



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

**OFFICE OF THE
INSPECTOR GENERAL**

March 16, 2017

MEMORANDUM TO: Victor M. McCree
Executive Director for Operations

FROM: Dr. Brett M. Baker */RA/*
Assistant Inspector General for Audits

SUBJECT: STATUS OF RECOMMENDATIONS: AUDIT OF NRC'S
REGULATORY ANALYSIS PROCESS (OIG-15-A-15)

REFERENCE: DIRECTOR, OFFICE OF NUCLEAR REACTOR
REGULATION, MEMORANDUM DATED
DECEMBER 22, 2016

Attached is the Office of the Inspector General's (OIG) analysis and status of recommendations as discussed in the agency's response dated December 22, 2016, and supplementary information received on March 3, 2017. Based on these responses, recommendations 2 and 4 are in closed status and recommendations 1 and 3 remain in resolved status. Please provide an updated status of the resolved recommendations by June 30, 2017.

If you have any questions or concerns, please contact me at (301) 415-5915 or Eric Rivera, Team Leader, at (301) 415-7032.

Attachments: As stated

cc: R. Lewis, OEDO
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Audit Report

AUDIT OF NRC'S REGULATORY ANALYSIS PROCESS

OIG-15-A-15

Status of Recommendations

Recommendation 1: Develop and implement a formal training/qualification program for cost estimators. The training/qualification program can be incorporated into the office instructions and procedures of the NRC offices with regulatory analysis responsibilities.

Agency Response Dated
December 22, 2016:

The Office of Nuclear Reactor Regulation (NRR) issued its regulatory analysis training/qualification program, PRMG-TRNG-02, "Cost Analyst Qualification Procedure, Rev. 0" on February 18, 2016. The NRR cost analysts expect to complete their qualifications by August 2017. The staff's intent was to incorporate this qualification plan in the next update of NRR office instruction ADM-504, "Qualification Program." However, since issuing this qualification procedure, the Commission has approved a plan to centralize agency specialists in rulemaking (and cost analysts) in a Rulemaking Center of Expertise that will be located in the Office of Nuclear Material Safety and Safeguards (NMSS). As this consolidation occurs, the Rulemaking Center of Expertise Implementation Team will work with the impacted offices to incorporate this program into NMSS office instructions and procedures in accordance with agency processes.

Target Completion Date: Completed

OIG Analysis: The proposed corrective action addresses the intent of OIG's recommendation. This recommendation will be closed when OIG receives and reviews documentation that the training/qualification program for cost estimators has been incorporated into NMSS office instructions and procedures, and that it has been implemented.

Status: Resolved.

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Status of Recommendations

Recommendation 2: Implement established knowledge management techniques for the regulatory analysis program.

Agency Response Dated
March 3, 2017:

The NRC made significant progress in improving the adequacy of the regulatory analysis process and in managing and transferring NRC cost analysis knowledge within the agency. Specifically, the NRC is implementing the following knowledge management techniques for the regulatory analysis program:

1. Rebuilt the NRC's cost analyst capabilities

NRC hired four cost analysts in the first half of 2015 filling all four vacancies on the Regulatory Analysis Team of the NRR Policy and Rulemaking Branch for a total of five full-time equivalents (FTEs). NMSS Rulemaking and Project Management Branch has one FTE dedicated to developing regulatory analyses. This results in a threefold increase in agency capability.

2. Established a formal cost analyst qualification program

The NRC has established a formal cost analyst qualification program, Policy and Rulemaking Branch (PRMB)-TRNG-02, "Branch-Specific Training Plan for Cost Analysts, Revision 0 which became effective on February 18, 2016. This training and qualification program requires the trainee to complete a combination of formal classroom training, self-study exercises, and on-the-job training activities, each of which are designed to help them learn information or practice a skill that is important to performing the job of an NRC cost analyst. Upon completion of each training module, the trainee meets with the NRR PRMB Chief or the Regulatory Analysis Team Lead to establish that the learning concepts (e.g., evaluation criteria) were met. Upon satisfactory completion of the 418 hour qualification plan, the trainee demonstrates their mastery of the program contents by passing an oral qualification board examination to receive their cost analyst qualification.

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Status of Recommendations

Recommendation 2, (Cont.):

Currently, four cost analyst trainees are completing this qualification program and their completion percentage range from approximately 70% to 90% complete with the training modules. Each trainee is expected to pass their oral qualification board examination by August 2017.

3. Established individual development plans for all Regulatory Analysis Team members

These individual development plans review the strengths and needs of each Regulatory Analysis Team member and provides a path for further specific development, growth experiences, mentoring, coaching, and other learning for these employees to meet their career goals and to enable the NRC to fulfill its functional expertise and leadership needs. These plans include development activities that would make each individual ready to assume positions with different or more challenging responsibilities, as well as to support the critical skill set needs of the agency.

Working with the Regulatory Analysis Team members in implementing these development plans helps to ensure a pipeline of enough near and longer term high quality candidates to assume key roles.

4. Rotational assignment opportunities in the Regulatory Analysis Team

A rotational assignment allows the participant to gain a broader perspective of the role of the NRC cost analyst in the regulatory process and provides an opportunity for the participant to be immersed in the work performed by cost analysts on a temporary basis, which could lead to a permanent career opportunity in the future. These assignments allow the participant to gain a broader perspective on cost analysis through assignments, projects, and working with the Regulatory Analysis Team members and provide the opportunity to groom the participant for a future cost analyst position.

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Status of Recommendations

Recommendation 2, (Cont.):

Currently, one individual is performing a 2-month rotational assignment with the Regulatory Analysis Team. Management is considering additional candidates from other offices, with the appropriate skill sets, for rotational opportunities.

5. Participation in updating outdated cost-benefit guidance documents and incorporation of good practices

The Team Lead and the five NRC cost analysts are participating and contributing to the update of NUREG-1530, "Reassessment of NRC's Dollar Per Person-Rem Conversion Factor Policy" and the update and restructuring of NUREG/BR-0058, "U.S. Nuclear Regulatory Commission Guidance on Performing Cost-Benefit Analyses;" and NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook" into a single guidance document, NUREG/BR-0058, Rev. 5. These guidance documents represent the cornerstone of NRC's cost-benefit guidance. By participating in the activities associated with the updates to these guidance documents, the cost analysts are obtaining a comprehensive understanding of the bases for this guidance.

The NUREG/BR-0058 update incorporates improvements in methods for quantitative cost-benefit analyses, including the treatment of uncertainty and the development of realistic estimates of the cost of implementing proposed requirements. The updated guidance includes relevant best practices identified in Government Accountability Office (GAO)-09-3SP, "GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs," issued March 2009 and recommendations from GAO-15-98, "Nuclear Regulatory Commission: NRC Needs to Improve Its Cost Estimates by Incorporating More Best Practices," dated December 12, 2014.

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Status of Recommendations

Recommendation 2, (Cont.):

6. Established a contractor independent cost estimating capability

An independently generated cost estimate was performed as part of a pilot program to determine whether qualified cost analysts using other estimating methods produce similar results to those estimated by the NRC staff. The staff cross-checked its results, which are documented in the draft regulatory analysis for proposed rule: "Approval of American Society of Mechanical Engineers Code Cases." Confidence in the estimate increases when alternative methods produce similar results, which leads to greater credibility in NRC regulatory analyses and knowledge sharing, as well as the transfer of external cost estimating expertise with the staff.

7. Established regulatory analysis web site for knowledge management

The rulemaking and policy branch of NRR maintains a regulatory analysis web site to improve information sharing and captures critical knowledge on regulatory analyses contributed from existing staff, staff departing the agency, and staff who have already departed. This web site provides information on previous projects, reference material, training materials, and tools for performing cost benefit analysis.

8. Provided substantive cost-benefit on-the-job training assignments that resulted in NRR Office Director recognition for their work products

The four cost analysts are assigned highly visible agency projects working under the supervision of the Regulatory Analysis Team Lead. These assignments include:

- Proposed Revision to NUREG-1530, "Reassessment of NRC's Dollar Per Person-Rem Conversion Factor Policy"

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Status of Recommendations

Recommendation 2, (Cont.):

- Proposed Revision to NUREG/BR-0058, "U.S. Nuclear Regulatory Commission Guidance on Performing Cost-Benefit Analyses"
- Emergency Core Cooling System Performance during Loss-of-Coolant Accidents Final Rule (10 CFR 50.46c) regulatory analysis
- Draft Regulatory Basis for Power Reactor Decommissioning Rule

As a result of their efforts, two cost analyst trainees received a Team Award for their contribution to the Emergency Core Cooling System Performance during Loss-of-Coolant Accidents Final Rule and a third cost analyst trainee received an NRR Employee of the Month award for her contribution in leading the proposed revisions to NUREG-1530 and NUREG/BR-0058.

9. Held Knowledge management sessions

The Regulatory Analysis Team hosts sessions to improve information sharing and to discuss techniques that can be used or which is useful in performing regulatory analyses. A sampling of these past information sharing sessions include:

- 3/22/2016 – Severe Accident Progression: containment Performance under Severe Accident Conditions
- 6/7/2016 – Severe Accident Issues and Source Terms
- 8/30/2016 – @Risk application tips and tricks
- COE cross training between NRR and NMSS cost analysts.

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Status of Recommendations

Recommendation 2, (Cont.):

Scheduled future information sessions include:

- 3/15/2017 – Severe Accident Regulatory Information Conference session
- 4/26/2017 – Severe Accident Consequence Analysis: History of Offsite Economics Consequence in Regulatory Framework

10. Lessons learned, peer assist / peer review, and job sharing knowledge management

As a common practice, the Regulatory Analysis Team Lead assigns a lead cost analyst to each project and backup cost analyst, in which the lead cost analyst is responsible for performing the assignment and the backup is available and knowledgeable to step in for the lead and to perform a review of the lead's work before it is reviewed and concurred on by the Regulatory Analysis Team Lead. This knowledge management technique creates awareness of standards and quality of performance and improves the collaboration between cost analysts.

Additionally, the Regulatory Analysis Team cost analysts meet informally with each other and/or with their Team Lead to study for their cost analyst qualification training modules and to share experiences and techniques learned in performing their job assignments.

All of the activities described above support the knowledge transfer of the Regulatory Analysis Team leader to the costs analysts for the purposes of succession planning.

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Status of Recommendations

Recommendation 2, (Cont.):

OIG Analysis:

The proposed corrective action addresses the intent of OIG's recommendation. OIG received and reviewed documentation of several NRR activities that support established knowledge management techniques. OIG reviewed the NUREG/BR-0058 Update, the Draft Regulatory Analyses Proposed Rule, and the Regulatory Analysis Web site that promotes the transfer of knowledge from the Regulatory Analysis Team Leader to cost analysts for the purpose of succession planning. Therefore, this recommendation is considered closed.

Status:

Closed.

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Status of Recommendations

Recommendation 3: Update and implement the cost benefit guidance documents as planned in SECY-14-0002. Incorporate this guidance into office procedures by reference.

Agency Response Dated
December 22, 2016:

The NRC is currently updating these guidance documents, as discussed in the response to Recommendation 2, and will incorporate this guidance into applicable office procedures by reference as revisions to these procedures are made in the future.

Target Completion Date: February 2017 (Draft NUREG will be issued for public comment)

OIG Analysis:

The proposed corrective action addresses the intent of OIG's recommendation. This recommendation will be closed when OIG receives and reviews the updated cost benefit guidance documents, along with evidence that the guidance documents are implemented and incorporated into office procedures by reference.

Status:

Resolved.

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Status of Recommendations

Recommendation 4: Develop and implement procedures to consistently document stakeholder input prior to the proposed rule stage.

Agency Response Dated
December 22, 2016:

The NRC has updated the public meeting checklist located on the NRC Communications web page to include documenting substantive decisions and stakeholder comments in public meeting summaries.

Target Completion Date: Completed

OIG Analysis:

The proposed corrective action addresses the intent of OIG's recommendation. OIG reviewed the recently published official transcript for the February 13, 2017, public meeting on Access Authorization and Fitness-for-Duty Determinations Rulemaking. The purpose of this meeting was to (1) document stakeholder input prior to the proposed rule stage, and (2) determine whether to proceed to the proposed rule stage. OIG's review of the official transcript confirmed that NRC offered stakeholders several opportunities and methods to express views and input on this proposed rulemaking activity. Therefore, this recommendation is considered closed.

Status:

Closed.