The Commissioners

FROM: Luis A. Reyes  
Executive Director for Operations

SUBJECT: PERFORMANCE AND COORDINATION OF THE REGULATORY  
FRAMEWORK FOR THE GLOBAL NUCLEAR ENERGY  
PARTNERSHIP

### PURPOSE:

This paper provides supplemental information, as directed in Staff Requirements Memorandum (SRM) SECY-07-0081, on how the regulatory framework and gap analysis for Global Nuclear Energy Partnership (GNEP) facilities will be performed and coordinated among various U.S. Nuclear Regulatory Commission (NRC) offices.

### SUMMARY:

The staff provided the Commission with options for licensing facilities, associated with the GNEP, in a Commission Paper (SECY-07-0081) in May 2007. The Commission approved proceeding with developing the regulatory framework for licensing facilities associated with the GNEP, as stated in SRM-SECY-07-0081. The Commission directed the staff to:

- Perform a gap analysis for all NRC regulations, to identify changes in regulatory requirements that would be necessary for licensing a reprocessing facility and an advanced recycling reactor; and
- Prepare a technical-basis document to support rulemaking for 10 CFR Part 70, with revisions to 10 CFR Part 50, as appropriate.

This work involves identification of the regulatory requirements for the licensing of advanced fuel cycle facilities and advanced reactors, with consideration of relevant areas, such as waste

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management, safeguards, and environmental protection. Multiple NRC offices have responsibility for the various technical areas. Therefore, coordination is required to accomplish this work. The Commission directed the staff to provide supplemental information that discusses how the regulatory framework and gap analysis will be performed and coordinated among various NRC offices. The process for doing this is provided in this paper. The staff intends to use this process to conduct the gap analysis which could support subsequent development of the technical-basis document for revisions to Part 70 and Part 50, as appropriate.

#### BACKGROUND:

A major element of the GNEP is the development and eventual commercial deployment of advanced nuclear fuel recycling technologies. The U.S. Department of Energy (DOE) has proposed three types of interrelated project-specific GNEP facilities, to close the fuel cycle: (1) a nuclear fuel recycling center or Consolidated Fuel Treatment Center (CFTC); (2) an advanced recycling reactor or Advanced Burner Reactor (ABR); and (3) an advanced fuel cycle research facility, also referred to as the Advanced Fuel Cycle Facility (AFCF). DOE is partnering with industry to demonstrate the CFTC and the ABR, on a commercial scale, in facilities that meet NRC requirements. The AFCF would be a DOE-controlled and -operated facility that is not subject to NRC licensing.

#### DISCUSSION:

##### **Scope of Work**

As stated in SRM-SECY-007-0081, the Commission directed the staff to provide supplemental information that discusses how the regulatory framework and gap analysis, for GNEP facilities, will be performed.

Potentially complex issues to be addressed, particularly for the option of co-located facilities, include: (a) safeguards; (b) waste management; (c) transportation; (d) environmental protection; (e) risk management; and (f) other safety issues. Several NRC organizations will handle these issues with the Office of Nuclear Material Safety and Safeguards (NMSS) leading fuel facility efforts and the Office of New Reactors (NRO) leading reactor efforts.

### **Commission Direction**

In SRM-SECY-07-0081, the Commission stated the following regarding GNEP-related administrative matters:

- Although the Commission will not seek supplemental appropriations for GNEP for fiscal year (FY) 2008, it has no objection to very modest funds being reprogrammed, in FY 2008, in accordance with the normal budget process;
- NRC FY 2008 funds for the GNEP, Agency-wide, should be 1 to 2 full-time equivalents (FTEs);
- FY 2008 work should cover a first-order gap analysis;
- NMSS will have the lead on the materials issues;
- NRO, in concert with the Office of Nuclear Reactor Research (RES), will have the lead on the reactor licensing review and oversight with other offices' assistance, as appropriate; and
- The Office of Nuclear Security and Incident Response (NSIR) will have the lead on security concerns.

In regards to the ABR, the Commission stated:

- Use Clinch River as a starting point for the first-order gap analysis;
- Tabulate what rules clearly apply;
- Tabulate what rules clearly do not apply;
- Determine whether a gap exists and its relative size or complexity;
- Do not conduct a phenomena-identification and ranking-table analysis; and
- Do not identify any proposed regulatory resolutions because DOE has not yet defined the advanced technology nor scope of its GNEP program.

The staff will follow these Commission directions when developing the regulatory framework for licensing GNEP facilities.

### NRC Organizational Responsibilities

In a memorandum dated September 21, 2007, the Executive Director for Operations designated NMSS as the NRC lead office to coordinate GNEP activities. NMSS is forming a technical working group and a steering committee to coordinate the efforts of NMSS, NRO, RES, NSIR, Office of Federal and State Materials and Environmental Management Programs (FSME), and the Office of the General Counsel (OGC).

In order to perform the first-order gap analysis, a total of 2 FTEs will need to be reprogrammed in FY 2008. The Division of Fuel Cycle Safety and Safeguards (FCSS), in NMSS, will be allotted a maximum of 0.5 FTE (675 hours). The remaining 1.5 FTEs will be divided among the other NRC offices and NMSS divisions as follows: (a) NRO, 0.5 FTE (maximum of 675 hours); (b) RES, 0.5 FTE (maximum of 675 hours); (c) NSIR, 0.1 FTE (maximum of 135 hours); (d) OGC, 0.1 FTE (maximum of 135 hours); (e) FSME, 0.1 FTE (maximum of 135 hours); and (f) Division of Spent Fuel Storage and Transportation (SFST), in NMSS, 0.2 FTE (maximum of 270 hours). If needed, assistance from the Office of Nuclear Reactor Regulation (NRR) will be funded using FTE reallocated by NRO.

As indicated in the table below, NMSS will lead the technical working group's efforts associated with fuel separations and fabrication, and spent fuel and product storage facilities. NRO, with support from RES, will lead the group's efforts associated with advanced recycling and grid-appropriate reactors. NMSS, with support from FSME, will lead the group's efforts associated with waste treatment and storage facilities. NSIR will support the group's efforts on any security concerns.

Activity Leads and Supporting Offices for Each GNEP Facility

Facility Type	Lead Office	Supporting Office
Fuel Separations Facility	NMSS	NRO, NRR, RES, FSME, NSIR, OGC
Fuel Fabrication Facility	NMSS	NRO, NRR, RES, FSME, NSIR, OGC
Waste Treatment Facility	NMSS/FSME	NRO, NRR, RES, NSIR, OGC
Interim Waste Storage Facility	NMSS/FSME	NRO, NRR, RES, NSIR, OGC
Interim Spent Fuel Storage Facility	NMSS	NRO, NRR, RES, FSME, NSIR, OGC
Interim Product Storage Facility	NMSS	NRO, NRR, RES, FSME, NSIR, OGC
Advanced Recycling and Grid-Appropriate Reactors	NRO	RES, NRR, NMSS, FSME, NSIR, OGC

The technical working group will coordinate areas such as safety, safeguards, environmental protection, waste management, decommissioning, accident analyses, security, and emergency

management that are related to licensing a GNEP facility. The technical working group members from the appropriate offices will be assigned to the areas of review for which gap analyses will be conducted, to identify changes in regulatory requirements necessary for both a reprocessing facility and an advanced recycling reactor. After the gap analyses, the technical working group will, as necessary, coordinate the technical-bases document, to support licensing a spent-fuel reprocessing facility and an advanced recycling reactor.

A steering committee, consisting of office directors or their designees, is being established to provide guidance to the technical working group on cross-cutting issues and potential policy issues. The steering committee will be briefed regularly on the technical working group's progress in completing scheduled milestones.

Concurrent with the staff's regulatory framework development efforts (2 FTEs in FY 2008) will be efforts (equivalent to roughly 2-4 FTEs in FY 2008) under the Memorandum of Understanding (MOU), dated July 13, 2007 (ML071210155), and the Interagency Agreement (IA) on the GNEP, effective date August 22, 2007, between NRC and DOE. The NRC efforts under the MOU and IA will concern the identification of potential safety, safeguards, and security issues of the proposed GNEP technologies and facilities, including suggestions for tailoring equipment, facilities, or operations that would facilitate or expedite the NRC licensing process of the GNEP facilities. In accordance with the MOU and the IA, NRC will provide DOE with an annual report that will describe activities undertaken, meetings attended, personnel interviewed, reports reviewed, testing observed, analyses performed, and recommendations provided to DOE. NRC will provide DOE with its first annual report, by April 30, 2008.

The staff is prohibited from using any DOE funds provided under the GNEP IA for GNEP regulatory framework development activities. Nevertheless, in developing the GNEP regulatory framework, the staff will leverage its domestic and international experience and knowledge gained as a result of NRC's activities under the MOU and the IA, and NRC's involvement in other projects, such as the Next-Generation Nuclear Plant project, the Mixed-Oxide Fuel Fabrication Facility licensing review, and the International Atomic Energy Agency's efforts to develop its safety guide for reprocessing facilities.

#### RESOURCES:

The staff will use the Planning, Budgeting and Performance Management process to reallocate 2 FTEs, to perform the gap analysis in FY 2008. The reallocation amounts among the NRC offices are as follows:

NMSS will reallocate a total of 0.7 FTE which will be divided between the following divisions: (a) FCSS, 0.5 FTE; and (b) SFST, 0.2 FTE. RES will reallocate 0.5 FTE; NRO will reallocate 0.5 FTE; NSIR will reallocate 0.1 FTE; OGC will reallocate 0.1 FTE; and FSME will reallocate 0.1 FTE. If needed, assistance from NRR will be funded using FTE reallocated by NRO.

COORDINATION:

The OGC has no legal objections concerning this paper. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections.

*/RA/*

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