

ENCLOSURE 5

Recommendations for Process Enhancements

Recommendations for Process Enhancements

Introduction

This document presents background information on the development of preliminary recommendations for enhancements to the Office of Nuclear Reactor Regulation (NRR) processes not covered by the integrated review team (IRT) trial phase of the Risk-Informed Decision-Making (RIDM) Action Plan. These preliminary recommendations are based on feedback from interviews of process stakeholders, including process owners, project managers, subject matter experts, and technical reviewers; assessment of the existing guidance, both formal and informal; and Team E discussions. Summaries of the interviews are provided for each process evaluated by Team E, followed by the preliminary recommendations. The preliminary recommendations focus on (1) use of additional risk insights, (2) use of the IRT approach or a similar approach, and (3) process improvements and other actions not in the scope of RIDM Phase 2. In some cases, the preliminary recommendations were further developed and included in Ticket Number 6 (see Enclosure 2 to the cover memorandum for this document). In other cases, the preliminary recommendations were modified and included in Enclosure 4 to the cover memorandum for this document or removed from further consideration based on the feedback from process stakeholders.

General Explanation of Risk Insights-related Draft Recommendations

The draft recommendations related to use of additional risk insights focus on developing staff guidance on how to use additional risk insights in other NRR processes. These draft recommendations may include a suggested method for using risk insights or leave it to the discretion of the process owners to make this determination. In some cases, the draft recommendation includes a suggestion that process owners engage with industry to gauge the effectiveness and potential benefits of using additional risk insights.

General Explanation of IRT-related Draft Recommendations

The recommendations related to use of the IRT approach or a similar approach focus on developing staff guidance on how to use an IRT, with or without the inclusion of risk analysts, to better scope NRR reviews or manage complex reviews. In some cases, an IRT approach may be recommended as a first step in deciding whether to enter a formal process. In other cases, an IRT approach could be used throughout a review.

General Explanation of other Draft Recommendations

Other draft recommendations concern process enhancements and other actions that are outside the scope of the RIDM Phase 2 project. These draft recommendations focus on nonrisk-related actions, agencywide processes outside NRR's control, and process changes that should be further considered, but have not yet been demonstrated to have a clear benefit given the potential costs of implementation.

Power Uprates

Process owner: Division of Operator Reactor Licensing (DORL)
References: LIC-112, Revision 1, "Power Uprate Process"; RS-001, Revision 0, "Review Standard for Extended Power Uprates"

Summary of Interview Results

The process of increasing the maximum power level at which a commercial nuclear power plant may operate is called a power uprate. NRR Office Instruction LIC-112, Revision 1, "Power Uprate Process," dated December 3, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML102280310), describes how the NRR staff processes licensees' requests for amendments to implement power uprates. The U.S. Nuclear Regulatory Commission (NRC) regulates the maximum power level at which a commercial nuclear power plant may operate. This power level is used in many of the analyses that demonstrate the safety of the plant and is included in the license and technical specifications for the plant. The licensee may only change these documents after NRC approval. Improvements in instrument accuracy, computational tools and engineering models, in addition to plant hardware modifications, have allowed licensees to request power uprates while maintaining adequate safety margins.

The three categories of power uprates are: measurement uncertainty recapture (MUR) power uprates (less than 2 percent above the current power limit), stretch power uprates (SPUs) (up to 7 percent above the original licensed limit), and extended power uprates (EPUs) (up to 20 percent above the original licensed limit). Guidance for EPUs is provided in Review Standard (RS)-001, Revision 0, "Review Standard for Extended Power Uprates," December 2003 (ADAMS Accession No. ML033640024).

Team E interviewed a power uprate project manager in DORL and three technical reviewers that have worked on power uprates. The interviewers asked questions regarding the use of IRTs and risk insights when reviewing power uprate applications. The project manager indicated that reviews that would benefit from the use of an IRT approach, regardless of whether risk insights are used, to enable reviewers to work together, write one cohesive evaluation, and reduce overlap. The technical reviewers varied in their responses, which ranged from believing that their reviews are independent of other reviewers to needing help from other reviewers. Regarding the use of risk insights, the interviewees indicated that the current review process, which does not use probabilistic risk assessment (PRA) insights, is sufficient without risk insights; however, risk could be used to increase the efficiency of reviews.

Some reviewers suggested risk can be used to justify power uprates beyond 20 percent of original licensed thermal power levels. The project manager stated that many resources were spent trying to justify allowing an MUR that resulted in a total power increase of 20.4 percent increase above the original licensed thermal power. The staff indicated that resources could have been saved had the staff been allowed to use risk insights to justify this change. Other staff cautioned that there may not be a large demand for power uprates in the near future and that the NRC may need to explore the concept of using risk to inform exemptions in more detail; therefore, the staff should caution expending resources in the near term to explore the concept of using risk to justify uprates that would allow more than a 20 percent increase in the original licensed thermal power.

Review of References

The description of the power uprate project management and review in LIC-112 is contained within the section discussing the responsibilities of project managers, technical reviewers, and management and the section discussing performance measures. These sections can be updated with descriptions and expectations regarding the use of IRTs and risk insights by referencing the RIDM Team A products. Appendix D of LIC-112 also describes the major milestones for power uprate reviews. This section can also be updated with milestones that employ the use of IRTs.

LIC-112 and RS-001 state that EPU have been approved for power increases as high as 20 percent above the original licensed thermal power limit. However, the guidance does not appear to contain language that explicitly restricts power uprates to 20 percent. LIC-112 mentions that the 400 hours are estimated to evaluate risk associated with EPUs and 0 hours for MURs and SPUs; however, the office instruction does not contain specific review guidance. RS-001, Attachments 1–3 to Matrix 13, provides the guidance for considering risk information during EPUs. Large power uprates are identified in Appendix D of Section 19.2 of NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition” (ADAMS Accession No. ML071700658), as an example of the type of situation that might create “special circumstances” because they could involve changes for which the synergistic or cumulative effects could significantly impact risk. Attachments 1-3 of RS-001 can be updated to discuss whether risk can be used to justify power uprates beyond 20 percent of original licensed thermal power limit. RS-001 also provides a template safety evaluation. Within this template, the risk evaluation is its own separate subsection, but it is not clear how the risk evaluation may be integrated with the remaining sections of the safety evaluation. LIC-112 can be updated with how to use a graded approach for considering risk for SPUs and MURs, and RS-001 can be updated with how to consider risk insights in the specific technical evaluation sections. The guidance may be as simple as referencing the RIDM Team A products.

Draft Recommendations

Risk Insights Recommendations

1. Update LIC-112 and RS-001 to allow, but not require, the use of risk insights in the staffs’ evaluations and to allow licensees to submit risk-informed submittals for power uprates. The staff currently does not expect any EPU applications within the next 5 years, and changes associated with MURs are limited in scope. The existing review methodologies appear to be sufficient; however, risk insights may help reviewers scope reviews of or make decisions on unique plant-specific changes. The change can involve a reference to the guidance being developed by RIDM Team A.

IRT Recommendations

1. Update LIC-112 to provide the option of using the IRT project management approach (even if risk is not used) at the discretion of the review teams. The IRT approach will help reviewers understand how their areas of review affect other areas of the review and can assist with knowledge transfer for reviewers new to power uprates. The IRT approach can also reduce overlap in reviews. The change can involve a reference to the IRT guidance being developed by RIDM Team A.

Other Recommendations

1. Team E considered recommending a ticket to explore allowing licensees to use a risk-informed approach to justify and the staff to approve applications of power uprates resulting in more than 20 percent above the original licensed thermal power limit. However, because there are no near-term plans for EPU's within the next 5 years, and because of challenges with the availability of staff resources, Team E determined that this recommendation can be revisited if the need arises (i.e., if industry expresses an interest in this approach and plans to submit such applications).

License Renewals

Process owner: Division of Materials and License Renewal (DMLR)
References: **RNWL-100**, "License Renewal Application Review Process"; LIC-105, "Managing Regulatory Commitments Made by Licensees to the NRC"; DMLR Technical Reviewer Manual

Summary of Interview Results

Team E interviewed license renewal project managers and technical reviewers experienced with various aspects of license renewal reviews and preparations for subsequent license renewals. Team E also discussed the draft recommendations with process stakeholders, including the senior license renewal staff, the Chief of the Chemical, Corrosion and Steam Generator Branch (MCCB), and the Director of DMLR.

Regarding the IRT approach, the interviewees noted that license renewal reviews involve many technical disciplines, some of which stand alone and some of which have interfaces with other disciplines. The license renewal project manager is responsible for coordinating the overall review and combining the inputs of the technical branches in the NRC's consolidated safety evaluation of the renewal. Some license renewal project managers already use an IRT approach to manage the license renewal review, however this does not typically involve a risk analyst as a formal member of the review team. The interviewees noted that the status of the various inputs to the license renewal review are tracked, and some project managers meet periodically with all branches involved in the review individually as well as in a group setting. Each area of the license renewal review has multiple items to review, and sometimes hundreds of items. This often requires a technical reviewer to engage with other branches to get needed input. This seems to happen on an informal level, and staff seem well aware of who needs to be covering the various issues. The interviewees explained that risk analysts can be consulted in the case that licensees submit risk insights in their application, but because this is not common, there would not be a significant benefit from always including risk analysts in the review team. The interviewees noted that it may be beneficial to include risk analysts in the review team for subsequent license renewals if applicants increase the use of risk insights in their renewal applications.

Regarding the use of risk insights, the interviewees explained that license renewal applicants currently provide the renewal project manager with a list of the most risk-significant systems in their plant. The renewal project manager can use the list and additional input from the Division of Risk Assessment (DRA) to focus the review efforts on these systems and their components instead of spreading the review evenly over the thousands of items subject to aging management plans. The interviewees described the review of the licensee's aging management plans against the Generic Aging Lessons Learned (GALL) and noted that licensees typically follow the GALL and departures from it are reviewed using engineering judgement and consideration of operating experience on the part of NRC staff. Although Title 10 of the *Code of Federal Regulations* (10 CFR) Part 54 has screening classifications for plant systems, risk insights are not typically considered in this part of the review. Interviewees were of the opinion that risk insights can't be used in the current regulatory framework to exclude components or systems from review. However, recently there have been time-limited aging analyses that included risk insights (e.g., Turkey Point flywheel). One interviewee explained that care needs to be taken in defining how to apply risk insights. Risk is associated with systems/components, but many of the elements of subsequent license renewal application

reviews are broader and may affect multiple systems/components. Issues identified in low-risk components may also be indicative of potential problems in high risk components.

One interviewee described recent efforts to increase the use of risk insights is already underway in the subsequent license renewal review process. DMLR has updated its technical review manual to include this information. However, given that these efforts are relatively new and there have been multiple simultaneous changes to the subsequent license renewal process, it is not yet possible to gauge their impact on the overall efficiency or timeliness of the process.

Based on the interview results, Team E formulated three draft recommendations related to using additional risk insights in the license renewal process. After discussion with process stakeholders (the RIDM Team E member from DMLR, MCCB Branch Chief, and Director of DMLR), Team E decided not to include them as tickets or recommendations.

Draft Recommendations

Risk Insight Recommendations

1. Consider whether licensees can use risk insights to inform the required type and frequency of inspections and tests during the period of extended operation.

It was concluded that the staff would not develop guidance for licensees to use risk insights to inform the required type and frequency of inspections and tests during the period of extended operation. Licensees can revise:

- Their inspection and test requirements using the 10 CFR 50.59, "Changes, tests, and experiments," process.
- The scope of systems, structures, and components that have aging requirements using 10 CFR 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors."
- The scope, extent, or frequency of American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, inspections using risk-informed methods.

Although not directly related to the conduct of inspections and tests during the period of extended operation:

- The staff uses risk insights to inform the depth of review conducted for new applications.
- The staff is processing changes to address using risk informed insights to select the programs that are inspected under Inspection Procedure 71003, "Post Approval Site Inspection for License Renewal" (ADAMS Accession No. ML16013A260).
- During the review of the license renewal application, the staff uses risk insights to assess severe accident mitigation alternatives.

2. Consider whether the “top 20” list submitted by licensees should be made more formal and subject to DRA review.

The staff recommends that no changes be pursued as a result of this recommendation. DMLR’s Technical Reviewer Manual (TRM), Attachment 2, “AMP/AMR/TLAA Audit Preparations and Implementation” (non-public, not in ADAMS); requires the staff to solicit a “list of the 10 to 15 most risk significant components and systems based on risk achievement worth analyses,” from the applicant or the DRA. To date, the applicants have been providing this input by providing the information to the license renewal project manager via email. As stated in Attachment 2 of DMLR’s TRM, this information is not used to make a regulatory decision, but rather only influences the depth of the staff’s review. As a result, the information is not required to be docketed. The staff sees no benefit that would offset the expense to the applicant of having DRA review the applicant’s list. The list provided by the applicant is common information at all utilities.

IRT Recommendations

1. Involve a risk analyst in license renewal team meetings during the acceptance review or early application review stages to identify licensee’s use of risk insights and propose how/when DRA could be involved. Consider adding this to the DORL project manager handbook or appropriate NRR office instruction.

The staff recommends that no changes be pursued as a result of this recommendation. Based on discussions with the individual who made this recommendation, it is recognized that in some instances, an applicant will use risk insights in its evaluation of unique portions of the license renewal application. These risk insights are easily recognized during the review of the application and to date, have had no impact on the formal acceptance review recommendations cited in NUREG-2192, “Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants,” July 2017 (ADAMS Accession No. ML17188A158).

Environmental Reviews (environmental assessments and environmental impact statements)

Process owner: DMLR
References: LIC-203, "Procedural Guidance for Preparing Categorical Exclusions, Environmental Assessments, and Considering Environmental Issues";
10 CFR Part 51

Summary of Interview Results

The current process for writing Environmental Impact Statements (EIS) and related documentation is currently handled by a relatively small team and utilizes a well-defined document template with individual sections assigned to specific people. This team is used to working collaboratively when necessary, but much of the work falls into well-defined bounds based on the breakdown of the work as defined in the EIS template. As a result, an IRT approach would yield little of benefit because there are no significant issues with producing a cohesive document from multiple reviewers, and each member in the team is able to effectively interface with others as needed.

In the EIS process, the only portion where risk information may be provided is in the review of updates to Severe Accident Management Alternatives (SAMA). This portion is already well known and defined through procedures. The remainder of the EIS review process is heavily forced on regulatory compliance with NRC, Environmental Protection Agency, and other Federal and State regulations. The scope of the review is driven more by public involvement than anything else. The regulations in 10 CFR Part 20, "Standards for Protection Against Radiation," could be changed to allow for inclusion of risk insights, but this would be a bigger effort that may not yield a significant benefit (especially given that the relevant environmental regulations do not come solely from the NRC). Therefore, there are currently limited avenues for risk insights to be applied, and existing processes already define how to do so.

One feedback received as part of the interviews with stakeholders in the license renewal process was that the process of issuing the draft EIS as a NUREG was very time-consuming. The suggestion was made to publish the draft EIS as a simple document for public comment, rather than as a formal NUREG. The stakeholders consulted were not aware of a regulatory reason why a NUREG would be required, other than knowing this is consistent with the past practice of how the NRC has handled similar documents.

Draft Recommendations

Other Recommendations

1. Consider issuance of the draft EIS as a normal document for public comment, instead of producing a NUREG.

Backfits

Process owner: Division of Inspection and Regional Support (DIRS)
References: LIC-106, "Issuance of Safety Orders"

Summary of Interview Results

Overall, the interviewees support the use of risk-informed decision making in the backfit process. The interviewees noted that the use of risk information to inform backfit decisions is already contained in NUREG/BR-0058, "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission," April 2017 (ADAMS Accession No. ML17100A480). This document discusses the processes for determining if a proposed action can be considered adequate protection, compliance, or requiring a backfit analysis. NUREG/BR-0058 does not specifically define risk numbers necessary to meet the adequate protection threshold. The interviewees expressed that the decision of adequate protection is ultimately a Commission decision, and that specific risk levels have not been established in order to maintain Commission leeway in these decisions. However, Section 2 of NUREG/BR-0058 provides specific guidance on the use of risk information in backfit analysis for those issues that do not meet the adequate protection or compliance exceptions. A revision of NUREG/BR-0058 is currently under review by the NRC Executive Director for Operations. Any issues regarding the definition of risk insights in NUREG/BR-0058 are likely to be resolved during the concurrence process on this document.

The interviewees also noted that the staff would benefit from a standard approach to interfacing with the DRA, since in their experience it was cumbersome to learn how to frame a question in order to receive meaningful risk information relevant to the issue at hand. In addition, the interviewees expressed that risk information, if available, would benefit the process most if received early in the decision making process. During the process, this information could be shared with the public, and the staff could hold public meetings to discuss risk information with the public and obtain additional information from industry regarding risk numbers, if necessary.

The backfit process potentially affects many agency actions and the early involvement of experts in the decision making process would be beneficial. RIDM Team E members discussed the IRT process with the interviewees, and they were supportive of the use of this process to involve backfit and risk experts in affected agency processes. One interviewee provided background information on risk-informed licensing panels that were used circa 2000 to formally evaluate actions based on available risk information. The risk-informed licensing panels were staffed by agency experts and performed as an expert panel to review agency actions and provide recommendations informed by the available risk insights. This process was apparently abandoned after 2002. In addition, the interviewee discussed the industry panels that were employed in the recent risk prioritization initiative, which served a similar function on the industry side for evaluating issues using both deterministic and risk-informed methods. The processes discussed as potentially benefitting from this approach include rulemaking, generic communications, orders, inspections that go beyond licensing basis information, and changes to technical specifications. If the IRT process were implemented for the backfit process, Management Directive (MD) 8.4, "Management of Facility-Specific Backfitting and Information Collection," or LIC-202, "Procedures for Managing Plant-Specific Backfits and 50.54(f) Information Requests," would need to be updated. One interviewee also supported an increased use of modern collaborative tools, such as OneNote and OneDrive, to accelerate the product development process.

Draft Recommendations

Risk Insight Recommendations

1. Develop a guidance document to the staff on how to interface with DRA to obtain risk information on a given topic.
2. Continue to follow Commission input on the updates to NUREG/BR-0058 and MD 8.4 and make additional recommendations as appropriate.

IRT Recommendations

1. Review and update LIC-202 to include the IRT process, including guidance to involve risk analysts and backfit experts early in the decision making process.

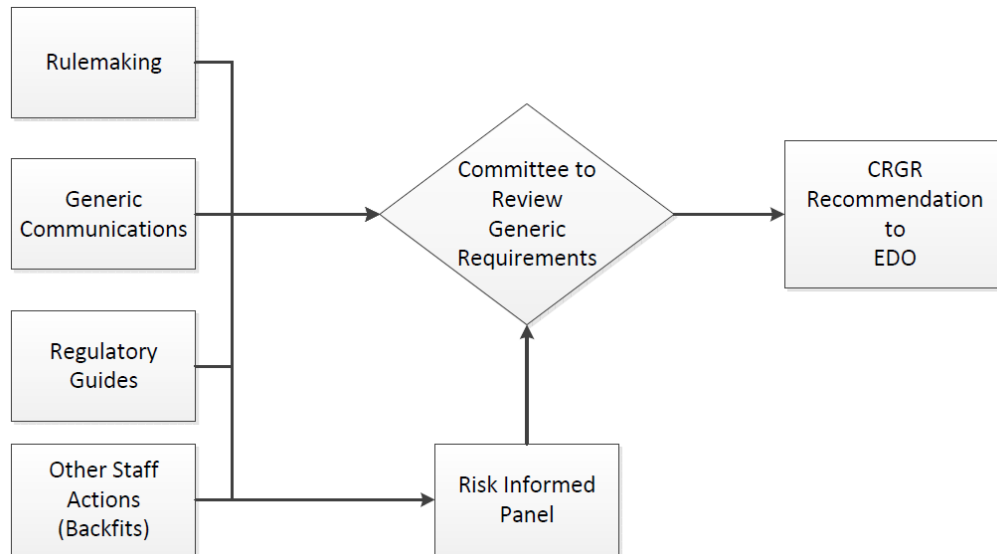
Other Recommendations

1. Consider adding the RIDM/IRT processes to NRR qualification training on backfits as documented in ADM-504, "Qualification Program," or forward this recommendation to the team responsible for training.
2. Recommend that management consider the formation of a risk-informed review panel that would provide an independent evaluation to management regarding the necessity of agency actions. One concept for implementation is provided below, where such a panel would provide independent input to the Committee to Review Generic Requirements in relation to proposed agency actions.

The panel would be like that proposed in the memorandum, "Steering Committee for Risk Informed Activities," JNS-98-31, dated October 13, 1998 (ADAMS Accession No. ML082740310), which describes the charter and composition of the risk-informed licensing panel. The panel would be composed of division directors from within NRR who participate in licensing reviews. A representative from the Office of Research as well as a representative from the Office of the General Counsel would be included as well. The purpose of the panel would also mirror that of the 1998 memorandum. The 1998 memorandum stated, in part, that:

The purpose of this panel is to streamline the review of risk informed licensing actions by serving as a focal point for resolution of technical issues and for guidance on policy implementation to NRR staff. This panel will provide a forum for the staff, licensees, owners groups, or the public to receive management attention on issues. The panel will also monitor the overall implementation of risk informed licensing actions. To be able to operate effectively as a decision making body, this panel has been empowered to resolve technical differences as well as issues associated with implementing risk-informed policy, and to provide direction in those areas that cross branch and division boundaries. The panel will attempt to resolve issues through a consensus process and in other cases will provide a discussion and characterization of alternatives to the NRR Executive Team for final decisions.

This panel could streamline risk-informed reviews, similar to what was done in the past (e.g., see ADAMS Accession Nos. ML050180253 and ML050340394 related to risk issues concerning electrical grid reliability and ADAMS Accession No. ML011770491 related to risk-informed changes to 10 CFR 50.46).



3. The backfit process affects multiple agency processes, including rulemaking, generic communications, orders, inspections that go beyond licensing basis information, and changes to technical specifications. RIDM Team E evaluated many of these processes as part of this effort, with the exception of inspections and rulemaking. These areas could be examined during future efforts to expand the use of RIDM beyond NRR processes.
4. Support and increase the use of collaborative tools such as OneDrive and OneNote to accelerate the pace of product development. The current ADAMS interface adds unnecessary burden to the collaborative process. The staff note that these tools have been used effectively to increase the efficiency of regulatory audits. Consider updating LIC-111, "Regulatory Audits," to encourage the use of collaborative tools to enhance the efficiency of regulatory audits.

Technical Specifications Task Force (TSTF) Travelers

Process owner: DORL; Division of Safety Systems (DSS)
References: LIC-600, "Standard Technical Specifications Change Traveler Review and Adoption Process"

Summary of Interview Results

The TSTF traveler process would benefit from use of the IRT process. Specifically, for complex travelers, this would be a benefit due to the numerous staff typically involved with the traveler (multiple divisions and branches). For simpler travelers (only involving one to two branches and within the same division), the IRT process would not benefit the traveler process, but could be a hindrance. In addition, having a consistent group of staff performing the TSTF traveler reviews and the license amendment requests implementing the approved travelers, could be beneficial because the experience and knowledge gained by the technical reviewers during the process of reviewing the TSTF traveler could provide efficiencies in the reviews of the implementation by licensees.

The TSTF traveler process would not benefit substantially from use of RIDM. Although some TSTF traveler reviews do use qualitative risk insights, it is rare and typically, if risk insights are used, it is in the form of Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis." It may be possible to implement a risk-informed TSTF traveler process, which would fall between the traditional TSTF traveler process and the consolidated line item improvement process. The interviewees didn't believe there is enough benefit to pursue this based on the amount of resources to create a new hybrid process given the history of the amount of travelers using qualitative risk insights or some other nonformal risk information.

Draft Recommendations

IRT Recommendations

1. Recommendation to pursue TSTF travelers as a candidate for implementing IRT process (currently, to some extent, most complex travelers use a form of the IRT process).

Topical Reports

Process owner: Division of Licensing Projects; DSS
References: LIC-500, "Topical Report Process"

Summary of Interview Results

Based on the feedback provided by the interviewees and stakeholders, applying risk insights to topical report (TR) reviews would require significant effort. In addition, none of the interviewees could identify any efficiency gains that would be worth the effort required to incorporate risk insights in the TR review process. The interviewees had mixed sentiments on whether risk insights would be of significant benefit in the TR review process. The industry may benefit from increased use of risk insights in TRs and seems to have at least some interest in doing so, based on occasional attempts to incorporate risk insights into TRs. The interviewees did agree that better guidance and training would be needed to do so, since the current review paradigm is driven by a phenomenological understanding of the technical issues. In some cases, the regulation itself is very prescriptive and may need to be revised in order to use risk insights (e.g., 10 CFR 50.46). The parameters are defined through appropriate deterministic or best estimate plus uncertainty interpretations of the regulations. None of this translates readily to a risk insights framework, and previous attempts to apply risk insights within the current TR review process have generally failed. There have been a few cases where risk insights was submitted as part of TR-like review processes, with varying degrees of success (e.g., Generic Safety Issue 191 or boiling-water reactor suction blockage issues). The NRC staff already pursues such approaches whenever possible, but they generally occur outside the TR review process due to the inherent limitations on the existing process and guidance. A future discussion with industry about the TR review process could include solicitation of feedback on potential benefits from use of risk insights in TR reviews, so the NRC staff can reconsider whether there are areas where the benefits are worth the cost. At this time, the benefits are very unlikely to be worth the resource investment that would be required.

The IRT paradigm may be somewhat useful, but to varying degrees due to variations in the level of complexity of a TR review. Generally, a single lead reviewer is responsible for the safety evaluation, so consolidation of different inputs into a single document is usually not a major issue. Lead reviewers already call upon appropriate subject matter experts to help with specific technical areas, so to some extent, there is a strong culture for collaboration. However, there may be some areas where additional encouragement for collaboration may be beneficial. For example, there have been cases where weak collaboration between a NRC reviewer and contractors led to a deliverable from the contractor not being fully aligned with the NRC reviewer's expectations. This would be a subtle shift rather than a complete process rework.

Draft Recommendations

Risk Insight Recommendations

1. As part of a future engagement with the industry (e.g., public meeting) to discuss LIC-500 and potential TR review process improvements, include risk insights as one of the discussion areas to provide an opportunity for industry to discuss any potential benefits or interest in use of risk insights for TR reviews.

IRT Recommendations

1. Consider small updates to LIC-500 to encourage greater ongoing engagement between all reviewers working on a project, including contractors.

Generic Communications (Generic Letter, Bulletin, Regulatory Issue Summary)

Process owner: DIRS
References: MD 8.18, "NRC Generic Communications Program"

Summary of Interview Results

Overall, the interviewees concurred that the use of risk information for higher level actions, such as generic letters and bulletins, was well-defined by existing procedures. In order to justify these actions, the staff needs to evaluate the risk implications of the issue in question and present their findings to management before entering the generic communication process. The interviewees also concurred that for information notices, risk information would in general not be helpful since information notices are used to communicate operating experience. However, RIDM Team E staff note that risk information is indirectly used in information notices, since a typical trigger for an information notice is a white finding or greater, or a continuing trend of green findings at multiple plants. For regulatory information summaries, the interviewees provided mixed feedback on whether risk information could be used. All of the interviewees seemed to agree that using risk information early in the process to decide whether or not to proceed with a regulatory issue summary would be beneficial. The use of risk information in evaluating the need for regulatory issue summaries is not currently well-defined in existing guidance. Some of the interviewees also noted that reviewers would need additional training on the use of risk insights and the relationship to traditional deterministic methods.

A consistent theme was that the generic communications process owners experienced improved outcomes when the staff involved in a technical issue work with all of the affected organizations on an issue prior to entering the generic communications process. In general, the interviewees expressed that a formalized IRT process would not benefit the generic communications process, mostly because the concurrence chain for generic communications has grown very large and integrating a review team with representatives from all organizations on concurrence may not increase the efficiency of the reviews. While the scope of the concurrence chain is not necessarily within the scope of RIDM, this observation is included here in case the generic communications process is reviewed for process improvements in the future.

In summary, the generic communications process may benefit from a formalized process for the use of risk information in early evaluation of regulatory issue summaries, and consider ways in which to encourage early communication amongst the technical staff in the early development stages of generic communications (e.g., before proposing a generic communication and formally entering the process).

Draft Recommendations

Risk Insight Recommendations

1. Recommend that the ROP Support and Generic Communications Branch consider updating the Generic Communications Branch Handbook to include the use of risk information when evaluating the need to issue a regulatory issue summaries on a case-by-case basis.

IRT Recommendations

1. Update the Generic Communications Branch Handbook to include guidance to the staff for implementing IRT concepts early in the issue development phase. The guidance should be updated to state that the staff should coordinate technical issues with all interested parties prior to proposing a generic communication.

Other Recommendations

1. Consider a future update to MD 8.18 to include high level guidance to the staff for implementing IRT concepts early in the issue development phase, if necessary.
2. Provide IRT training to staff members for use in evaluation of issues early in the development process.

Task Interface Agreements

Process owner: DORL
References: COM-106, "Control of Task Interface Agreements"

Summary of Interview Results

Overall, the interviewees agreed that the use of risk-informed insights as well as the IRT concept would be useful for task interface agreements (TIAs), and could in fact make the TIAs more effective. With respect to risk-informed insights, there are two ways of implementing risk-informed information in the TIA process: (1) during the screening stage of the TIA and (2) during the development of the TIA response.

During the screening stage of the TIA, risk insights could help the regional staff gauge the safety significance of the issue and use the reactor oversight process (ROP) significance determination process (SDP) to determine whether the regional office should ask Headquarters for help, or to just issue the violation. In a more detailed manner, one of the purposes of TIAs is for the regional offices to ask Headquarters whether a certain issue is covered by the plant's licensing basis. Until the TIA is resolved, the regional office usually documents the issue as an unresolved item in its inspection report. TIAs are resource-intensive because of the time it takes to research the licensing basis and figure out the intent of the licensing basis documentation. Although amendments are easily found in ADAMS, the licensee application information is not always in ADAMS and could be contained within microfiche. A risk-informed approach can be used when determining whether to use the TIA process to resolve such an inspection issue. For example, the regional office can gauge the safety significance of the issue, assuming it is not covered by the licensing basis (i.e., assume it is a violation and performance deficiency), and use the ROP SDP to determine whether the regional office should ask Headquarters for help, or to just issue the violation and let the licensee contest it. If the issue would turn out to have greater than green safety significance, then the TIA process can be entered. However, if the issue is minor or of green safety significance, then the regional office should just process the issue as it sees fit, in consultation with regional counsel, and let the licensee use the appeal process if it disagrees with the regional office's decision (the TIA process can be used to address the appeal if it's not already covered elsewhere). Combined with adhering to the TIA process' restrictions regarding backfitting, this approach could reduce the number of TIAs being requested.

During the development of the TIA request or the TIA response, risk insights can be used to better focus the scope of the TIA early in the review.

With respect to the IRT concept, the interviewees agree that the roles of individual reviewers for a TIA are often not well defined, but suggests that an IRT approach could help clarify individual roles. In the past, there were cases where the PRA specialists are first involved at the end of the process. The PRA specialist was not in alignment with the work completed to that point. In seeking alignment, the project was delayed and additional resources expended. The benefit of having an IRT from the beginning is avoiding these challenges; initial discussions that brainstorm potential hurdles that might hinder the closeout of the TIA will be minimized. Contentious issues can be difficult to work through without a cohesive team; the IRT approach brings alignment within the team.

Draft Recommendations

Risk Insight Recommendations

1. Recommend that the Special Project and Processes Branch in DORL consider updating COM-106 to include the use of risk information during the screening and the development/response of TIA.

IRT Recommendations

1. Recommend that the Special Project and Processes Branch in DORL consider updating COM-106 to include the implementation of IRTs from the time the TIA is assigned to NRR staff to allow for early identification of issues, improve cohesiveness and alignment of staff views, and increase efficiency by decreasing staff hours.