NATIONAL MATERIALS PROGRAM PILOT PROJECT FIVE
REVISION OF INSPECTION MANUAL CHAPTER 2800 (IMC 2800), MATERIALS INSPECTION PROGRAM, AND THE ASSOCIATED ROUTINE INSPECTION PROCEDURES

EXECUTIVE SUMMARY

NMSS led Pilot Project 5 to revise Inspection Manual Chapter (IMC) 2800, "Materials Inspection Program," and seven associated routine inspection procedures for non-medical types of use. The working group achieved the objectives and scope of work within the approved schedule set forth in the charter. The working group streamlined the administrative processes for the routine inspection program and lengthened the routine inspection intervals according to risk-informed recommendations from NMSS. Consequently, the labor rates were reduced for routine inspections completed during the pilot period and fewer routine inspections will be scheduled in future years as NRC regional offices continue to implement the revised materials inspection program which was produced by the working group under Pilot Project 5. NMSS also queried the Agreement States to obtain general information about implementation of the revised materials inspection program in the States. Seven of the thirty-three Agreement States responded. The seven States indicated that routine inspections are scheduled more frequently than the intervals in revised IMC 2800 and no program changes were needed at this time.

BACKGROUND

On November 14, 2000, the Mallinckrodt Lessons Learned Task Group Report (Phase I) recommended specific actions to NMSS as short-term changes, long-term changes, rulemaking, referral to Phase II (review of the entire materials program), and referral to the National Materials Program Working Group. The Phase I recommendations included IMC 2800 and the associated routine inspection procedures. NMSS developed an action plan that was provided to the Phase II Review Group.

On August 13, 2001, the Phase II Byproduct Materials Review Report endorsed the majority of the recommendations for the materials inspection program that had been referred by Phase I, thereby encouraging NMSS to complete action on those items. With input from the Regional Administrators, NMSS considered this information and committed to implement the Phase II recommendations, including the endorsed Phase I recommendations.

Scope of Work

The objectives of Pilot Project 5 were to: (1) align the guidance documents for the materials inspection program with a more risk-informed and performance-based regulatory approach, (2) implement Phase I and Phase II recommendations and conserve resources for the materials program in FY02 and thereafter, (3) incorporate innovative approaches not included in Phase I and II recommendations for the implementation of the inspection process to achieve long-term increases in effectiveness and efficiency, and (4) solicit Agreement State participation for the work described below in order to obtain information on the feasibility and viability of the NMP-"Alliance" Option.

The working group was initiated in February 2002 and all work products were completed by December 2002. The NRC regional offices tested the work products from April 2002 through June 2003. Final versions of the work products were available in November 2003. Activities

related to NMP–Pilot Project 5 began in February 2003 and have continued to the present time.

DISCUSSION

The working group consisted of NRC members from NMSS, the NRC regional offices, STP, and a member from the State of Massachusetts who was appointed to represent the CRCPD and the OAS. The steering group also consisted of managers from the NRC offices indicated above and from the Office of the General Counsel. Later, during the Pilot Project No. 5 phase of the work, an additional manager from the State of South Carolina was added to the steering group. Each individual was responsible for representing the views of the management of their organization. The interests of the States were monitored and represented in this process by the individuals from the State of Massachusetts and the State of South Carolina, a program manager from STP, and the Deputy Director of STP.

The working group completed their tasks according to an expedited work schedule. The working group used a process that was suitable for accomplishing their mission to complete major revisions of IMC 2800 and the associated routine inspection procedures for the non-medical types of use in a short period of time and to promptly and effectively communicate the changes to regional inspectors who tested the work products during the pilot period. The working group met in Rockville, MD, for three separate weeks in FY02 and for three separate weeks in FY03. Generally, the plan for the week provided for travel to and from Rockville on Monday morning and Friday afternoon. The working group convened each week on Monday (2:00 PM) until Friday (11:00 AM). On Wednesday afternoon of each week, the working group held a teleconference with the steering group to provide an update on the status of the products and to seek decisions on policy from the managers who comprised the steering group. The schedule for the remainder of the week included individual assignments and group activities (e.g., a meeting on a specific issue or a revision session for a specific section of a product).

The week-long sessions were held at NMSS in the Regulatory Product Development Center (RPDC) that is equipped with computers, projectors, etc. to support writing team activities. During the development phase of the work, the members often assembled to revise text that was projected from a computer screen so that all members could see the text on screen. Various members used laser pointers as they discussed the projected text and directed changes that were being completed in real time by another member who was working at the key board. Group concurrence or consensus was achieved as the changes were completed. In this manner, the entire group was actively participating in the revision and was fully aware of the changes and the basis for the changes which were later communicated to regional inspectors during the training sessions in each regional office. This activity also enabled working group members to address questions from supervisors in the various NRC offices and inspectors in the regional offices.

The working group requested the Office of the Chief Information Officer (CIO) to establish a unique location for electronic versions of the work products. The CIO established the Q:\ and mapped the desk top of each working group member to the Q:\ where the work products were posted. In addition, the working group frequently communicated with GroupWise for mail and to coordinate meeting schedules and materials. The working group held monthly teleconferences to discuss work in progress.

Each of the Phase II recommendations was assigned to a working group member who was

responsible for incorporating the assigned recommendation into IMC 2800. Similarly, each of the routine inspection procedures was assigned to a working group member who was responsible for revising the inspection procedure to incorporate the seven core performance elements. All working group members were assigned to review all of the draft work products. In particular, each of the seven core performance elements was assigned to a working group member who was responsible for ensuring that the appropriate level of emphasis was given to the performance element in each of the inspection procedures.

The working group developed work products that included the revised IMC 2800 and seven revised non-medical routine inspection procedures (IPs). The work products incorporated the following Phase II recommendations: (1) revise routine inspection priorities, (2) empower inspectors, (3) streamline inspection preparation, (4) provide flexibility for scheduling initial inspections, (5) provide flexibility for scheduling field office inspections, and (6) expand the use of NRC Form 591, "Safety Inspection Report and Compliance Inspection."

The working group adopted the risk-informed inspection priorities that were recommended by Phase II. Adoption of the revised inspection priorities lengthened the routine inspection intervals for most types of use and will result in scheduling fewer routine inspections in future years. The working group adopted the seven core performance elements recommended by Phase II. The routine inspection procedures were revised to guide an inspector to evaluate a licensee's performance for each element. The working group revised seven non-medical IPs and coordinated with another team that revised the five medical IPs for implementation of 10 CFR Part 35. Consequently, each of the 12 routine IPs provides guidance for the following core performance elements: (1) security and control of licensed material, (2) shielding of licensed material, (3) comprehensive safety measures, (4) radiation dosimetry program, (5) radiation instrumentation and surveys, (6) radiation safety training and practices, and (7) management oversight.

Before testing the work products, the working group developed initial and refresher training materials in the RPDC and rehearsed the training sessions for IMNS managers and several steering group members. The working group members provided training to NRC regional inspectors in each of the regional offices. At the beginning of the refresher training session, IMNS led a video teleconference meeting from room T3B2 that was linked to the training rooms in the regional offices. The initial and refresher training sessions were well-supported by regional managers and well-attended by the inspectors. The training materials were useful and the discussions were beneficial for consistent implementation of the revised materials inspection program.

The working group member from each regional office was responsible for making changes in the routine inspection schedule to implement the risk-informed changes that were incorporated into IMC 2800. In February 2002, the working group rehearsed the process of changing the routine inspection schedule that is generated by the Licensing Tracking System (LTS) in order to ensure the schedule of routine inspections was correct for the pilot period. The previous version of IMC 2800 indicated that the next inspection date for routine inspection of a licensee could be extended for good performance, reduced for poor performance, or left at the normal interval. The revised IMC 2800 removed the instruction to extend the next inspection date for good performance and lengthened the normal inspection intervals for most of the program codes assigned to various types of use. Correctness of schedule was critical for the pilot.

The working group developed a temporary instruction that was posted on the NRC web site in the NRC Inspection Manual. The temporary instruction (TI 2800/033) described the revised materials inspection program which was developed to save resources for the materials program. The selected Phase I and II recommendations for IMC 2800 were incorporated into TI 2800/033. The revised routine IPs were implemented under TI 2800/033. As each inspection was completed during the pilot period, the inspectors designated hours in the Human Resources Management System to the specific license docket number and the revised IP which was used to evaluate the licensee's radiation safety program.

The working group revised NRC Form 591 (Parts I, II, and III) that inspectors used to document inspection findings and results. The streamlined form was designed to reference the revised IPs which were used by the inspector to evaluate the licensee's performance. Parts I and II of the form were used to record Severity Level IV violations that were identified by the inspector during the inspection, non-cited violations that were identified by the licensee, and to close violations from previous inspections. Parts I and II were intended to be shared with the licensee. Part III of the form was designed to streamline and replace the field notes which were formerly used by inspectors. Part III was used to document the inspection findings that support the violations recorded in Parts I and II of the form, the scope of the licensed activities, and the scope of the inspection. Part III was to be placed in the license docket file in the regional office.

The working group analyzed TI 2800/033, revised the work products, and addressed the success measures for the NMP Pilot Projects. Analysis of the TI indicated gains in efficiency and effectiveness. The overall labor rate was reduced ~ 15 percent and was influenced mostly by streamlining the administrative procedures for preparation and documentation of inspections which indicated a reduction of ~ 30 percent. The onsite inspection time was reduced ~ 10 percent by implementing a more performance-based approach. All NRC regional offices indicated a reduced labor rate.

The State representative contributed valuable insights for the revised materials inspection program, and thus demonstrated the value of the joint effort. For example, the State representative presented information to the States about the revised materials inspection program at the annual meetings of the CRCPD in 2002 and 2003 and the OAS in 2003. At the CRCPD annual meeting in 2003, the State representative was a panel member, along with the chair persons from Pilots 1, 2, 3, and 4. The panel presented the status of the NMP–Pilot Projects and answered questions from the OAS delegates. The State representative presented details of the pilot project, participated in the question-answer session, and solicited the States to provide inspection data to the writing team for comparison with NRC data during the final analysis of the TI. The State representative developed posters and attended the poster sessions at the CRCPD annual meetings in 2002 and 2003. The State representative also attended the training sessions for NRC inspectors and presented consistent information to the States.

Success Measures

1. *Provide insights into whether an informal coalition of State programs and NRC, as envisioned under the Alliance Option, is viable and can produce products meeting needs of both NRC and the Agreement States.*

   This project was chartered and generally viewed as an NRC internal function. The

States were invited early in the process to participate with the NRC in TI 2800/033. However, no state fully participated in the TI or contributed data for the TI. Consequently, no insight on the potential success of the Alliance Option can be drawn.

2. *Provide insights that the Alliance Option has the potential to be a sustainable program structure for the NMP which will result in fewer NRC resources being needed for the development of products needed by NRC and the Agreement States.*

   The background and origin of this pilot project do not facilitate drawing insights on this success measure. However, to the extent that the State representative attended meetings of the CRCPD and OAS on behalf of the working group, NRC resources were saved by not sending another working group member to participate in those meetings.

3. *Provide demonstration that States can assume and carry out greater responsibility for the development and maintenance of products under a NMP.*

   The background and origin of this pilot project do not facilitate directly demonstrating this success measure.

4. *Provide greater assurance that individual State programs are willing and able to commit resources, and to produce products on a schedule that can be utilized by NRC and the Agreement States.*

   The background and origin of this pilot project do not facilitate drawing insights on this success measure.

5. *Provide insights into whether the NRC will be able in the future to realize resource savings and efficiency gains through shifting of work to States under an Alliance structure.*

   The background and origin of this pilot project do not facilitate drawing further insights on this success measure.

6. *Provide demonstration that NRC can operate in a NMP framework and will be able to use products which may have been developed by a single State or group of States without the need for major change.*

   The background and origin of this pilot project do not facilitate drawing insights on this success measure.

7. *Provide demonstration that NRC is willing to share with the States the establishment of priorities for the NMP including rule and guidance work needed to support the materials and waste arenas.*

   The background and origin of this pilot project do not facilitate drawing insights on this success measure.

8. *Provide insights to help understand the degree to which Agreement States are aligned with NRC Policy direction to use a risk informed and performance based regulatory*

approach.

The background and origin of this pilot project do not facilitate drawing insights on this success measure.

Conclusion

The routine inspection intervals were adjusted to achieve a more risk-informed approach and regional management discretion was preserved to reduce the inspection interval when a licensee's inspection history indicates poor performance of radiation safety.

The working group developed uniform training modules to explain revised IMC 2800 and the revised routine IPs to regional inspectors and supervisors. The working group members from the regions provided initial and refresher training for inspectors and served as the point of contact for regional inspectors and supervisors during the pilot period. The training sessions were well attended by the regional inspectors and strongly supported by regional management. This arrangement effectively and efficiently resolved informal comments from inspectors during the pilot period and reinforced implementation of the changes to the materials inspection program.

Equal representation from the Agreement States and the NRC was not achieved for Pilot Project No. 5 because TI 2800/033 was an existing activity well before the NMP–Pilot Project implementation plan was developed in January 2003. However, the working group membership included an individual who was appointed to represent the CRCPD and the OAS. In January 2003, the working group charter was amended to incorporate the NMP–Pilot Projects Implementation Plan. Later in 2003, a manager from another State was designated to represent the CRCPD and the OAS as a member of the steering group that approved the work products which were developed by the working group and implemented by the regional offices under the TI. The State representatives contributed valuable insights for the revised materials inspection program, and thus demonstrated the value of the joint effort.

The revision of the materials inspection program was chartered and generally viewed as an NRC internal function. In June 2002, the NRC invited the States to implement the TI. In June 2003, the NRC invited the States to comment on the work products (revised IMC 2800 and routine IPs) and to provide their inspection data. The working group desired to compare the TI data with the States' inspection data. However, no state responded to these invitations to voluntarily participate during the pilot period and the analysis of the TI. In May 2004, NMSS queried the Agreement States about implementation of revised IMC 2800 and the revised IPs. Seven of the 33 Agreement States responded. All of the responding States indicated that routine inspections are scheduled more frequently than the intervals in revised IMC 2800. In conclusion, no insights are evident from this pilot project for the potential success of the Alliance Option.

RECOMMENDATIONS

The regional inspectors are implementing the final versions of revised IMC 2800 and the routine inspection procedures which are available in the NRC Inspection Manual on the NRC web site. The States may adopt the final versions for their materials inspection programs.

In the future, the NRC should coordinate with the CRCPD and the OAS to encourage voluntary participation by the States. Planning meetings for these entities should include routine discussions about alignment of their respective materials inspection programs to achieve consistency for a risk-informed and performance-based approach to evaluate licensee performance in Agreement and non-Agreement States.

RESOURCES

About 174 hours specifically involved NMP–Pilot Project No. 5 activities, as follows:

Working Group Team Leader ~ 146 hours
State Representative at CRCPD Annual Meeting ~ 8 hours
Working Group Members ~ 20 hours, total