POLICY ISSUE
(Information)

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FOR: The Commissioners

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SUBJECT: NRC KNOWLEDGE MANAGEMENT PROGRAM STATUS UPDATE

PURPOSE:

The purpose of this paper is to provide the Commission with an update of Knowledge
Management (KM) Program activities and initiatives. It provides a summary of progress with
updates and commentary since the agency established the Nuclear Regulatory Commission's
(NRC) KM Program in July 2006. This paper does not address any new commitments.

DISCUSSION:

In July 2006, SECY-06-0164, "The NRC Knowledge Management Program," informed the
Commission about the development and implementation of the agency's KM Program. The KM
Program outlined a systematic approach for identifying, collecting, transferring, and using the
staff's critical knowledge.

One of the program's first activities was developing guidance to the offices and regions and
tasking them with identifying their occupational priorities and critical bodies of knowledge. The
Office of Human Resources and the Office of the Executive Director for Operations developed a
consolidated list of occupational priorities and critical bodies of knowledge and provided it to the
offices and regions to use for identifying KM techniques.

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The agency's senior leadership met in November 2006 to review the KM program's progress and to address three key questions concerning support for the agency's KM initiatives: what actions should senior leaders take; what should be done at the office level; and what should be done at the agency level? The senior leaders also agreed that the agency's KM Program must anticipate an overall change in the NRC's organizational dynamic. The change will come from the significant number of new hires, the diversity they will bring to the NRC, and an expected higher than historical staff turnover rate.

In late 2006, the Knowledge Management Steering Committee (KMSC) was formed as the agency's KM governing body, chaired by the Deputy Executive Director for Materials, Waste, Research, State, Tribal, and Compliance Programs, designated as the Agency KM Champion. The KMSC represents each office and region and provides KM leadership to the NRC's KM activities; to continually identify, develop, pilot, and conduct KM projects; and to provide budget guidance.

The KMSC began formally monitoring and directing the agency's KM activities in FY2007. The KMSC tasked the offices and regions to identify and report their KM activities and each activities' status. This information was assembled into the KM Dashboard that is described in Enclosure 1. In early 2007 the agency hired an expert KM practitioner as the agency's full-time Agency KM Coordinator and adviser to the KMSC.

Enclosure 2 contains the KMSC charter that was developed and finalized in March of 2007. The charter further outlines and defines the KMSC's purposes, context, and organization. Consistent with its chartered responsibilities, the KMSC has begun new initiatives, reprioritized some of the agency's KM efforts, and adjusted the original KM Program timeline accordingly.

In April 2007, the Agency KM Champion led a knowledge-sharing workshop for the senior leaders to elicit their views on some of the agency's best KM practices. One of the workshop's important outcomes was in demonstrating how the senior leaders could learn from each other and the unexpected value this information holds for others.

The agency's KM activities to date—successfully establishing the KMSC, ratifying its charter, developing the KM Dashboard, hiring a full-time Agency KM Coordinator, conducting the knowledge-sharing workshop, and emphasizing communication efforts—provide a good foundation for the agency's ongoing KM efforts.

Ongoing KM Efforts

Strategic Planning and Communication

The agency is successfully integrating KM into its strategic planning process. The NRC's draft Strategic Plan now includes an Operational Excellence Strategy supporting KM. The Training and Development Strategic Plan includes fostering a knowledge-sharing culture as a key element for its goal of ensuring that organizational training and development policies and practices foster a culture of continuous improvement and optimal performance. The KM Coordinator is finalizing the agency's KM communication plan.

Knowledge-Sharing Practices

The KMSC has recognized the value of incorporating activities and elements into a larger framework that represents a menu of strategies and techniques for KM integration. This approach led to the completion of several actions set forth in the original timeline contained in SECY 06-164 and adjustment of other schedules and deliverables. The relationship of the original timeline to the KMSC decisions reflects the emergent orientation of the KMSC as the governing body for KM activities, as described above and in its charter.

Information Technologies to Acquire, Store, and Share Knowledge

Cultivating communities of practice (CoPs) has helped move the agency forward along a people-oriented pathway to effective knowledge transfer. As the agency's knowledge structures, CoPs anchor many other KM strategies and systems. Nearly 300 staff members have participated in successful pilots of CoP software, such as the NRC Knowledge Center; full agency adoption awaits approval under the Capital Planning and Investment Control process.

KM Coordination and Reporting

Offices develop KM activity plans and report progress to the Agency KM Coordinator on a periodic basis. Activity progress and results are linked to the dashboard and posted on the KM Web site. Some of the budgeted activities include CoPs, organizational storytelling, and content management projects and programs. Because the dashboard provides a moving snapshot of KM activities across the agency, it provides the offices and regions with the ability to share the details of each others' KM activities.

The KMSC fosters the approach that business needs must drive KM activities, and that offices must evaluate them through measures appropriate to their goals and circumstances. As best practices emerge and are identified, the KMSC helps to communicate and replicate that knowledge across the agency. The KMSC serves as a common arena for interested agency KM leaders to share ideas, hear from outside experts, and foster collaborative efforts.

Future Efforts

KM Program Evolution

The KMSC will direct agency's KM efforts to continually identify emerging areas of need and work to capture and transfer the agency's critical knowledge. This includes expanding the information sharing capabilities of the KM Dashboard, cultivating communities of practice, and exploring the use of social media tools for incorporation into agency operations.

Expertise Exchange Program

The KM Steering Committee is developing a skills mentoring program to complement the agency's existing career mentoring program. It is envisioned that the offices and regions will locally administer the Expertise Exchange Program to ensure the formal exchange of critical knowledge among their staffs. The program will be piloted following approval by the KMSC.

Internal Advisory Groups

Creating internal advisory groups will also help evolve the KM Program. For example, by harnessing the millennial generation's cultural perspective the agency hopes to identify areas of opportunity to make progressive change to both leverage the younger employees' knowledge as well as attract and retain this generation's top talent into the agency.

KM Technology Adoption

The Strategic Workforce Planning (SWP) tool will continue to be used to identify agencywide and office-level skills gaps. The staff is continuing to explore options to integrate the agency Learning Management System and SWP database into a knowledge resource locator.   The staff could potentially use this locator to find experts to answer questions, identify experts for the Expertise Exchange Program, or to identify and fill knowledge gaps.

Staff are also investigating the application of social media technologies such as blogs, Wikis, podcasts and related emerging technologies to enhance or transform the agency's workflow. In addition, the Agency KM Coordinator will expand the use of knowledge capture interviewing and training skills, utilizing some of the new digital media tools such as online video.

Collective Ownership and Learning

The agency's KM Program provides an opportunity for collective ownership and distributed leadership of KM with the responsibility for sharing best practices, lessons learned, and success stories across the agency. KM leadership and staff are working together to develop KM solutions that can be shared agencywide. In time these collaborative efforts will evolve the agency into a more effective learning organization.

RESOURCES:

The KMSC conducted a KM budget analysis that segmented KM activities into three categories, described below. The KM Champion submitted the results of this analysis to the Program Review Committee and they were used to inform the fiscal year (FY) 2009 budget formulation process. The offices also used these categories in the recent budget call in determining their KM activities.

Category 1:   KM Activities which are already being conducted.
Category 2:   KM activities that require staff efforts, but are included within the full-time
                      equivalent model.
Category 3:   New KM initiative activities.

Funding for KM is included in the offices' FY 2007 and FY 2008 budgets and the funding needed to support the initiatives described in this paper is included in the FY 2009 budget request.

COORDINATION:

The Knowledge Management Steering Committee has reviewed this paper and it reflects comments received by its members. The Office of the General Counsel has reviewed this paper and has no legal objections. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections.

                                    /RA/

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Enclosures:
1. KM Dashboard
2. KMSC Charter

The Knowledge Management Dashboard

The Knowledge Management (KM) Program uses a key enterprise information sharing tool called the KM Dashboard. The KM Dashboard is a focal point and an evolving, living document reflecting an overview of KM activities across the agency. It is organized by KM activity and presents a menu of strategies for offices to select based on their business needs. Offices select KM strategies that best fit with the nature of the work and workforce demographics; it is not the intent that all offices implement all strategies.

The KM Dashboard reports office activities in a matrix format that allows for each cell to be updated periodically. Currently, reporting may take whatever form makes sense for the reporting office though plans for a template are in development. However, each report should touch on essential themes, such as the three below.

1. Best Practices: Repeatable practices, processes, and other valuable activities.
2. Lessons Learned: Positive or negative exemplars that demonstrate key insights.
3. Success Stories: Affirmative narratives to share and emulate across the agency.

Figure 1, "Agencywide KM Activities 2006-07," depicts a recent KM Dashboard iteration and it is included for illustrative purposes.

FOUR PROGRAM CATEGORIES

The four categories reflected in the KM Dashboard each contain KM initiatives by each office. Not all categories of strategies are considered essential to all offices.

Category 1: Human Resources Processes, Policies, and Practices

The human resources processes, policies, and practices initiative represents the agency's infrastructure for knowledge retention. This initiative has five principal functions: evaluating the state of the agency's skill and knowledge base; planning career development and succession planning; building an employee retention culture; retaining long-tenure employees; and investing in recruiting processes.

Examples:

• Succession planning and targeted recruiting.
• Developed and piloted retention tool training for supervisors.
• Launched course, "Employee Retention Strategies for Managers."
• Hired full-time KM expert to provide coordination and advice.

Category 2: Knowledge Sharing Practices

Knowledge-sharing practices describe the methods and techniques that the agency has or will institutionalize as part of its day-to-day operations. These practices can be generally classified as either those to transfer explicit knowledge and those that transfer implicit and tacit knowledge.
Examples:
• Knowledge capture interviewing.
• Codification and documentation of processes.
• Developing an Expertise Exchange Program.
• Peer-to-peer knowledge retention and transfer sessions.
• Building an organizational storytelling capability.
• Cultivating a knowledge-sharing culture.

Category 3: Knowledge Recovery Practices

In spite of careful planning and best efforts, events will likely occur that cause the agency to lose some critical knowledge. There are three initiatives that are useful for recovering lost knowledge: 1) bringing back employees who have the required knowledge but have left the agency, 2) contracting to outsource the lost capabilities through commercial contracts or interagency agreements, and 3) recreating or relearning the knowledge that was lost.
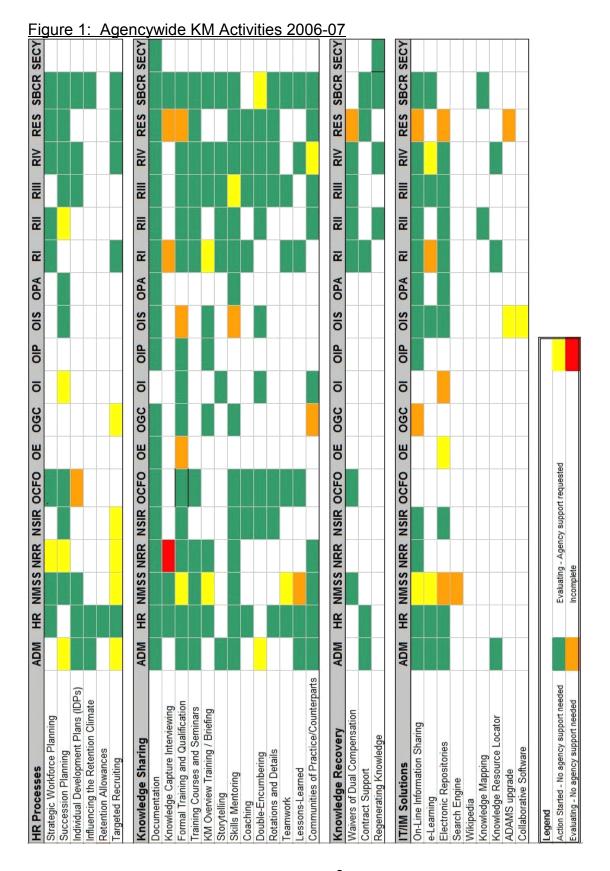
Examples:

• Waivers of dual compensation.
• Contract support.

Category 4: IT Applications to Acquire, Store, and Share Knowledge

Information Technology (IT) applications are not viewed by the agency as knowledge management practices, rather as a means to facilitate, accelerate, and enhance the agency's knowledge management practices. None of the IT applications are intended as replacements for the direct person-to-person connection that is necessary for transferring implicit knowledge, particularly for transferring tacit knowledge. However, new knowledge continues to be created at an accelerating pace and IT applications are effective means of capturing, sorting, storing, and disseminating this knowledge and information to maximize the effectiveness of the staff.

Examples:

• On-line communities of practice.
• Social media technologies such as Wikis.
• Expanding e-Learning.
• Document repositories.
• Search and retrieval tools.

Figure 1: Agencywide KM Activities 2006-07

Column headers (left to right): ADM, HR, NMSS, NRR, NSIR, OCFO, OE, OGC, OI, OIP, OIS, OPA, RI, RII, RIII, RIV, RES, SBCR, SECY

HR Processes
- Strategic Workforce Planning
- Succession Planning
- Individual Development Plans (IDPs)
- Influencing the Retention Climate
- Retention Allowances
- Targeted Recruiting

Knowledge Sharing
- Documentation
- Knowledge Capture Interviewing
- Formal Training and Qualification
- Training Courses and Seminars
- KM Overview Training / Briefing
- Storytelling
- Skills Mentoring
- Coaching
- Double-Encumbering
- Rotations and Details
- Teamwork
- Lessons-Learned
- Communities of Practice/Counterparts

Knowledge Recovery
- Waivers of Dual Compensation
- Contract Support
- Regenerating Knowledge

IT/IM Solutions
- On-Line Information Sharing
- e-Learning
- Electronic Repositories
- Search Engine
- Wikipedia
- Knowledge Mapping
- Knowledge Resource Locator
- ADAMS upgrade
- Collaborative Software

Legend
- Action Started - No agency support needed
- Evaluating - No agency support needed
- Evaluating - Agency support requested
- Incomplete

CHARTER OF THE KNOWLEDGE MANAGEMENT STEERING COMMITTEE

A. <u>Purpose</u>

The Knowledge Management Steering Committee (KMSC) is NRC's governing body for guiding the program adoption and continuous improvement of KM. The KMSC will be responsible for the following five overarching purposes:

1. Create a broad, agencywide awareness of the perspectives, purposes, and goals associated with the KM Program;
2. Ensure that the roles and responsibilities for the performance of the agency's KM Program are clear and complementary;
3. Foster communications and cooperation across offices for KM Program activities;
4. Establish performance measures and metrics for the agency's KM Program;
5. Promote the sharing and integration of industry KM practices across the agency.

B. <u>Organization</u>

The KMSC comprises KM Champions representing each Office and Region. The Deputy Executive Director for Materials, Waste, Research, State, Tribal, and Compliance Programs, (DEDMRT), who is also the NRC KM Champion, chairs the KMSC. HR is the agency lead for KM and the Agency KM Coordinator serves as a member-at-large.

C. <u>Background</u>

Agency transformation begins by aligning KM with the agency's existing business processes and technology rather than by approaching KM as an additional or ancillary requirement that is perceived as outside of the scope of mission-critical work. The staff builds on what they are already doing by leveraging existing processes and technology, which allows them to connect these familiar processes with the newer concepts of KM. Most importantly, the staff must be both allowed and expected to engage in knowledge-sharing activities as a normal part of their daily work.

KM's effectiveness requires that it become an integral dimension of the agency's work. Integrating KM requires the staff to think from a KM perspective when designing workflows and to look beyond simply executing the task at hand to considering how agency knowledge can be shared across the organization and conveyed into the future. Senior management must champion this fundamental change in perspective by providing clear expectations, adequate resources, along with recognition and rewards for desired behaviors and results.

Over time, the KMSC can transform the agency into a learning organization that continuously improves and systematically refreshes its knowledge and intellectual capital. A well-designed KM program can return significant value to the agency by providing a purposeful approach to integrating useful KM activities that include the identification, capture, retention, transfer, use and reuse of relevant, critical knowledge. Offsetting the value created through KM is the cost imposed as a burden on the agency staff to develop, learn, and apply the KM principles and practices necessary to

effectively enact KM. In order to maximize the KM Program's value proposition, it is important to emphasize the long-term benefits and minimize the initial burden on the staff and the offices.

A successful and sustainable KM Program, thoroughly integrated into the agency's day-to-day routines, requires fundamental changes to the agency's organizational culture. Although benefits of the KM initiative can be realized immediately, fully institutionalizing changes of this nature typically requires a period of several years. Because of the significance and duration of the change process, active change management is essential to the success of KM at the NRC. Managing the changes requires clear communications, top-down and bottom-up alignment, building momentum on early successes, and most importantly, leadership to direct the effort over the long-term. Establishment of the KMSC is intended to facilitate this effort.

D. Procedures

Each KMSC member is expected to suggest agenda items or make presentations pertaining to current KM activities. The KMSC Secretary shall maintain and prioritize a list of current issues to facilitate progress in meeting KMSC objectives.

Meetings

1. Meetings are held monthly.
2. The KMSC Secretary shall issue meeting agendas 7 days in advance to allow for adequate preparation.
3. The KMSC Chair shall ensure that meetings start and end on time.
4. Members will create an environment that allows them to openly exchange ideas.
5. Participation by all members is expected. If a member cannot attend a meeting, he or she is expected to designate an alternate, preferably their KM Staff Lead.
6. The KMSC Secretary shall provide meeting summaries to KMSC members within 2 working days of the meeting. The members will review the draft and comment within 2 working days of receiving the draft. The KMSC Secretary shall post the final version to the KM Web site for the benefit of all NRC staff.

Report Schedule

Reports or deliverables shall be delivered to the KMSC Chair after actions are assigned, typically at KMSC meetings. The KMSC Chair shall assign due dates during the meeting or shortly thereafter and the KMSC Secretary shall track them appropriately.

Recommendations

Recommendations shall be sent to the KMSC Chair as part of the report/deliverable, who will then determine necessary levels of senior management support and degree of Commission involvement.

E. Roles and Responsibilities

The KMSC includes Office and Regional Knowledge Management (KM) Champions, the Agency KM Champion, and the Agency KM Coordinator.

Each Office or Regional Champion is responsible for leading and coordinating KM activities in their respective organizations. Additional information on the roles and responsibilities of the Office and Regional Champions can be found in SECY 06-0164, "The NRC Knowledge Management Program," Enclosure 2, dated July 25, 2006.

Chair

The Agency KM Champion serves as KMSC Chair. The KMSC Chair's responsibilities are to:

- Chair and develop the KMSC's role as the governing body for KM.
- Manage meetings, prioritize and lead the agenda, and facilitate discussions among committee members, subcommittees and working groups.
- Communicate issues and recommendations to the KM Champions for appropriate action.
- Track completion of action items and align KMSC actions with the NRC KM Program Time Line.
- Delegate the above responsibilities as appropriate.

Agency KM Coordinator

The Agency KM Coordinator's responsibilities are to:

- Author KMSC guidance, policy papers, and presentations.
- Provide KM thought leadership and keep the KMSC informed of developments in the field.
- Serve as staff liaison between the agency KM community of practice and the KMSC.
- Identify agenda items and prepare agendas for approval.
- Align KM activities conducted by the KM Champions and Staff Leads and offer consultation to KMSC members and agency senior managers.
- Develop and maintain the NRC KM Web page.

Committee Members (KM Champions)

In addition to modeling good KM practices and leading by example, committee members responsibilities are to:

- Lead the development of KM strategies.
- Identify and select common techniques for implementing KM strategies.
- Provide feedback and recommendations to assist the KMSC in KM governance.
- Provide guidance and recommendations surrounding KM emerging best practices, technologies, and strategies.
- Share KMSC observations and activities in meetings with their respective staff and managers.

- Contribute to KMSC progress by sharing ideas and carrying out action items.
- Propose agenda items and approve meeting summaries at meetings.
- Report subcommittee or working group results and lead discussion in these areas.
- Promote knowledge sharing among offices and regions.
- Support other KMSC members by following respectful meeting practices.

KMSC Secretary

The KMSC Secretary's responsibilities are to:

- Prepare meeting summaries and distribute to KMSC members.
- Maintain the master list of KMSC membership.
- Ensure meeting attendees have needed documents at the meetings..
- Ensure the maximum use of visual aids (flip charts, projectors, VTC, etc.).