

POLICY ISSUE
(Notation Vote)

January 19, 2016

SECY-16-0005

FOR: The Commissioners

FROM: Victor M. McCree
Executive Director for Operations

SUBJECT: CORNERSTONE DEVELOPMENT FOR THE REVISED FUEL CYCLE
OVERSIGHT PROCESS

PURPOSE:

To provide the Commission with a recommendation for the optimal cornerstones of the Revised Fuel Cycle Oversight Process (RFCOP). In response to the staff requirements memorandum (SRM) for SECY-11-0140, "Enhancements to the Fuel Cycle Oversight Process" (Agencywide Documents Access and Management System [ADAMS] Accession No. ML120050322), the U.S. Nuclear Regulatory Commission (NRC) staff is recommending an operations-based approach that includes the following cornerstones: Criticality Safety, Chemical Operational Safety, Occupational Radiation Safety, Public Radiation Safety, Emergency Preparedness, Security, and Material Control and Accounting.

BACKGROUND:

In response to the SRM for SECY-10-0031, "Revising the Fuel Cycle Oversight Process" (ADAMS Accession No. ML102170054), and as a result of comments from the Advisory Committee on Reactor Safeguards (ACRS) and industry stakeholders, the NRC staff proposed two cornerstone approaches that could be applied to the RFCOP: hazards analysis-based and operations-based. The staff described these cornerstone approaches in Enclosure 2 of SECY-11-0140 (ADAMS Accession No. ML111180712). In SECY-11-0140, the staff recommended the hazards analysis-based cornerstone approach. The ACRS agreed with this

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recommendation (ADAMS Accession No. ML11284A143); however, industry stakeholders communicated a preference for the operations-based cornerstone approach (ADAMS Accession No. ML111180708). As stated in SECY-11-0140, either cornerstone approach provides the foundation for a risk-informed and performance-based inspection and assessment program.

In the SRM for SECY-11-0140, the Commission approved Option 1 and directed the NRC staff to continue their interaction with stakeholders "...to develop the optimal basis for the cornerstones, ultimately recommending the path that is most likely to help ensure safe operations." In addition, the Commission directed the staff to consider "...how the cornerstones would be understood in the context of fuel facility operation and less to whether they resemble those of the Reactor Oversight Process (ROP)." Finally, the Commission stated that, "Possibly a combination of the hazard analysis- and operations-based cornerstones could prove to be the optimal approach to help ensure safe operations."

DISCUSSION:

In response to the SRM for SECY-11-0140, the NRC staff established a working group to develop an optimal basis for cornerstones of the RFCOP. The working group included staff from the Offices of Nuclear Material Safety and Safeguards, Nuclear Security and Incident Response, Nuclear Reactor Regulation, and Region II.

The working group first developed the regulatory framework. This framework served as the strategic vision of the major regulatory building blocks that will support the NRC's mission via RFCOP cornerstones. Specifically, Enclosure 1 shows a diagram of the regulatory framework, depicting the NRC's mission as the pinnacle, anchored by the strategic performance areas and the cornerstones.

The cornerstones are those aspects of licensee performance that are important to the NRC's mission and, therefore, merit regulatory oversight. Acceptable licensee performance in these cornerstones demonstrate that the NRC's mission is met. Each cornerstone has an objective and several key attributes that implement the objective. A key attribute is a characteristic of a cornerstone that needs to be achieved or maintained to verify that the licensee provides adequate assurance of worker and public health and safety, and common defense and security. Each key attribute has one or more inspectable areas. Inspectable areas are those aspects of the physical facility or the licensee's programs or processes that the NRC verifies to achieve or maintain a key attribute of a cornerstone. Enclosure 1 defines these levels within the regulatory framework and cornerstone structure.

After developing the regulatory framework, the working group considered various cornerstone approaches. Specifically, the staff considered the hazards analysis-based cornerstones, operations-based cornerstones, and a possible combination of the two aforementioned approaches. With the exception of emergency preparedness and safeguards-related cornerstones, the primary differences among the cornerstone approaches are related to the proposed cornerstones of safety. The emergency preparedness and safeguards-related cornerstones are expected to be the same regardless of the recommended cornerstone approach.

Enclosure 2 provides the details of the staff's consideration of the different cornerstone approaches. Enclosure 2 also discusses the rationale for the staff's recommendation and the results of the development of the cornerstones for the RFCOP.

The staff discussed its consideration of the different cornerstone approaches and the rationale for its recommendation with internal (i.e., ACRS and NRC inspectors) and external stakeholders. The staff met with the ACRS Radiation Protection and Nuclear Materials subcommittee on September 25, 2015, and the full committee on November 5, 2015. The ACRS letter to the Executive Director for Operations, dated November 17, 2015 (ADAMS Accession No. ML15316A490), concludes, "The staff has proposed an adequate set of candidate safety cornerstones to base its further development of the revised fuel cycle oversight process (RFCOP)."

During public meetings held February 25, March 5, and June 11, 2015, external stakeholders, primarily representatives from the Nuclear Energy Institute (NEI) and fuel cycle licensees, expressed a general interest in continued engagement as the staff progresses through the RFCOP project plan. In response to *Federal Register* notice 80 FR 33303, external stakeholders, including NEI, provided specific comments on the draft cornerstones development document. The comments expressed no substantive objections or concerns with the cornerstone approach or the staff's recommended cornerstones. NEI, however, reiterated a specific interest in terminating the staff's efforts to enhance the fuel cycle oversight process. In a letter dated July 13, 2015 (ADAMS Accession No. ML15195A422), NEI suggested that because the enhancements to the fuel cycle oversight process are a lower funding priority and the Commission in the SRM to SECY-11-0140 stated, "the existing [fuel cycle] oversight process is effective and ensures safety and security," the RFCOP should not go forward, allowing industry to focus its attention on issues of higher significance.

The staff responded to all stakeholder comments in a memorandum dated August 26, 2015 (ADAMS Accession No. ML15236A200). Part of the staff's response included clarification of Enclosure 2, where appropriate; however, the content of the cornerstones remained largely unchanged.

RECOMMENDATION:

The NRC staff recommends that the Commission approve the cornerstones described in Sections 4.0 through 4.3 of Enclosure 2. The staff's recommendation includes the following cornerstones: Criticality Safety, Chemical Operational Safety, Occupational Radiation Safety, Public Radiation Safety, Emergency Preparedness, Security, and Material Control and Accounting.

The staff's recommendation is similar to an operations-based approach and includes cornerstones related to Criticality Safety and Emergency Preparedness. To enhance communication with our stakeholders and facilitate implementation, other elements from the operations-based approach, such as chemical safety and radiation safety, are incorporated into the proposed Chemical Operational Safety, Occupational Radiation Safety and Public Radiation Safety cornerstones. The hazards analysis-based approach that the staff considered was based on the licensees' typical methodology when developing integrated safety analyses. This approach is less reflective of fuel facility operations and would be inconsistent with the direction

given in the SRM to consider "...how the cornerstones would be understood in the context of fuel facility operation and less to whether they resemble those of the Reactor Oversight Process (ROP)." As mentioned above, Enclosure 2 fully discusses the rationale for the staff's recommendation and includes the objectives of each cornerstone.

If the Commission approves the staff's recommendation, the staff will continue its progress through the RFCOP project plan and develop the inspection procedures based on the cornerstone objectives described in Enclosure 2. These inspection procedures would be used to pilot the RFCOP. In accordance with the SRM for SECY-11-0140, the staff would request Commission approval to start the pilot in a separate Commission paper after developing other elements of the RFCOP.

RESOURCES:

Should the Commission approve the staff's recommendation, the activity to develop RFCOP cornerstones would be complete. Because this activity is part of the larger effort to enhance the fuel cycle oversight process, as approved in the SRM to SECY-11-0140, approval of this recommendation would not require additional resources.

Schedule

As stated in the previous section, approval of the staff's recommendation would allow the staff to continue executing Option 1, as approved in SECY-11-0140. The projected schedule would include revision of the inspection procedures and development of the fuel cycle significance determination and performance assessment processes in FYs 2016 and 2017, followed by the pilot program in FY 2018 and implementation of the enhancements by FY 2019.

The Commissioners

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COORDINATION:

The Office of the General Counsel has reviewed this SECY paper and has no legal objections to its content. The Office of the Chief Financial Officer has reviewed this SECY paper for resource implications and has no objections.

/RA/

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Executive Director
for Operations

Enclosures:

1. Regulatory Framework and Cornerstone Structure
2. Cornerstone Development

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ADAMS Accession No.: ML15233A355 WITS 201200029 NMSS201500037

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