



United States Nuclear Regulatory Commission

Protecting People and the Environment

Action Plan

Risk-Informed Decision-Making

Operating Reactor Business Line

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1.0 BACKGROUND

On May 11, 2017, the U.S. Nuclear Regulatory Commission (NRC, the Commission) was briefed on risk-informed regulatory activities by nuclear industry representatives and the NRC staff. The briefing included a status of the NRC's and industry's risk-informed initiatives and an overview of successes and areas of focus for advancing risk-informed regulation.

On June 12, 2017, the Office of Nuclear Reactor Regulation (NRR) senior leadership met to discuss how NRR should enhance how it integrates risk into its decision-making procedures and processes and increase the staff's understanding of risk and risk tools. NRR senior leadership developed a mission statement, supporting objectives, and tasks that the staff should complete to enhance the integration of risk into our decision-making procedures and processes.

On June 26, 2017, the Commission issued staff requirements memorandum (SRM)-M170511 (Reference 1) in response to the May 11, 2017, meeting and directed the staff to provide the Commission with an information paper discussing its plans for increasing staff capabilities to use risk information in decision-making activities.

On June 29, 2017, the Director of NRR issued a memorandum to NRR management (Reference 2) to summarize the June 12, 2017, meeting and task them to continue the development and inclusion of risk considerations in licensing reviews. In addition, this memorandum tasked NRR management with actions to disposition related recommendations from a differing professional opinion (DPO) panel review (References 3, 4, and 5) regarding two emergency license amendments issued on December 23, 2016 (Reference 6), and January 4, 2017 (Reference 7), for Palo Verde Nuclear Generating Station (Palo Verde), Unit 3, involving diesel generator allowed outage times (AOTs).

The staff responded to SRM-M170511 by SECY-17-0112 on November 13, 2017 (Reference 8), which provided the staff's proposal for increasing its capability to use risk information in decision making and described challenges towards further progress in risk-informed decision-making (RIDM) and measures that the staff is taking to overcome these challenges.

Separately, by memorandum dated January 25, 2018 (Reference 9), the NRC's Executive Director for Operations (EDO) tasked the staff (i.e., the Transformation Team) to identify potential transformation(s) to the NRC's regulatory framework, culture, and infrastructure. This Transformation Team received internal and external stakeholder feedback on the need for consistent and expanded use of RIDM. Specifically, the Transformation Team received feedback from stakeholders on the need for a systematic, consistent approach to utilizing RIDM in licensing to scale the breadth and depth of review and more fully leverage existing internal and external information.

This NRR RIDM action plan implements the staff's proposal contained in SECY-17-0112 and the tasks outlined in the June 29, 2017, NRR director memorandum. Additionally, the RIDM action plan has been revised to reference the feedback received by the Transformation Team. This action plan is a living document and will be updated quarterly or as needed. The NRC staff used LIC-502, Revision 3, "Procedure for Development, Implementation, and Management of Action Plans," dated March 23, 2017 (Reference 10), with variations to create this action plan. The NRR RIDM team is additionally available to support other NRC office activities to enhance RIDM in their programs.

2.0 NRR RIDM TEAM

SECY-17-0112 states that it focuses on RIDM for the reactor program (i.e., operating and new reactors); however, it also discusses next generation advanced non-light water reactor developers, which are increasingly using probabilistic risk assessment (PRA) throughout the design process. Recognizing that successful execution of these RIDM strategies should benefit both current and future licensees, the Risk-Informed Steering Committee (RISC), which includes senior leader representatives from across the agency, may be engaged to disseminate NRR findings and practices to other offices/regions. Thus, though the current focus of this action plan is specific to NRR, ideas and strategies from the NRR RIDM project may feed into agencywide programs via the RISC.

The NRR RIDM team includes staff from the Office of New Reactors (NRO) for awareness and to provide NRO insights on their experiences using RIDM, as well as looking forward to the NRR/NRO merger. The NRR RIDM team is also available to support other NRC office/regional activities. Although NRR's efforts have been specifically focused on RIDM associated with licensing actions, the NRR action plan has been shared with other offices/regions as a potential model to develop a plan that addresses their specific office needs. During Phase 2, the staff briefed regional management on the NRR RIDM effort to further raise the visibility of the initiative. As further progress on RIDM is made in each individual office, evolution to an agencywide RIDM effort may be pursued.

Figure 1 provides an overview of the RIDM team. The team's Executive Sponsor is the NRR Deputy Director for Engineering. There are four Senior Executive Service (SES) Champions from the Division of Operating Reactor Licensing (DORL), Division of Risk Assessment (DRA), Division of Safety Systems (DSS) and Division of Engineering (DE). Each SES Champion provides oversight on the direction of their assigned team(s).

2.1 Project Management Structure

Below is a description of the roles and responsibilities of each of the positions of the NRR RIDM team.

- **Executive Sponsor:** Provides policy direction on the NRR RIDM project.
- **SES Champions:** Provide oversight of their task(s) and ensures that the working groups implement the policy direction received from the Executive Sponsor. DORL is the NRR RIDM project management lead, and DRA is the NRR RIDM technical lead.
- **Lead RIDM Project Manager:** The lead DORL RIDM project manager is responsible for generating and implementing the process as defined in this action plan. The project manager will attend the working group meetings to ensure the continuity of the project and address any process-related questions or questions interrelated to another working group's task. In addition, the project manager will update the action plan, as needed, provide updates to the SES Champions (or any issues requiring their attention) during their biweekly meetings, and assist with communicating policy direction received from the Executive Sponsor to the working groups.
- **Working Group Team Leads:** Each working group is assigned a team lead, who serves as the main point of contact for the working group. The team lead is responsible

for facilitating the working group meetings, updating their SES Champion, and coordinating the action items assigned by the lead RIDM project manager.

- **Working Group Branch Chief Advisors:** Each working group is assigned a Branch Chief Advisor, who provides guidance to the Team Leads as needed to assist in the accomplishment of action items.
- **Working Groups:** The working groups are responsible for the management and review of their assigned task.

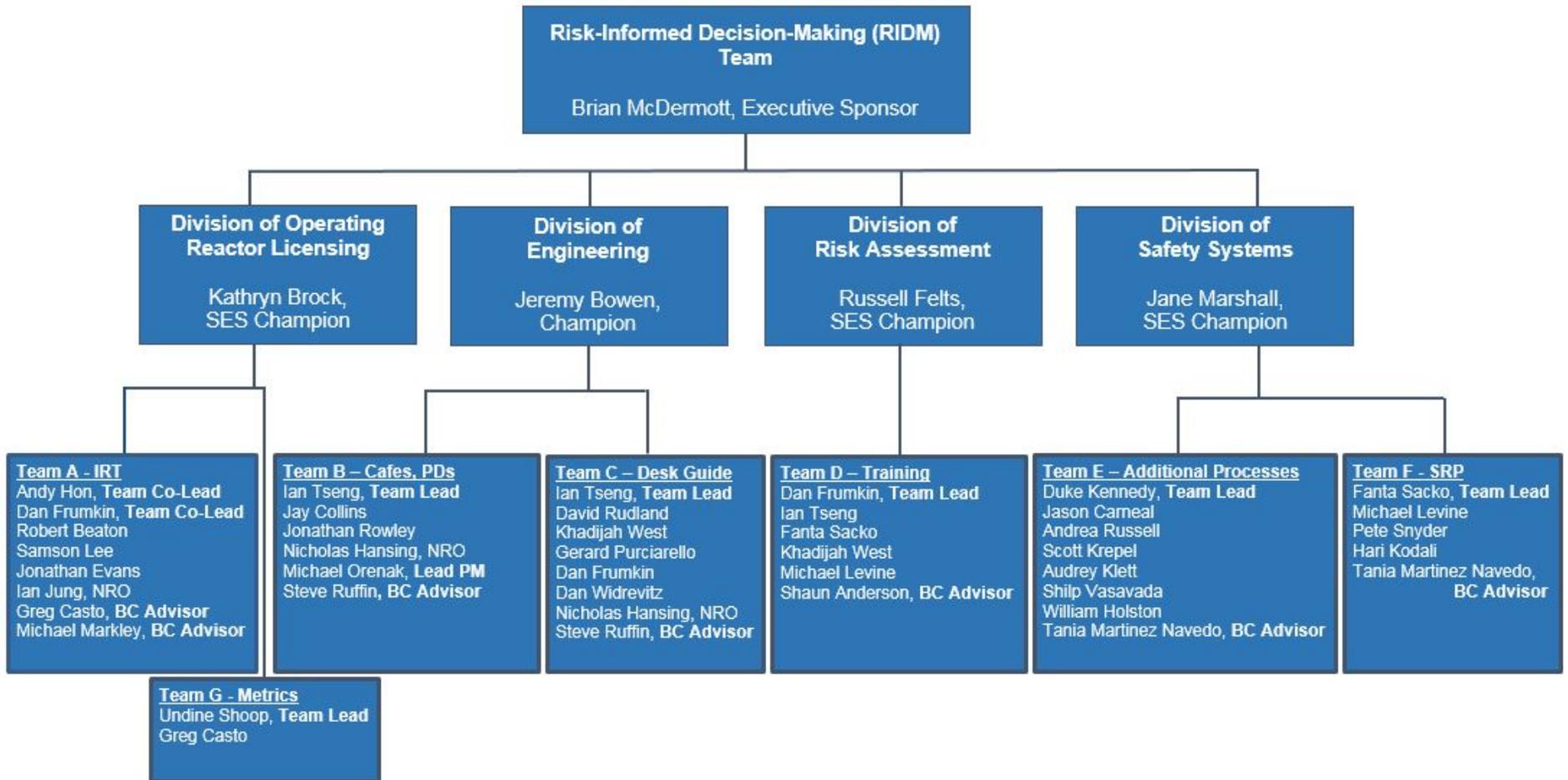


Figure 1: RIDM Team

3.0 NRR RIDM PROJECT PROCESS

SECY-17-0112 identified challenges that inhibit further progress in RIDM. For example, it stated that some NRC staff are not as familiar or experienced with the use of RIDM and the benefits it can bring to the overall regulatory approach. Overcoming this overarching change-management challenge and culture change is essential to making progress in RIDM. To mitigate this overarching challenge, this action plan utilizes a systematic or phased approach which involves engaging with staff to generate and implement recommendations to enhance the use of risk insights in our decision-making activities. The staff believes that utilizing this approach will ensure the successful achievement of the NRR RIDM project mission statement and support the cultural transition from the current processes in place. As with any cultural change, there are questions that arise on why a change is being made and the proper documentation is necessary to justify the proposed changes. Therefore, the action plan's phased approach also includes actions to document and communicate the team's progress, to ensure a more complete understanding by the staff of the benefits achieved by these changes.

This action plan implements two phases. Phase 1 was the evaluation and analysis of the tasks to generate findings and recommendations reports; Phase 2 is implementation of the recommendations.

3.1 Phase 1: Evaluation and Analysis to Generate Recommendations

Phase 1 was the evaluation and analysis phase to support the working groups' findings and recommendations reports. At the completion of Phase 1 in June 2018, the NRR RIDM team published a findings and recommendations report (Reference 11). This report summarized the findings from the information collected and analyzed to justify the proposed revisions to guidance documents and training programs (i.e., recommendations). The recommendations were briefed to the ET/LT at the completion of Phase 1. The Phase 1 recommendations are presented in Table 1.

TABLE 1: SUMMARY OF NRR RIDM PHASE 1 RECOMMENDATIONS

NRR RIDM Tasks 1 and 3 Recommendations	
Recommendation 1	For the purposes of implementing an integrated review team (IRT) approach, Type 1, 2, and 3 applications should be defined based on the level of probabilistic risk assessment information in licensees' submittals.
Recommendation 2	Implement the IRT roles and responsibilities on a trial basis from July through October 2018.
Recommendation 3	Implement the IRT processes on a trial basis from July through October 2018.
Recommendation 4	After a trial implementation period from July through October 2018, staff will assess feedback and adjust the roles, responsibilities, and processes prior to updating office instructions (OIs), guidance, and training, which will be accomplished via the NRR ticketing process. The ticketing to update guidance, OIs, and training will be created by December 31, 2018.
Recommendation 5	After a trial implementation period of the IRT process, implement permanent RRPS changes, as modified based on feedback during the trial implementation period, via ticketing. The ticketing to update RRPS will be created by December 31, 2018.
Recommendation 6	By November 30, 2018, NRR divisions should determine whether their processes that were not covered within the IRT trial basis could be enhanced using the IRT approach or a similar process and develop separate plans for updating those processes, if applicable. If NRR divisions determine that their processes should be enhanced, NRR will create tickets by December 31, 2018, to update those processes.
NRR RIDM Task 2 Recommendations	
Recommendation 1	Establish NUREG-2122, "Glossary of Risk-Related Terms in Support of Risk-Informed Decision-making," as the main glossary for risk-related terms so that there is one authoritative source.
Recommendation 2	Recognizing that the five principles in Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (Reference 12), are well known, develop guidance for use of other principles that are important to RIDM.
Recommendation 3	Develop a desktop glossary of terms and make available as a quick reference guide for more commonly used RIDM terms.
Recommendation 4	Enhance the current review guidance and office procedures to place greater emphasis on using risk insights.
Recommendation 5	Develop guidance (e.g., office instruction) that identifies the hierarchy of RIDM documents, provides a roadmap on which RIDM documents to use, and complements current regulatory approaches, as appropriate.
Recommendation 6	Develop training for staff to facilitate using risk insights for reviews that do not require probabilistic risk assessment.

Recommendation 7	Augment position descriptions and performance appraisal elements and standards to include the use of risk information and risk insights to enhance decision-making.
NRR RIDM Task 4 Recommendations	
Recommendation 1	Provide training to staff on the expectations memorandum, “Current Expectations for Using Existing Guidance for Reviewing License Amendment Requests for Diesel Generator Technical Specification Completion Time Extensions.”
Recommendation 2	Implement the revisions to NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants” (SRP) Branch Technical Position (BTP) 8-8, “Onsite (Emergency Diesel Generators) and Offsite Power Sources AOT Extensions” (Reference 13).
Recommendation 3	Revise SRP Section 16.1, “Risk-Informed Decision-making: Technical Specifications,” to include key points of the expectation memorandum, and to reference the current version of RG 1.177, “An Approach for Plant-Specific, Risk-Informed Decision-making: Technical Specifications” (Reference 14).
Recommendation 4	Revise RG 1.177, “An Approach for Plant-Specific, Risk-Informed Decision-making: Technical Specifications,” to address (1) long-duration completion times for one-time extensions and (2) backstop completion times.
Recommendation 5	All NRR staff should have risk-informed application training, training on RG 1.200, “An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities” (Reference 15), RG 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” and RG 1.177, “An Approach for Plant-Specific, Risk-Informed Decision-making: Technical Specifications,” and associated refresher training on integrated reviews every 24 months.
Recommendation 6	All NRR staff should have training on how to review/disposition license amendment requests with risk insights.

3.2 Phase 2: Implementation of the Recommendations

Phase 2 is defined as the implementation phase of the NRR RIDM project. This phase implements the working groups' recommendations from Phase 1. The Phase 2 Implementation Plan is illustrated in Figure 2.

The Phase 2 Implementation Plan was generated by combining the 21 recommendations from Phase 1 into 13 Implementation Items. For example, Task 2 and Task 4 both produced recommendations to conduct training. For Phase 2, these recommendations were divided into Implementation Item Number 6, for high-level training, and Implementation Item Number 7, for branch-specific training. Each Implementation Item was then assigned to a team. Teams are identified by letters A through G. Section 4.0 of this action plan details the scope of work and the responsibilities of each team.

RIDM Phase II

Phase I Task	Phase I Recommendation	Description	New Item #	Team	ACTIONS		TRAINING		GUIDANCE		BEYOND PHASE II	
					July	August	September	October	November	December		
Task 1/3	1	Define Type 1, 2 & 3 applications	1	A	DEFINE TYPES I, II, III							
Task 1/3	2/3/4	IRT roles & responsibilities trial basis, obtain feedback and assess	2	A	IRT TRIAL BASIS				EVALUATE FEEDBACK	→ 5, 7, 9, 10, 11		
Task 2	7	Augment position descriptions and performance appraisal elements and standards	3	B	DRAFT LANGUAGE - POSITION DESCRIPTIONS AND PERFORMANCE ELEMENTS					TICKET FOR 2020		
Task 2		Regional Cafes	4	B		REGIONAL CAFÉS			ANALYZE CAFÉ RESULTS	ASSESS REGIONAL CAFÉ RESULTS' IMPACT ON GUIDANCE/TRAINING	→ 5, 7, 9, 10, 11	
Task 1/3	4	Training on IRT	5	A					TICKET IRT TRAINING	2,4	CONDUCT IRT TRAINING	
Task 2/2/4/4/4	1/6/1/5/6	Training on RG 1.474, RG 1.200, RG 4.477, NUREG 2122, risk insights, expectation memo	6	D	DEVELOP HIGH LEVEL TRAINING (ALL STAFF)					TICKET HIGH LEVEL TRAINING		CONDUCT HIGH LEVEL TRAINING (ALL STAFF)
Task 2/2/4/4/4	1/6/1/5/6	Training on RG 1.474, RG 1.200, RG 4.477, NUREG 2122, risk insights, expectation memo	7	D	DEVELOP BRANCH SPECIFIC TRAINING (TECHNICAL REVIEWERS)				UPDATE BRANCH TRAINING BASED ON IRT TRIAL FEEDBACK	TICKET BRANCH SPECIFIC TRAINING		CONDUCT BRANCH SPECIFIC TRAINING
Task 2	2/3/5	Guidance for use of risk principles, desktop glossary, hierarchy of documents	8	C		DEVELOP DESKTOP GLOSSARY & GUIDANCE				FINALIZE GLOSSARY & GUIDANCE		
Task (1/3)/(1/3)/2	1/4/4	Update OIs to reflect Type 1, 2, 3 applications and IRT roles/responsibilities/process	9	A					IDENTIFY OIs TO UPDATE	2,4	TICKET OI UPDATES	UPDATE OIs FOR IRT
Task 1/3	5	Update RRPS to reflect IRT	10	A					IDENTIFY RRPS CHANGES FOR IRT	2,4	SUBMIT REQUESTS FOR RRPS CHANGES TO CCB	UPDATE RRPS FOR IRT
Task 1/3	6	Identify other processes that could use IRTs. Update OIs, guidance, training for other processes	11	E	IDENTIFY OTHER PROCESSES FOR IRT				IDENTIFY OIs TO UPDATE (OTHER PROCESSES)	TICKET OI UPDATES (OTHER PROCESSES)	2,4	UPDATE OIs FOR IRT (OTHER PROCESSES)
Task 4	2/3/4	Revise BTP 8-8, SRP 16.4, RG 4.477	12	F	IDENTIFY RESOURCES & ASSIGN RESPONSIBILITIES					TICKET DOCUMENT UPDATES		UPDATE DOCUMENTS
--	MJ	Update Metrics	13	G	50.69 METRICS	SAFETY STRATEGY 2 METRICS			FINALIZE RIDM METRICS			

Figure 2: RIDM Phase 2 Implementation Plan

4.0 NRR RIDM SCOPE OF WORK

This project is currently in Phase 2. Sections 4.1 through 4.7 of this action plan provide the objectives, approach, output, and expected outcome of each Phase 2 team.

4.1 NRR RIDM Team A

4.1.1 Objectives

The NRR RIDM Team A is responsible for Implementation Items 1, 2, 5, 9, and 10, which are related to the IRT approach to processing licensing actions. These Implementation Items were generated from Tasks 1 and 3, Recommendations 1 through 5, and Task 2, Recommendation 4.

4.1.2 Approach

Team A is performing a trial of the IRT process. Team A identified candidate licensing actions and implemented the IRT process on them through October 2018. Team A solicited feedback on the process via survey and focus group interviews with the staff participants on the candidate projects throughout the period. In November 2018, Team A is evaluating the survey and interview results and developing procedural changes to the IRT process based on feedback. Team A will then identify NRR OIs that need to be revised to reflect the new process. This information will also be used by Team D for their training activities; see Section 4.4 of this action plan for more information.

4.1.3 Output

Team A will recommend updates to processes and related guidance that could be enhanced by using additional risk insights or the IRT approach. By December 31, 2018, Team A will ticket updates to guidance documents related to the processes, as applicable. Team A expects to issue tickets to update LIC-109 (Acceptance Reviews), LIC-101 (License Amendment Requests), LIC-102 (Relief Requests), and other OIs as applicable. Team A will identify any RRPS functional needs and will request changes through the Configuration Control Board.

4.1.4 Expected Outcome

The expanded use of IRT to include risk insights in current NRR licensing processes is expected to focus integrated review efforts on issues with the greatest safety significance. The use of the IRT approach is expected to improve the quality of the regulatory products, efficiency, and time estimates. This will be accomplished through early collaboration between technical reviewers and risk analysts, as well as among members of multidisciplinary review teams in general.

4.2 NRR RIDM Team B

4.2.1 Objectives

The NRR RIDM Team B is responsible for Implementation Items 3 and 4. Item 3 was generated from Task 2, Recommendation 7, which recommended augmenting position descriptions and performance appraisal elements and standards to include the use of risk information and risk

insights to enhance decision-making. Item 4 is a follow-up to the risk cafés that were held at NRC headquarters during Phase 1. The purpose of Item 4 is to conduct similar risk cafés in the NRC regional offices, and to assess the café results and evaluate their impact on guidance and training updates.

4.2.2 Approach

Team B worked with the Branch Chief Council to develop RIDM language that was approved and inserted into staff GG fiscal year 2019 (FY19) performance plans. Team B will also be providing prototypical recommendations to update staff position descriptions for incorporation during parallel efforts during the NRR and NRO merger.

Additionally, Team B has been working with regional staff to support the regional offices in their development and running of a pre-café online survey and regional risk cafés. The team worked with Region II to conduct a pilot risk café; and questions were developed for use in the online survey that will support the regional risk cafés, which are expected to be run during the December Counterparts Meetings.

4.2.3 Output

In implementing Item 3, Team B provided suggested updates for insertion into staff FY19 performance plans.

In implementing Item 4, Team B is supporting the regional offices in their development and running of regional risk cafés. Team B will help in running a pilot risk café, complete implementation of a pre-café online survey, and complete processing of the results of the pre-café online survey.

4.2.4 Expected Outcome

The changes to the position descriptions and performance appraisal elements are expected to increase awareness of RIDM among NRR staff and be part of the culture change to hold staff accountable for the use of risk information and risk insights in their work.

By supporting risk café activities in the regions, we will help both headquarters and regional staff and management to better understand how the regions understand and use risk, as well as their attitudes toward future use of risk. This understanding could help to inform inspection program changes and inform actions toward promoting the attitude and culture changes needed to expand the use of risk in the regions.

4.3 NRR RIDM Team C

4.3.1 Objectives

The NRR RIDM Team C is responsible for Implementation Item 8. Item 8 was generated from Task 2, Recommendations 2, 3, and 5.

4.3.2 Approach

Team C is responsible for the production of guidance for the use of risk principles in licensing reviews, the development of a desktop glossary of risk-related terms, and guidance regarding the hierarchy of RIDM documents.

4.3.3 Output

Team C will produce a desktop guide, including a glossary of risk-related terms and an overview of the IRT process to be completed by December 31, 2018.

By December 31, 2018, Team C will develop an outline of a RIDM roadmap, providing pointers to and guidance regarding the hierarchy of existing RIDM documents. Completion of the roadmap will require additional interaction with stakeholders and will be ticketed for a later date.

By December 31, 2018, Team C will assess the need for, and issue a ticket for, potential updates to existing guidance for the use of risk principles in licensing reviews.

4.3.4 Expected Outcome

These efforts will help to alleviate the largest roadblocks identified during Phase I of the RIDM project. These include the need for more specific guidance on how staff can use risk, and prohibitive language that prevents the staff from using risk in their work. These changes are expected to increase consistency and common understanding of RIDM and risk-related terms among NRR staff.

4.4 NRR RIDM Team D

4.4.1 Objectives

The NRR RIDM Team D is responsible for Implementation Items 6 and 7. Team D was generated from Task 2, Recommendations 1 and 6, and Task 4, Recommendations 1, 5, and 6, which recommended creating and providing training to the NRC staff. Team D will plan and develop training for technical and risk analyst staff to promote culture change and to implement processes that use the IRT approach or a similar approach using risk insights.

4.4.2 Approach

Team D is following the activities of Teams A, B, and C, to determine what training opportunities exist. Team D is preparing a web-based tutorial about the result of Phase 1 and general risk concepts for iLearn. Team D is also exploring developing examples or case studies of where integrating PRA information has been successful in improving regulatory effectiveness. Team D intends to leverage iLearn, case studies, face-to-face presentations, and other means to achieve the objectives. For example, case studies are intended to provide practical examples for the web-based training. Since training generally follows the development of guidance, the Team expects training development to lag the completion of activities for Teams A, B, and C, and training is expected to continue for new staff and possibly include recurring training.

4.4.3 Output

Team D is providing the web-based tutorial about Phase 1 and general risk concepts for use. Team D hopes to develop concise case studies of where PRA information was integrated into technical reviews that were not submitted under RG 1.174. Team D will be successful, if by December 31, 2018, it accomplishes the following:

- (1) Develop a web-based tutorial on RIDM,
- (2) Collect and summarize at least three RIDM case studies, and
- (3) Ticket additional training to support Team A, B, C, E, F, products as needed.

Any training for the IRT approach that is needed will be ticketed to be developed after December 31, 2018, depending on the scope and schedule for development of IRT guidance.

4.4.4 Expected Outcome

The expanded use of risk insights is expected to increase awareness of RIDM among NRR staff. Training staff on the use of risk in NRR processes is expected to improve communication between technical reviewers and risk analysts by encouraging and supporting the use of a common language and application of risk concepts. Training is also expected to improve staff collaboration through the IRT process.

4.5 NRR RIDM Team E

4.5.1 Objectives

The NRR RIDM Team E is responsible for Implementation Item 11. Item 11 was generated from Tasks 1 and 3, Recommendation 6. Team E is determining whether processes other than licensing actions could be enhanced using the IRT approach or a similar approach using risk insights.

4.5.2 Approach

Team E is interviewing process owners and subject matter experts throughout NRR to determine whether use of the IRT approach or additional risk insights could benefit other processes. Team E identified 16 NRR processes and targeted the following nine for evaluation: license renewal, topical reports, power uprates, environmental reviews, generic communications, orders, backfits, Technical Specification Task Force Travelers (TSTFs), and Task Interface Agreements (TIAs). Based on the interviews, review of current guidance, and follow-up discussions with process owners, Team E will identify the processes and related guidance that should be revised to incorporate RIDM or the IRT approach.

4.5.3 Output

Team E will recommend updates to processes and related guidance to use additional risk insights or the IRT approach. By December 31, 2018, Team E will ticket updates to guidance documents related to the processes, as applicable. Out of nine processes originally targeted, Team E will be successful if eight NRR processes are fully evaluated, and if all identified process improvements are ticketed by December 31, 2018.

4.5.4 Expected Outcome

The expanded use of risk insights in other NRR processes is expected to focus review efforts on issues with the greatest safety significance. The extension of the IRT approach to additional NRR processes is expected to improve the quality of regulatory products, efficiency, and time estimates. This will be accomplished through early collaboration between technical reviewers and risk analysts, as well as among members of multidisciplinary review teams in general.

4.6 NRR RIDM Team F

4.6.1 Objectives

The NRR RIDM Team F is responsible for Implementation Item 12. Item 12 was generated from Task 4, Recommendations 2, 3, and 4. Team F will issue tickets to revise the SRP BTP 8-8, "Onsite (Emergency Diesel Generators) and Offsite Power Sources AOT Extensions," SRP Section 16.1, "Risk-Informed Decision-making: Technical Specification," and RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decision-making: Technical Specification."

4.6.2 Approach

All team members have been tasked to engage the responsible reviewers and process owners to determine the timeline and resources needed to accomplish the objectives. Team F will provide the reviewers with the recommended changes to BTP 8-8 to aid in updating the BTP. Team F will also provide the expectation memorandum for SRP Section 16.1 and RG 1.177 to the respective reviewers.

4.6.3 Output

Team F will ticket the revisions to the applicable guidance documents by December 31, 2018. Team F will be successful if resources are allocated and three tickets are issued for updating BTP 8-8, SRP Section 16.1, and RG 1.177.

4.6.4 Expected Outcome

Revising the applicable guidance documents will unify the NRR staff's understanding of appropriate use of risk information in licensing applications. This effort will increase the staff's understanding of risk and risk tools and align NRR staff on the proper use of agency guidance. This will improve the technical basis for regulatory decisions, while increasing efficiency, effectiveness, and consistency in licensing activities.

4.7 NRR RIDM Team G

4.7.1 Objectives

The NRR RIDM Team G will be responsible for Implementation Item 13. Item 13 was generated from a meeting with the Office of the Executive Director for Operations. In this meeting, the staff was encouraged to develop metrics in or der to measure the implementation of the recommendations, as well as be transparent in holding the staff and organization accountable for supporting the culture change related to risk informed decision making. Team G will develop and finalize RIDM metrics by December 31, 2018.

4.7.2 Approach

Draft metrics related to Safety Strategy #2 of the NRC Strategic Plan were developed and presented to a cross section of managers representing the different NRC business lines. From this meeting, a draft metric was developed to support Safety Strategy #2 for use in the Congressional Budget Justification (CBJ).

4.7.3 Output

An Agency level draft metric was presented to the Performance Improvement Panel (PIP). Comments from the PIP will be used to refine the metric.

4.7.4 Expected Outcome

Team G will develop a metric that supports safety strategy #2 of the NRC Strategic Plan that will be used in the CBJ. Lower level metrics that support the CBJ level metric will also be developed. These metrics will demonstrate that NRR continues to enhance regulatory processes through the use of risk insights.

5.0 PROJECT'S EXPECTED OUTPUT

As noted in SECY-17-0112, significant progress has been made in RIDM, but cultural, process, and technical challenges remain. For example, current reviews that attempted to adopt concepts from the NRR RIDM tasks in this action plan involved significant resources due to process challenges because, in part, review methodology guidelines for integrating risk and traditional engineering insights were not available, and activities under this project to foster a common understanding of the concepts of risk, defense-in-depth, safety margins, etc., are still ongoing. Therefore, the successful completion of this project is intended to address the challenges identified in SECY-17-0112.

The output for each Phase 2 team is discussed in Section 4.0 of this action plan. Table 2 provides a summary chart for the Output and Expected Outcome for each team. Teams A through G are responsible for implementing 21 total recommendations. The project will be considered successful if at least 17 of the 21 (>80 percent) recommendations are implemented as a result of NRR RIDM team efforts.

TABLE 2: SUMMARY OF OUTPUT AND EXPECTED OUTCOMES

Team	Recommendations Assigned	Number Assigned	Output	Expected Outcome
A	Tasks 1/3 Recommendations 1, 2, 3, 4, 5 Task 2 Recommendation 4	6	Controlled Correspondence for Updates: – Updates to OIs LIC-109, LIC-101, LIC-102, and other OIs as applicable – Updates to RRPS to reflect IRT process	– Review efforts are focused on issues with the greatest safety significance – Quality of the end regulatory products is Improved – Efficiency of reviews and accuracy of time estimates are improved
B	Task 2 Recommendation 7 Regional Cafés	2	– Updates to FY19 performance plans – Regional cafés held in all regional offices	– NRR staff awareness of RIDM is increased – Better understanding of NRC staff's comprehension of risk concepts – Staff held accountable for incorporating RIDM
C	Task 2 Recommendations 2, 3, 5	3	Controlled Correspondence for: – RIDM Roadmap – Updates to existing guidance for use of risk principles – Glossary of risk-related terms	– NRR staff has access to tools that will assist with using risk insights – Consistency and common understanding are enhanced throughout NRR
D	Task 2 Recommendations 1, 6 Task 4 Recommendations 1, 5, 6	5	– Web-based tutorial for all NRR staff – Summary of case studies – Controlled correspondence for IRT training	– Awareness of RIDM is enhanced among NRR staff – Common language and application of risk concepts are used – Collaboration on regulatory reviews is improved
E	Tasks 1/3 Recommendation 6	1	– Complete evaluation of eight NRR processes – Controlled correspondence for updating guidance documents for identified process improvements	– Process efforts are focused on issues with the greatest safety significance – Quality of the end regulatory products is improved – Efficiency of processes and accuracy of time estimates are improved
F	Task 4 Recommendations 2,3,4	3	Controlled Correspondence for Updates to: – BTP 8-8 – SRP Section 16.1 – RG 1.177	– Alignment of NRR staff on reviews that include risk information – Efficiency, effectiveness, and consistency in licensing activities are increased
G	Metrics	1	– Finalize Safety Strategy 2 Metrics for FY 21 – Congressional Budget Justification (CBJ) Metrics	– Metrics will evaluate the enhancement of NRR regulatory processes through the use of risk insights
	Total	21	Project Success Criteria (Recommendations Implemented/Assigned)	= 17/21 (>80%)

6.0 COMMUNICATION PLAN

6.1 Key Messages

- The action plan includes a strategic framework (i.e., process) for completing the NRR RIDM project.
- The action plan is considered a living document and will be updated, as needed, to reflect changes to the process or changes to the NRR RIDM tasks.
- The RIDM framework incorporates the five strategies from SECY-17-0112 in response to the June 26, 2017, SRM (Reference 1). The five strategies are (1) evaluate and update guidance, (2) develop a graded approach, (3) enhance mandatory training, (4) advance risk-informed initiatives, and (5) enhance communication.
- Though the current focus of the RIDM Action Plan is specific to NRR licensing activities, ideas and strategies from the NRR RIDM project may feed into agencywide programs or RIDM efforts via the RISC.
- Long-term expected outcomes of the project are:
 - Review efforts are focused on issues with the greatest safety significance
 - Quality of regulatory products is improved
 - Efficiency of reviews and accuracy of time estimates are improved
 - Staff held accountable for incorporating RIDM
 - NRR staff has greater awareness of RIDM
 - NRR staff has access to tools that will assist with using risk insights
 - Common language and application of risk concepts are used
 - Collaboration on regulatory reviews is improved

6.2 Audience and Stakeholders

6.2.1 Internal Stakeholders

Internal stakeholders include the Commission, OEDO, Office of the General Counsel (OGC), NRR, RES, NRO, Office of Nuclear Material Safety and Safeguards (NMSS), Office of Nuclear Security and Incident Response (NSIR), Office of Public Affairs (OPA), Office of Congressional Affairs (OCA), Region I, Region II, Region III, Region IV, and Office of Inspector General (OIG).

6.2.2 External Stakeholders

External stakeholders include the public, licensees, Nuclear Energy Institute (NEI)/industry, public interest groups, the media, and Congress.

6.3 Communication Tools

Below are the communication tools that the staff may utilize to keep internal and external stakeholders informed on the progress of this project. In addition, the internal tools will be used

to (1) collect data to identify gaps in the staff's understanding of the agency's use of risk and (2) train the staff on the proposed revisions to guidance documents and training programs.

6.3.1 Internal Communication Tools

Action Plan:	Provides the strategic framework or process for completing the NRR RIDM project. Since the action plan is a publicly available document, it will also be used as an external communication tool.
Internal Communications:	Briefings, emails, etc. will be provided to headquarters and regional management and/or staff (as well as the Commission), as required, to provide updates on the progress of the NRR RIDM project and help prepare internal stakeholders to communicate to external stakeholders. At the completion of Phase 1, the Findings and Recommendations report was briefed to the NRR Executive Team and the Deputy Executive Director for Reactor and Preparedness Programs. A Commissioner's Assistant Briefing was held in the fall of 2018, as well as a briefing to the Regional Administrators and to the internal RISC.
Focused Interviews/ Questionnaires:	Interview staff with experience in processing risk-informed licensing actions to gain a broad understanding on how the staff uses risk in their decision-making activities. In addition, questionnaires are used to identify the staff's understanding of the agency's use of risk and to enhance or clarify guidance documents and/or training programs.
Workshops/Cafés:	This action plan will leverage the paradigm from the Risk Informed Thinking workshops to communicate to the staff proposed changes made under this project. Also, the cafés will be used to gain a broad spectrum of the staff's (technical reviewers and risk analysts) understanding on how risk is used in the agency's decision-making activities. During Phase 1, cafés were held at NRC headquarters. During Phase 2, cafés will be held in the Regional Offices.
NRR Announcements:	Used to announce the questionnaires and cafés.
Division Meetings:	Provide updates on the progress of this project and training during NRR division meetings.
Regional Counterpart Meetings:	Provide updates on the progress of this project and training during the regional counterpart meetings. Regional Risk Cafés will also be held during the regional counterpart meetings.
Findings and Recommendations Reports:	At the conclusion of Phase 1 of the project, the RIDM team produced a findings and recommendations report to identify proposed changes to the agency's current processes to enhance risk in our decision-making activities, including revisions to guidance documents and training programs. This report is publicly available and can also be used as an external communication tool.

Closeout Report: By January 31, 2019, the RIDM team will produce a closeout report. The report will evaluate the success of the project based on the criteria established in Section 5.0 of this action plan. The report will detail the outcomes of the project and the plan for continuing the expansion of RIDM within NRR. This report will be publicly available and can also be used as an external communication tool.

6.3.2 External Communication Tools

Action Plan: Provides the strategic framework or process for completing the NRR RIDM project.

Public Meetings: A Category II Public Meeting was held during Phase 2. The meeting summary is available at ADAMS Accession No. ML18275A187. At the public meeting, the RIDM Team provided an update to the industry on the RIDM Action Plan Phase I Recommendations and Phase 2 implementation plan. The team also discussed with industry the new IRT licensing process, including an explanation of Type I, II, III applications.

Following the conclusion of Phase 2, the team may utilize the quarterly RISC public meetings to update licensees, NEI, and members of the public on the results of the project, and ongoing efforts to incorporate RIDM into NRR decision-making. Since the RISC public meetings are typically attended by NRC and licensee executives, independent staff level public meetings will be scheduled, as needed, to discuss working level items.

Findings and Recommendations Reports: At the conclusion of Phase 1 of the project, the RIDM team produced a findings and recommendations report to identify proposed changes to the agency's current processes to enhance risk in our decision-making activities, including revisions to guidance documents and training programs.

Closeout Report: By January 31, 2019, the RIDM team will produce a closeout report. The report will evaluate the success of the project based on the criteria established in Section 5.0 of this action plan. The report will detail the outcomes of the project and the plan for continuing the expansion of RIDM within NRR.

7.0 CONTROL PROCESS

The NRR RIDM team recognizes that as this project progresses, there may be instances where tasks need to be revised or additional tasks added to this action plan. If a working group identifies a need to revise or add a task to this action plan, the working group team lead will communicate the revision to their assigned SES Champion and the lead RIDM project manager. The SES Champion and the lead RIDM project manager will communicate the proposed change to the SES Champions to discuss during their biweekly meeting. Once a decision is made by the SES Champions, the lead RIDM project manager will provide a summary on the outcome of the biweekly meeting to the working group team leads and update the action plan, as needed.

8.0 OUTLOOK

The NRR RIDM project, as defined in this action plan, will officially end on December 31, 2018; however, the work to expand the use of RIDM throughout NRR and the agency will continue in 2019 and beyond. It is expected that the RIDM project will result in approximately 15 tickets issued for guidance updates and future training. The total number of tickets will depend largely on the results of the Team E efforts to identify processes throughout NRR that could benefit from the IRT process. A summary of the tickets issued in Phase 2 of the project will be incorporated into the closeout report.

Throughout 2019, key personnel from the RIDM team will continue to monitor the progress of the ticketed activities that are issued at the completion of the project. The lead RIDM project manager will maintain a database of all tickets issued as a result of the project, as well as the expected timeframe for completion of each. Phase 2 Team Leaders A through G will be assigned to maintain awareness of the status of the tickets issued as a result of their individual activities. On a quarterly basis, the Phase 2 Team Leaders will report to the Lead project manager on the status of the tickets, until completion of all tasks. The project will be successful if 80 percent of tickets are on track for on-time completion, as measured on a quarterly basis.

9.0 CONTACT

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SUBJECT: ACTION PLAN: RISK-INFORMED DECISION-MAKING – OPERATING
REACTOR BUSINESS LINE (CAC NO. A11008; EPID L-2017-PMP-0017)
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