

NRR RIDM Action Plan

September 14, 2018

RIDM Action Plan - Background

- Commission direction
 - SRM-M170511, June 2017; ML17177A397
 - SECY-17-0112, November 2017; ML17270A192
- NRR Office Director Memorandum
 - “Tasking to Continue the Development and Inclusion of Risk Considerations in Licensing Reviews,” June 29, 2017; ML17180A061

Mission Statement

Enhance the integration of risk information into the organization's decision-making practices and processes to improve the technical basis for regulatory activities, increase efficiency, and improve effectiveness.

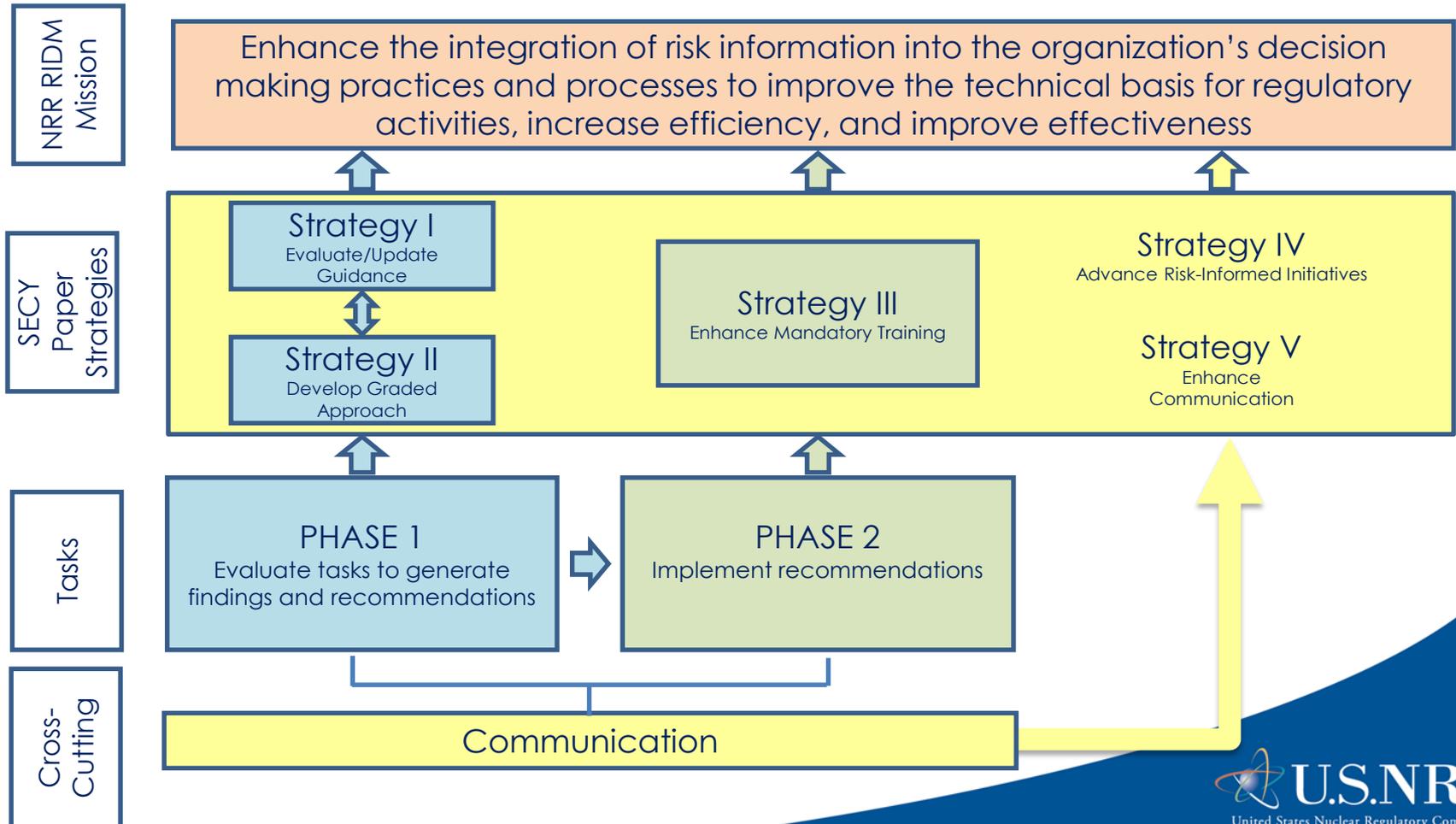
NRR RIDM Project - Overview

- The NRR RIDM project uses a systematic phased approach to complete the tasks
 - Phase 1: evaluation and analysis of the tasks to generate a findings and recommendations report
 - Phase 2: implementation of the recommendations, including a trial program of the proposed changes to guidance documents

5 strategies

- I. Evaluate and Update Guidance
- II. Develop a Graded Approach for Using Risk Information in Licensing Reviews
- III. Enhance Mandatory Training Requirements Related to RIDM for Managers and Staff
- IV. Advance Risk-Informed Initiatives
- V. Enhance Communication on Risk-Informed Activities

NRR RIDM Action Plan Framework



PHASE 1

Completed in June 2018 with publication of
Findings and Recommendations Report
ML18169A205

NRR Phase 1 RIDM Tasks

NRR RIDM Tasks	Task Description
NRR RIDM Task 1	Expand use of license review teams that would team up risk analysts with technical staff vice relying on sequential or independent reviews. In addition, evaluate the roles/responsibilities for the technical reviewer, risk analyst, and project manager.
NRR RIDM Task 2	Broaden the definition of risk more transparently such that all of the technical staff can see how their work embodies risk considerations—beyond CDF [Core Damage Frequency], LERF [Large Early Release Frequency].
NRR RIDM Task 3	Develop a graded approach for using risk information more broadly in licensing reviews.
NRR RIDM Task 4	Review Branch Technical Position (BTP) 8-8, “Onsite (Emergency Diesel Generators) and Offsite Power Sources Allowed Outage Time [AOT] Extensions” (Reference 11).
NRR RIDM Task 5	Evaluate DPO Panel Recommendations 5 and 6, including evaluating the possibility to leverage the risk-informed notebooks as job aids for the staff.
NRR RIDM Task 6	Evaluate the guidance in the four pertinent documents (Regulatory Guide (RG) 1.174 [Reference 12], RG 1.177 [Reference 13], RG 1.200 [Reference 14], and NUREG-1855 [Reference 15], discussed in DPO Panel Recommendation 7 to determine if better harmonization is appropriate, and provide recommendations on a path forward, if appropriate.
NRR RIDM Task 7	In addition to RG 1.174, determine whether any other pertinent documents or procedures should be updated (e.g., RG 1.177).
NRR RIDM Task 8	<p>Evaluate the use of Large Early Release Frequency (LERF) in various regulatory applications and determine if different approaches are supported:</p> <ul style="list-style-type: none"> • Permanent license amendment versus one-time AOT extension • Significance Determination Process analysis (truncates LERF after 8 days) • Consistency among regions when processing Notices of Enforcement Discretion (NOEDs)

NRR RIDM Tasks 1 and 3

- Integrated Review Team (IRT) Process
 - Expand use of license review teams that would team up risk analysts with technical staff vice relying on sequential or independent reviews. In addition, evaluate the roles/responsibilities for the technical reviewer, risk analyst, and project manager.
- Develop a graded approach for using risk information more broadly in licensing reviews.
 - Guidelines for considering risk information when reviewing applications that are not submitted per RG 1.174.

NRR RIDM Task 2

- Identified how the concepts of risk and risk insights are currently understood and used in NRR
 - Cafés with staff and managers
 - Focused interviews
 - Online questionnaires

NRR RIDM Task 4

- Review of Branch Technical Position (BTP) 8-8, Onsite (Emergency Diesel Generators) and Offsite Power Sources Allowed Outage Time [AOT] Extensions
- Developed an interim “expectation” memorandum on using BTP 8-8 for AOT extension requests
- Recommended changes to BTP 8-8 that will eventually be incorporated into the guidance document.

NRR RIDM Tasks 5, 6, 7, 8 (complete)

- NRR RIDM Task 5
 - Evaluate DPO Recommendations 5 (use insights from independent risk tools; e.g., SPAR models) and 6 (lessons-learned review after first-of-a-kind licensing actions)
- NRR RIDM Task 6
 - Evaluate the guidance in four documents (RG 1.174, RG 1.177, RG 1.200, and NUREG-1855) to determine if better harmonization is appropriate.
- NRR RIDM Task 7
 - With the impending revision to RG 1.174, determine if any other documents/procedures should be updated
- NRR RIDM Task 8
 - Evaluate the use of Large Early Release Frequency (LERF) in various regulatory applications and determine if different approaches are supported.

PHASE 2

July 2018 – December 2018

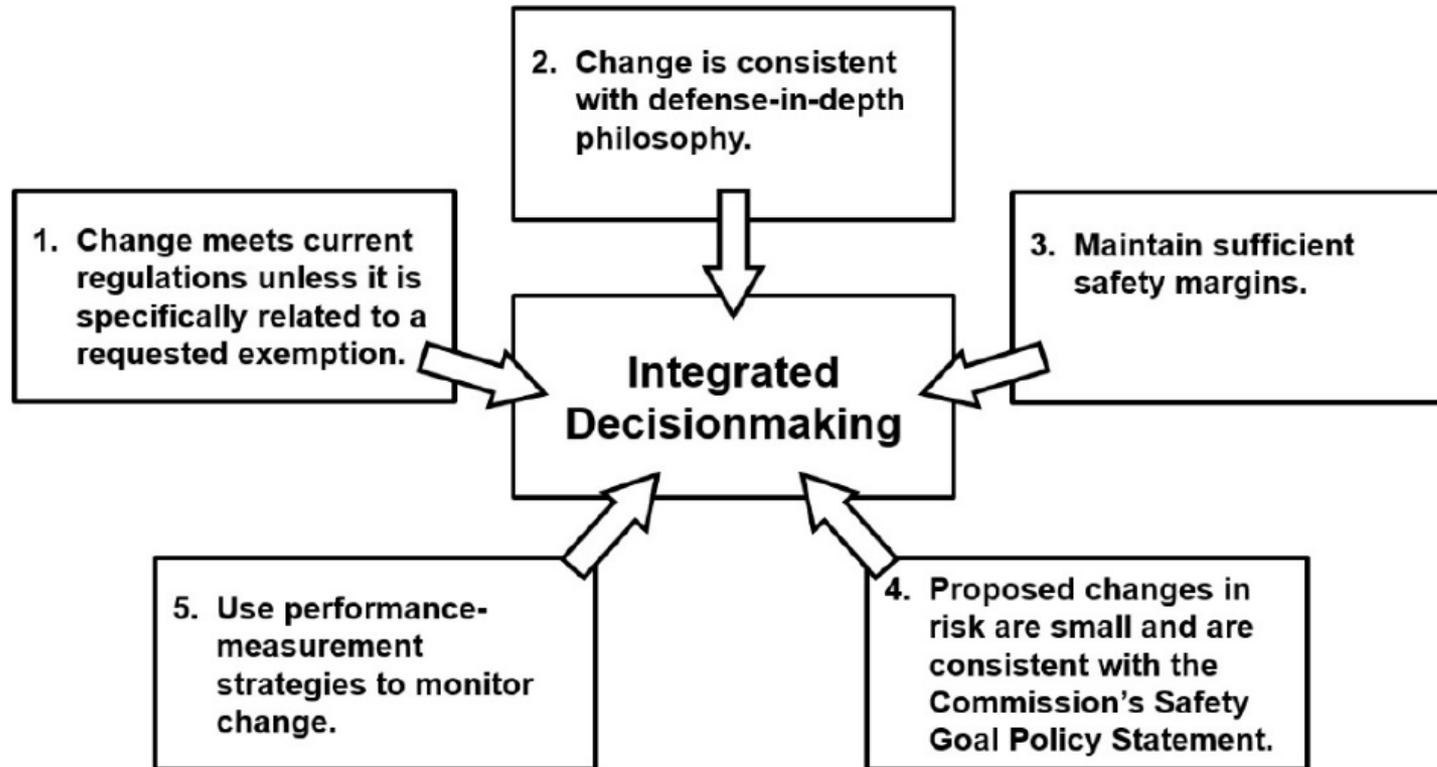
RIDM Action Plan, August Revision

ML18211A439

NRR RIDM Team A

Integrated Review Team Process

Principles of Risk-Informed Decision-making



Traditional Design Basis vs. Risk-Informed Reviews

Consideration	Design Basis Review	Risk-Informed Review
Scope of Events Analyzed	<ul style="list-style-type: none"> • Pre-defined set of events • Assumes design basis events are bounding 	<ul style="list-style-type: none"> • Not constrained by pre-defined events
Failure Scenarios Included	<ul style="list-style-type: none"> • Worst single active failure assumed to occur 	<ul style="list-style-type: none"> • Unlimited number of failures considered probabilistically
Approach to Uncertainties	<ul style="list-style-type: none"> • Dependent upon bounding assumptions 	<ul style="list-style-type: none"> • Focus on mean estimate (realistic), quantitatively assess uncertainties
Human Actions	<ul style="list-style-type: none"> • Assumed effective when proceduralized 	<ul style="list-style-type: none"> • All human actions probabilistically considered
Common Cause Failures	<ul style="list-style-type: none"> • Assumed to be precluded by special treatment requirements 	<ul style="list-style-type: none"> • Probabilistically considered for common SSCs based on experience

Recent Licensing Experience

- “Non-RG 1.174” licensing actions:
 - Use of risk insights
 - communicate the safety context of proposed changes
 - increase staff’s confidence in its decisions
 - increase staff’s understanding of system and component importance and interactions
 - How to integrate risk insights into engineering judgement
 - How to document use of risk insights in safety evaluations
- RG 1.174 licensing actions
 - Scope of technical staff reviews
 - Integrating engineering and risk reviews

RIDM Action Plan

Phase 1 Tasks 1 & 3

- Task 1
 - Expand use of license review teams that would team up risk analysts with technical staff vice relying on sequential or independent reviews. In addition, evaluate the roles/responsibilities for the technical reviewer, risk analyst, and project manager.

- Task 3
 - Develop a graded approach for using risk information more broadly in licensing reviews.

Task 1

- Develop a review team framework that provides for:
 - Integrating risk and traditional engineering insights
 - Teaming risk analysts with technical staff instead of relying on sequential or independent reviews
 - Enabling decisions about the use of risk insights early in the review process
 - Developing joint conclusions and a consolidated safety evaluation (SE) developed by the team

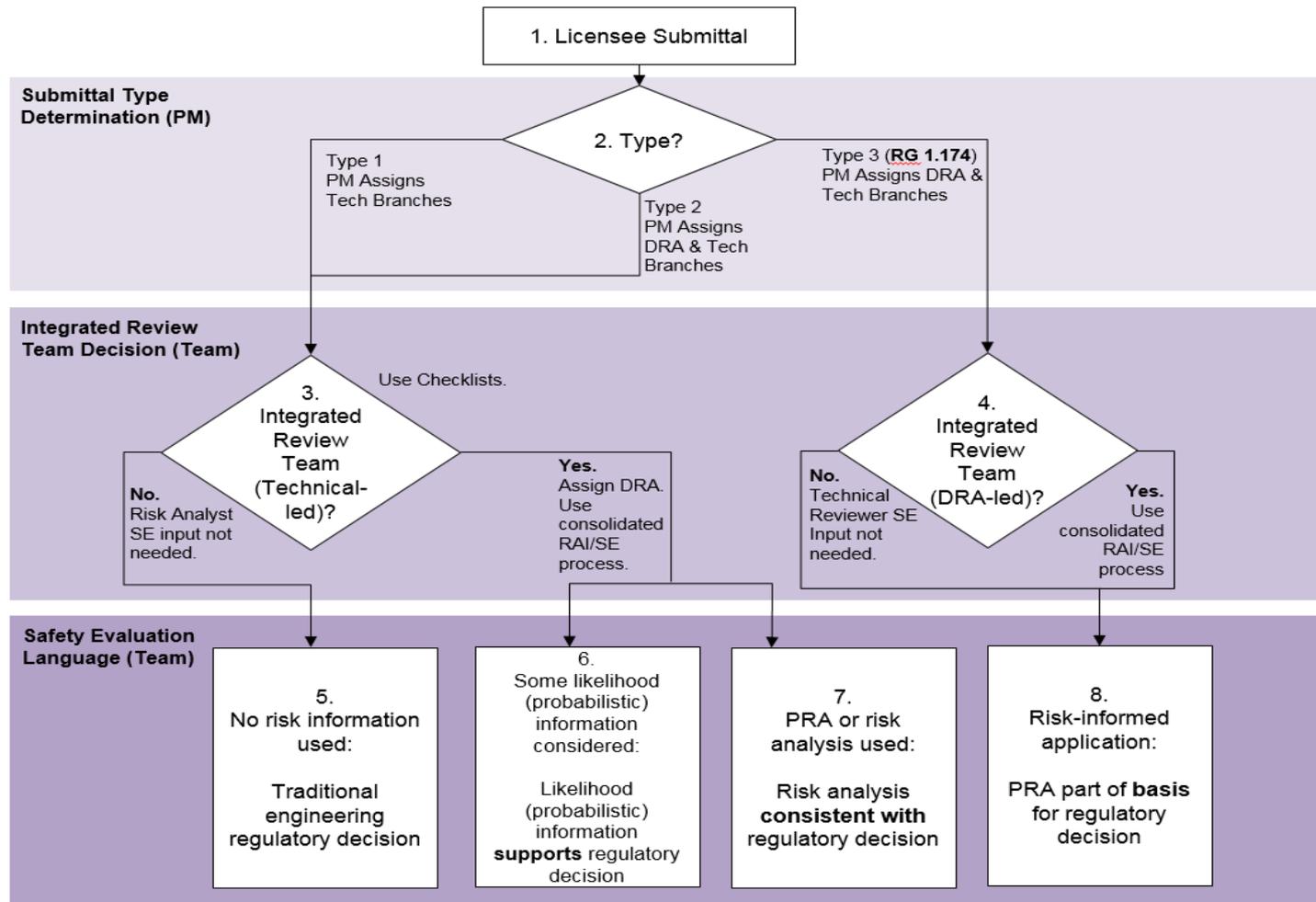
Task 3

- Establish a repeatable framework for integrating technical and risk analyst licensing reviews
- Develop tools for reviewers
 - Deciding whether to use risk insights
 - Describing risk insights that may be considered
 - Documenting the staff's consideration of risk insights in safety evaluations

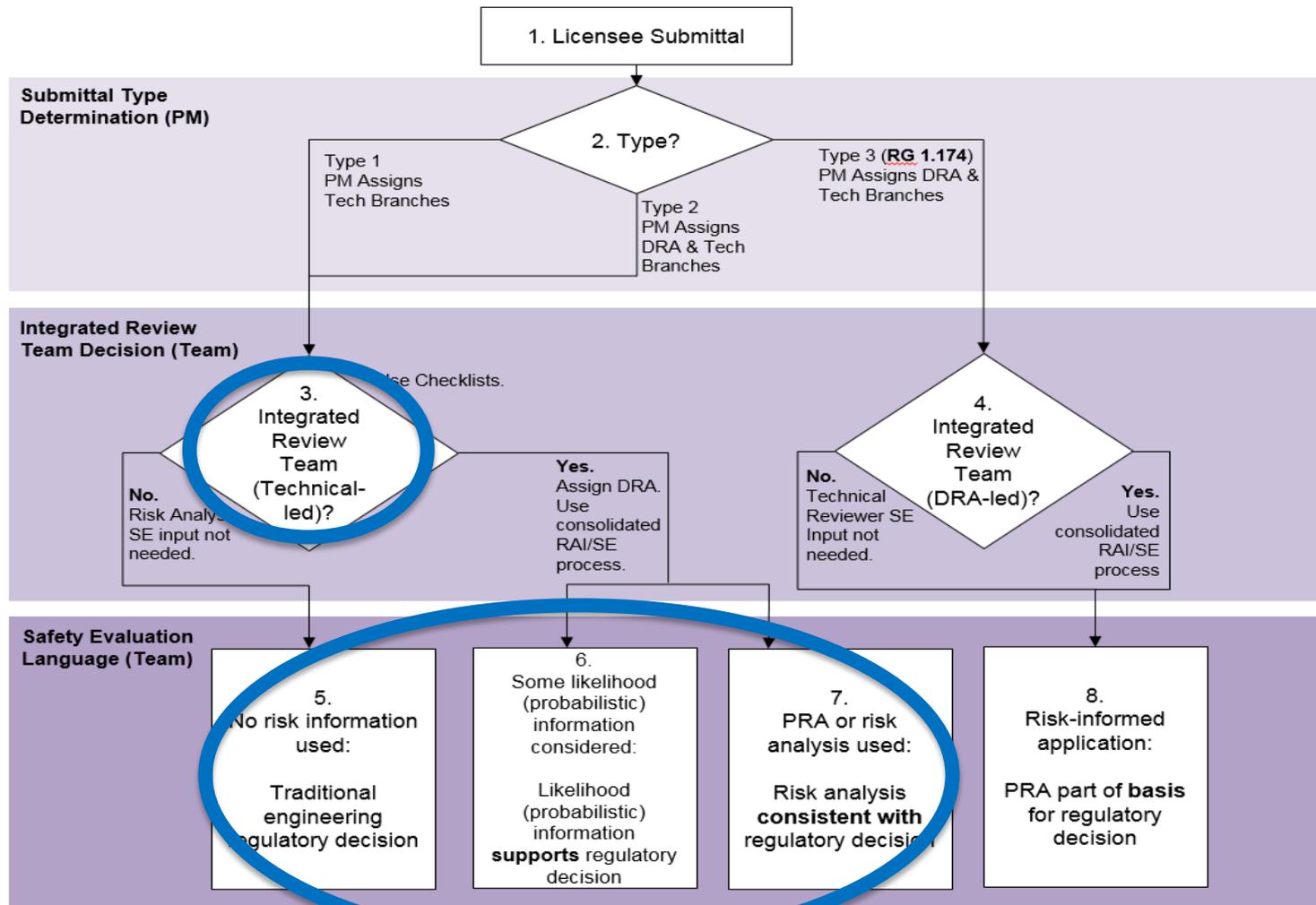
Tasks 1 & 3 Recommendations Report— Phase 1

- Focuses on a subset of amendments, relief requests, and exemptions
 - Routine, emergency/exigent, multiple risk-informed licensing actions
- Contains six recommendations
 - Define application type based on level of PRA information
 - Define roles and responsibilities
 - Implement draft IRT process for a trial period
 - Update guidance and training after a trial period
 - Update project management software after a trial period
 - Evaluate applicability to other NRR processes
- Describes process for forming IRTs and consolidated RAIs/SEs
- Contains review tools (checklists and SE language guidance) for using risk insights (i.e., graded approach)

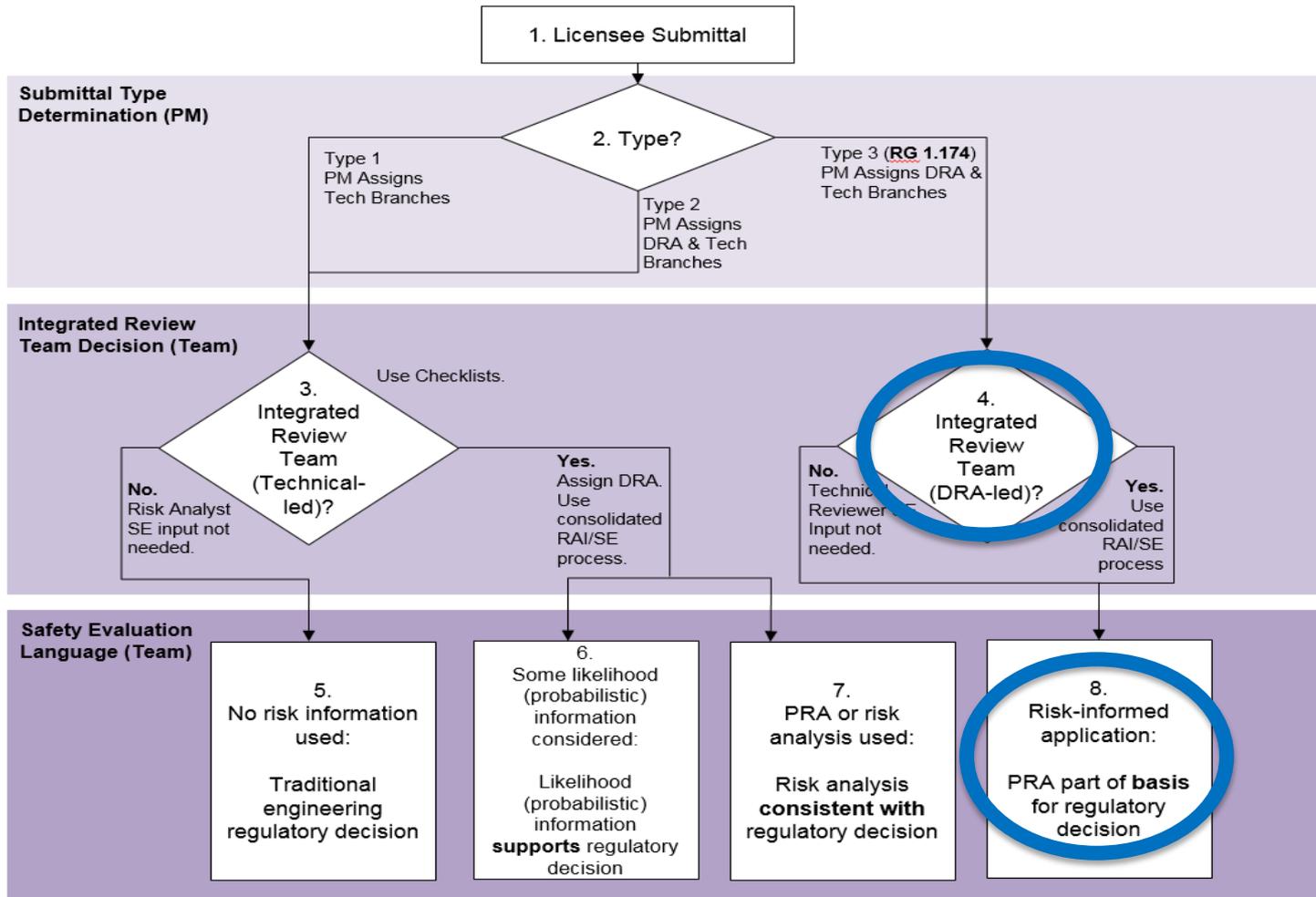
IRT Decision for Routine Actions



IRT Decision – Non-RG 1.174



IRT Decision – RG 1.174



Risk-Informed Decision Making in Licensing Actions

Block 5



Traditional Analysis

Block 6 & 7



Traditional Analysis with Risk Insights

Block 8



Risk-Informed (RG 1.174)

Integrated Review: Principles of Risk-Informed Decision Making

Phase 2 - Trial Period

- July – October 2018
 - Obtaining staff feedback on IRT decision process, use and documentation of risk insights, and use of consolidated approach
 - For Type 1 or 2 applications, risk analyst effort expected to be minimal compared to RG 1.174 application reviews
- Develop plan to create formal guidance and provide training in 2019
- Continual learning and process improvements will occur after initial implementation

NRR RIDM Team B

- Recommending changes to position descriptions and updates to performance appraisal elements to encourage use of risk information and risk insights.
- Supporting the regional offices in their development and running of regional Risk Cafés, and assessing the impact of their results on the guidance and training updates coming out of the NRR RIDM project.

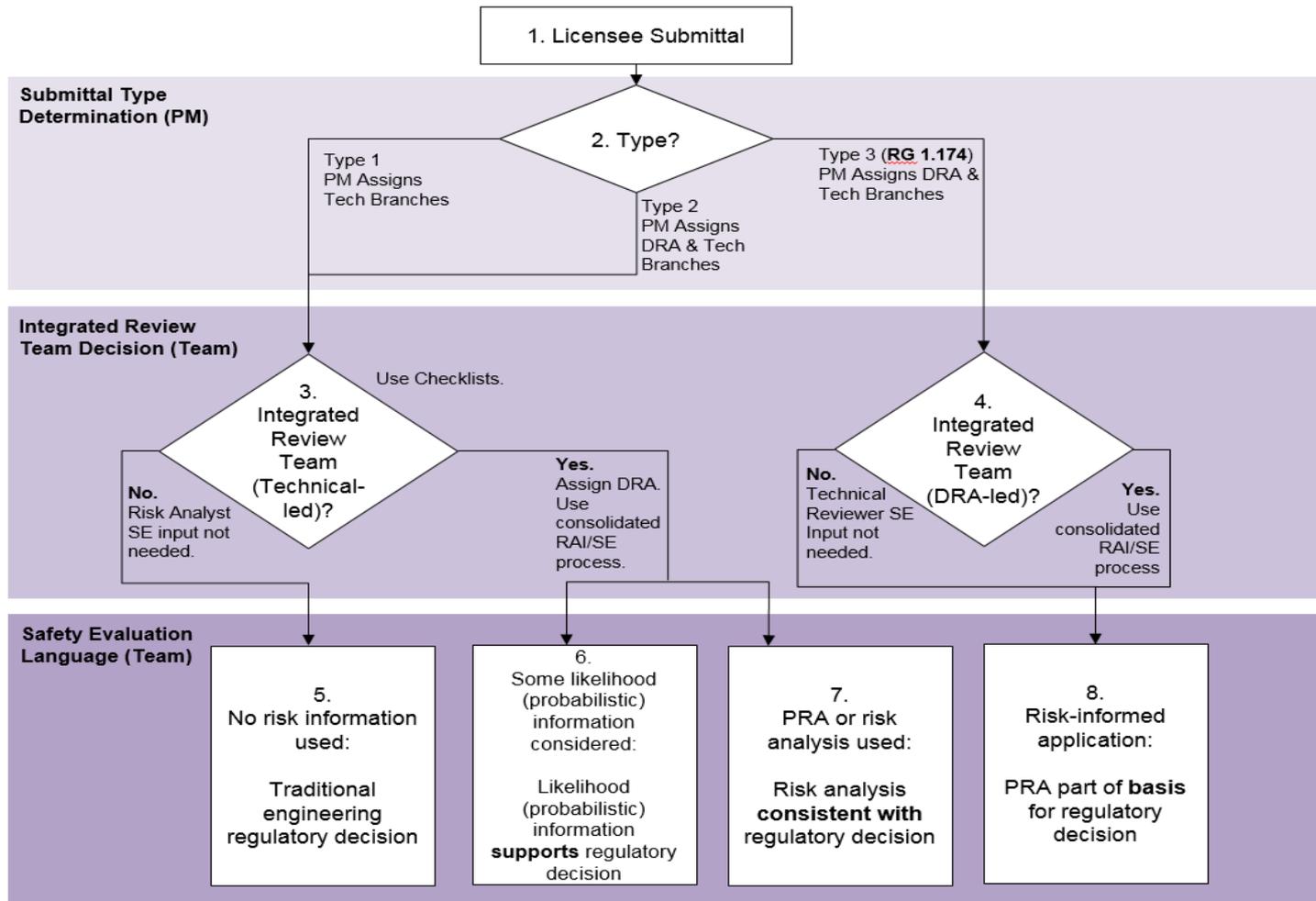
NRR RIDM Team C

- Producing a “RIDM Roadmap” that contains guidance for the use of risk principles in licensing reviews, and establishes the hierarchy of RIDM documents.
- Producing a “Desktop Guide” that contains a glossary of risk-related terms and an overview of the Integrated Review Team process.
- Assessing draft updates to existing guidance to facilitate the broadening of the use of risk in licensing reviews.

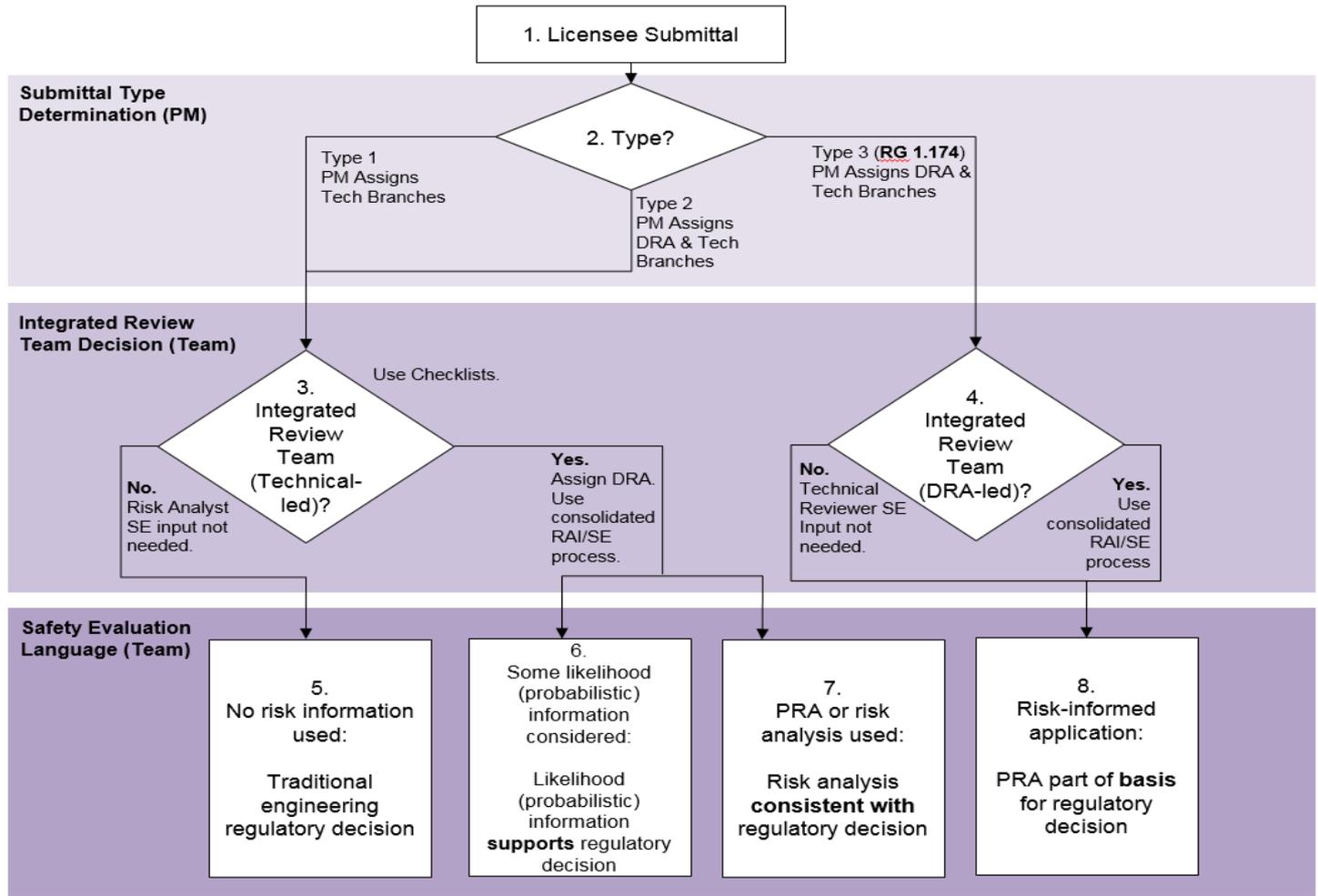
NRR RIDM Team D

Training

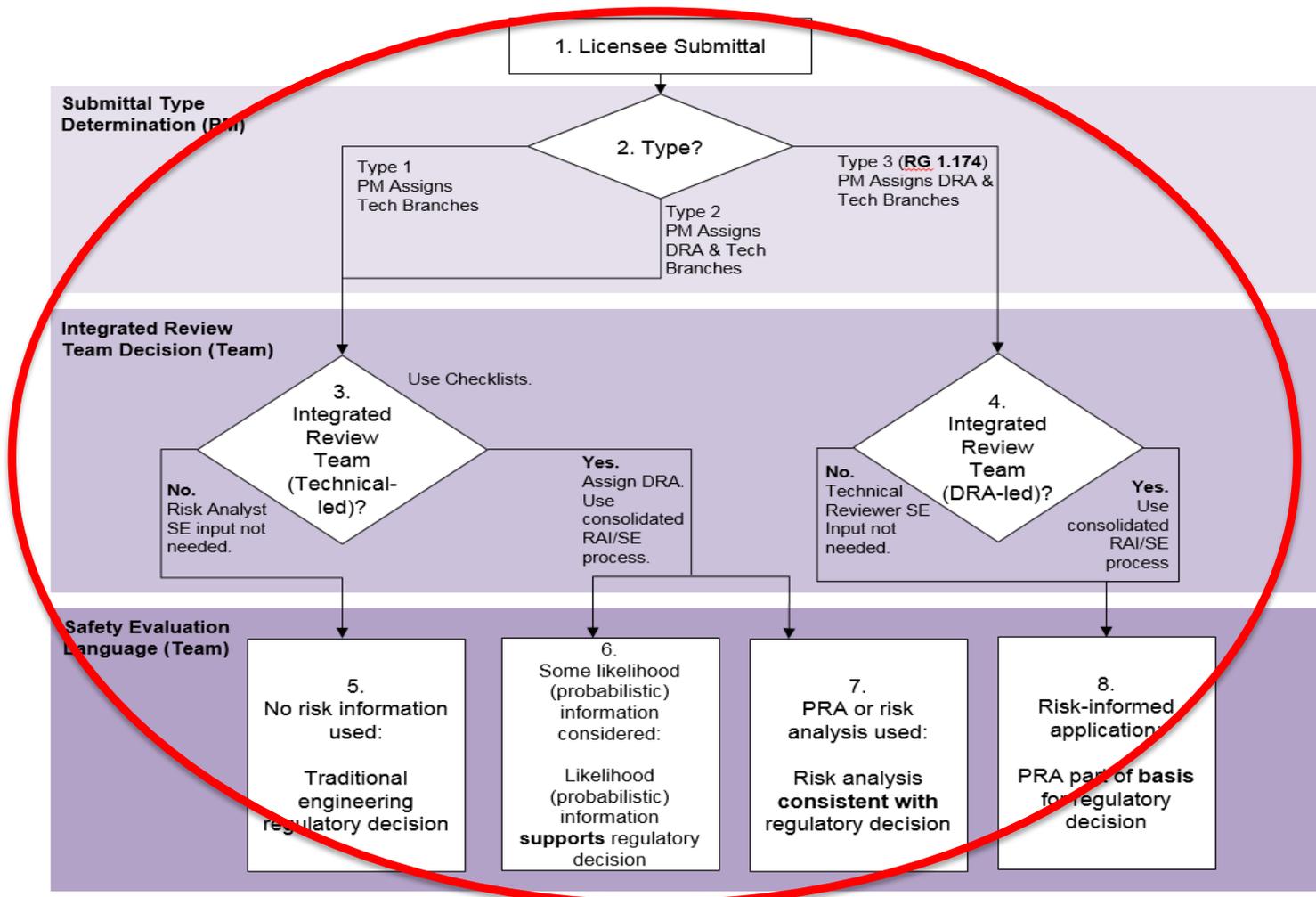
This flowchart shows the decision route for four types of regulatory decisions.



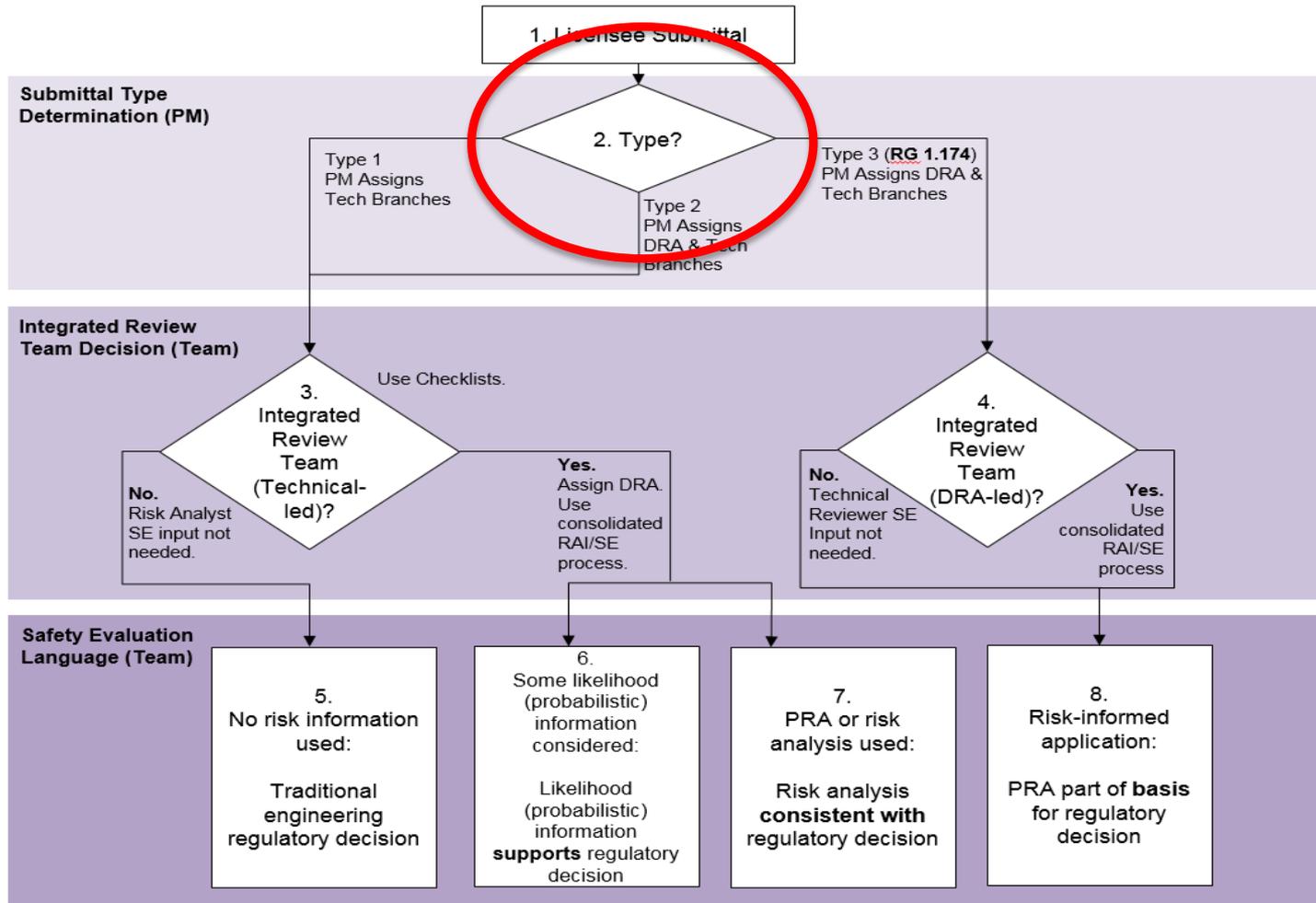
No final decisions have been made regarding training.



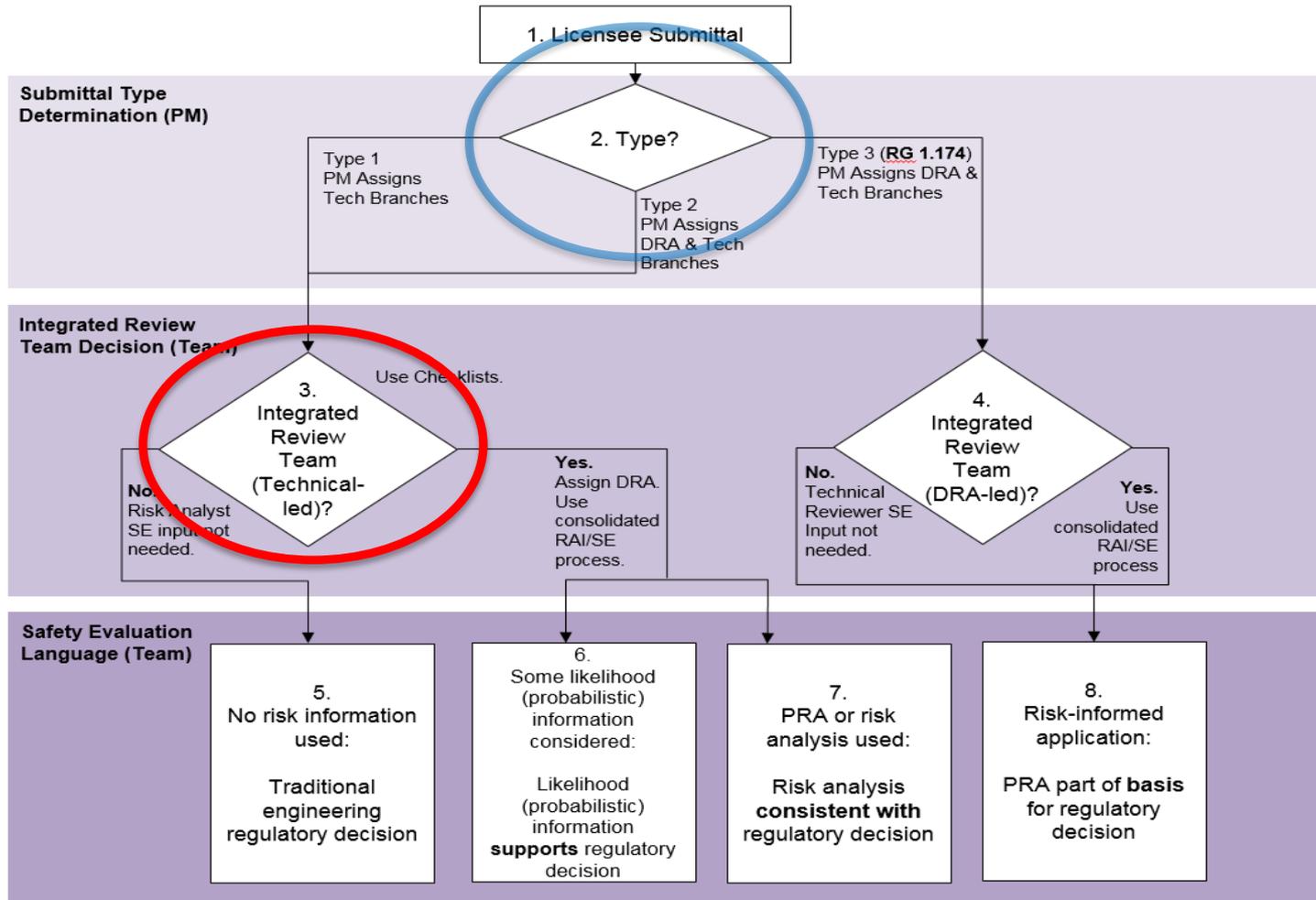
Training would likely include an overview for all staff



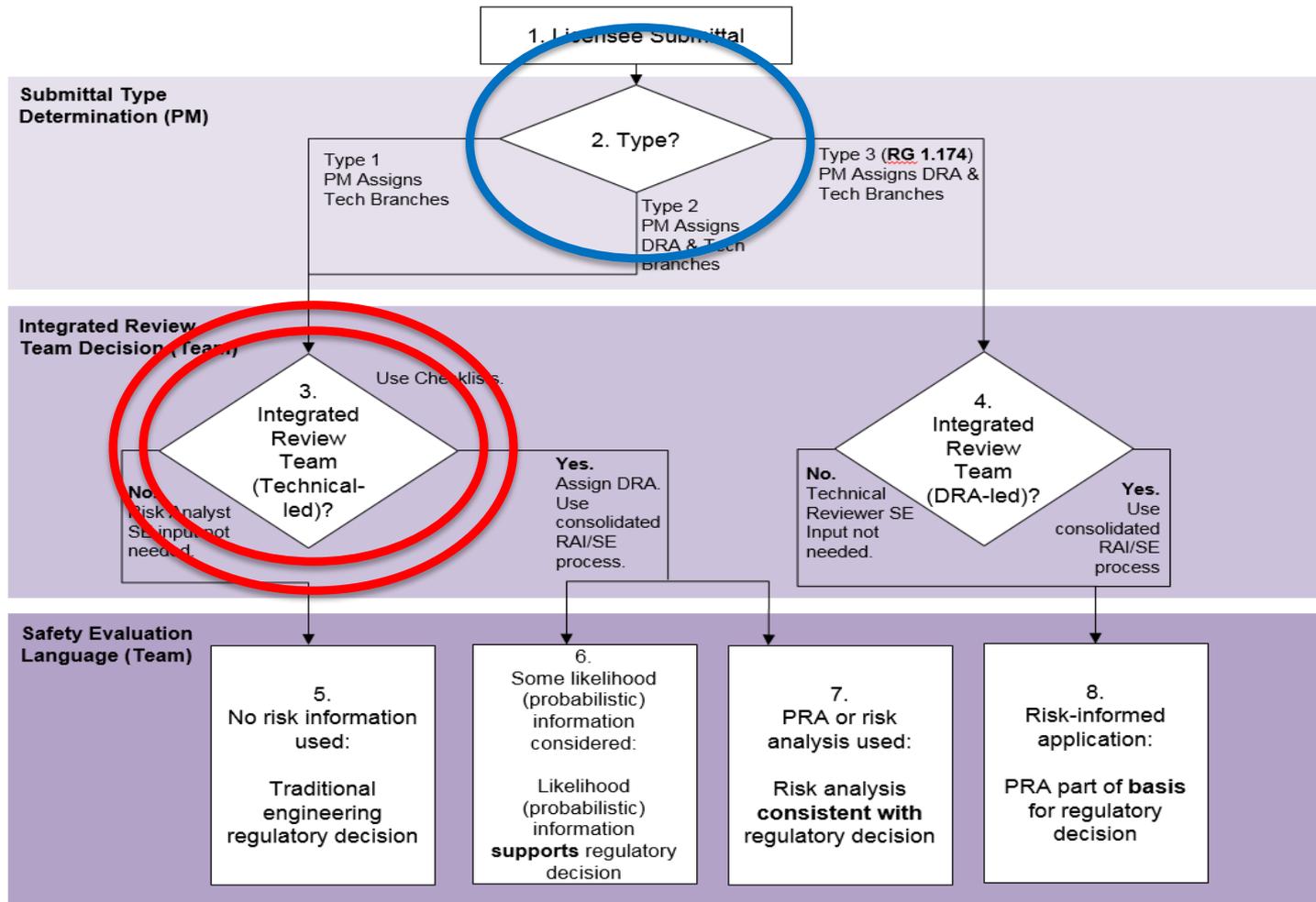
Training will be developed for PMs to support the Block 2 decision.



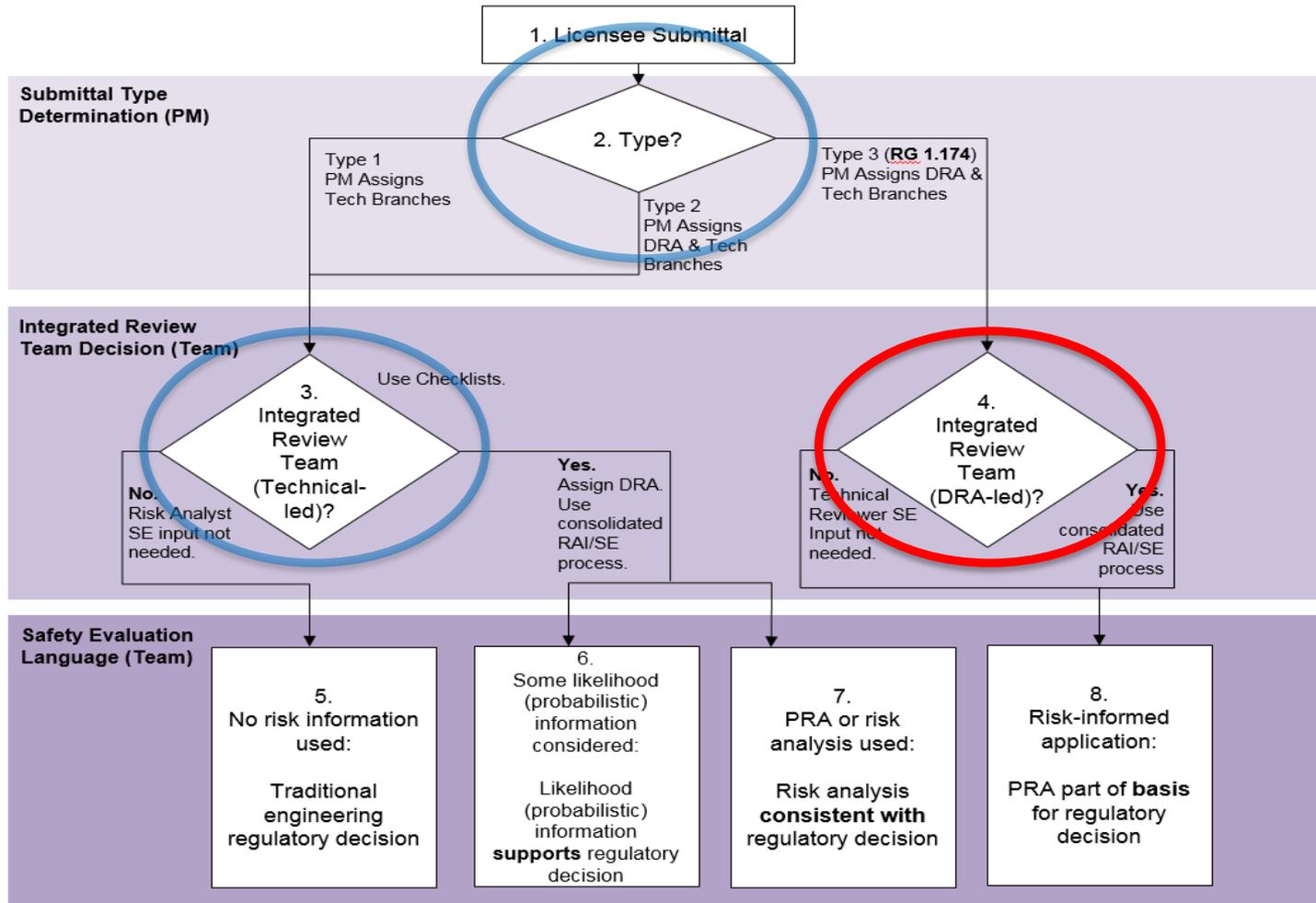
Integrated review team training for PMs, Tech Reviewers, Risk Analysts for Block 3.



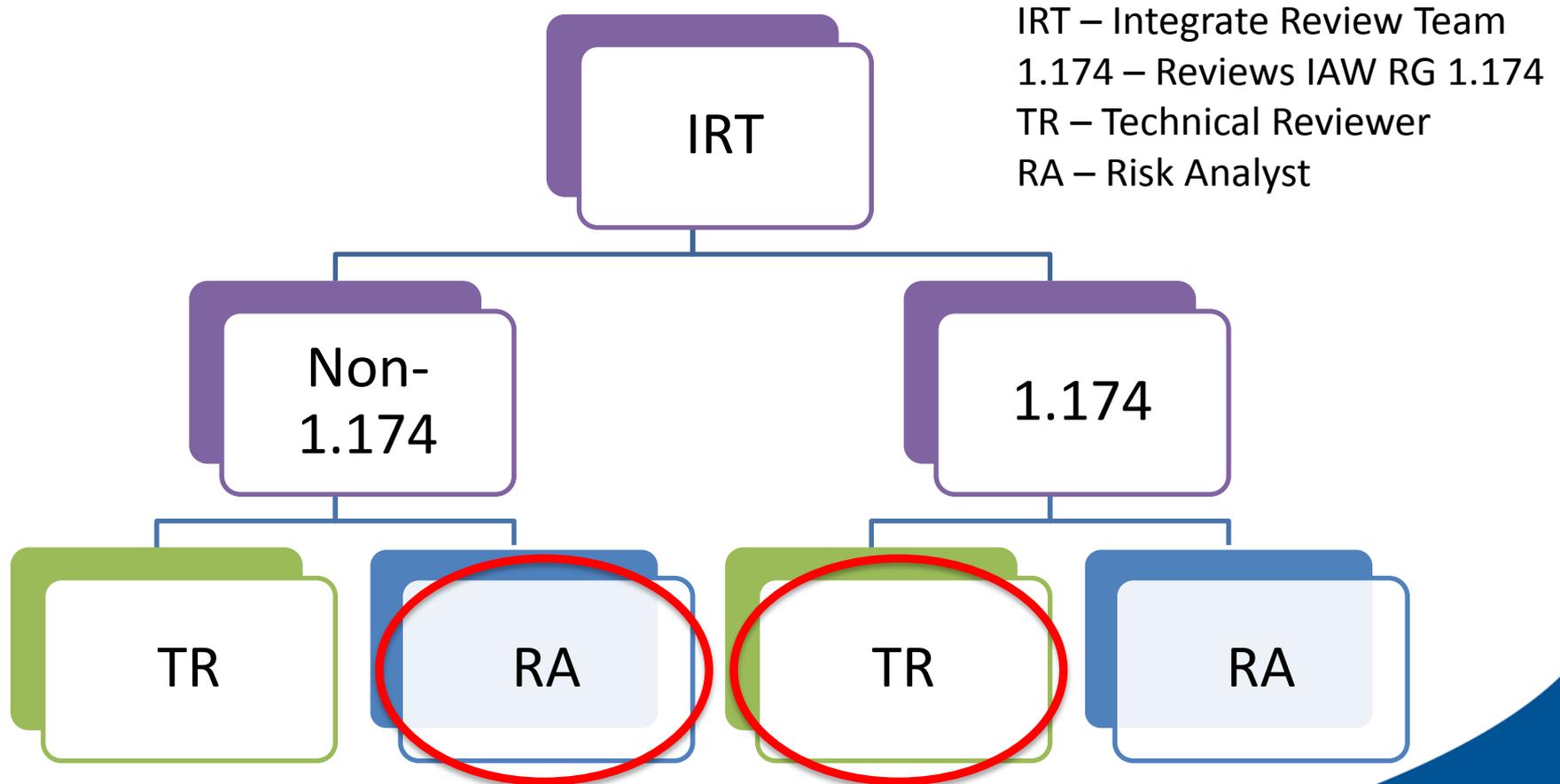
Block 3 is expected to get most of the attention.



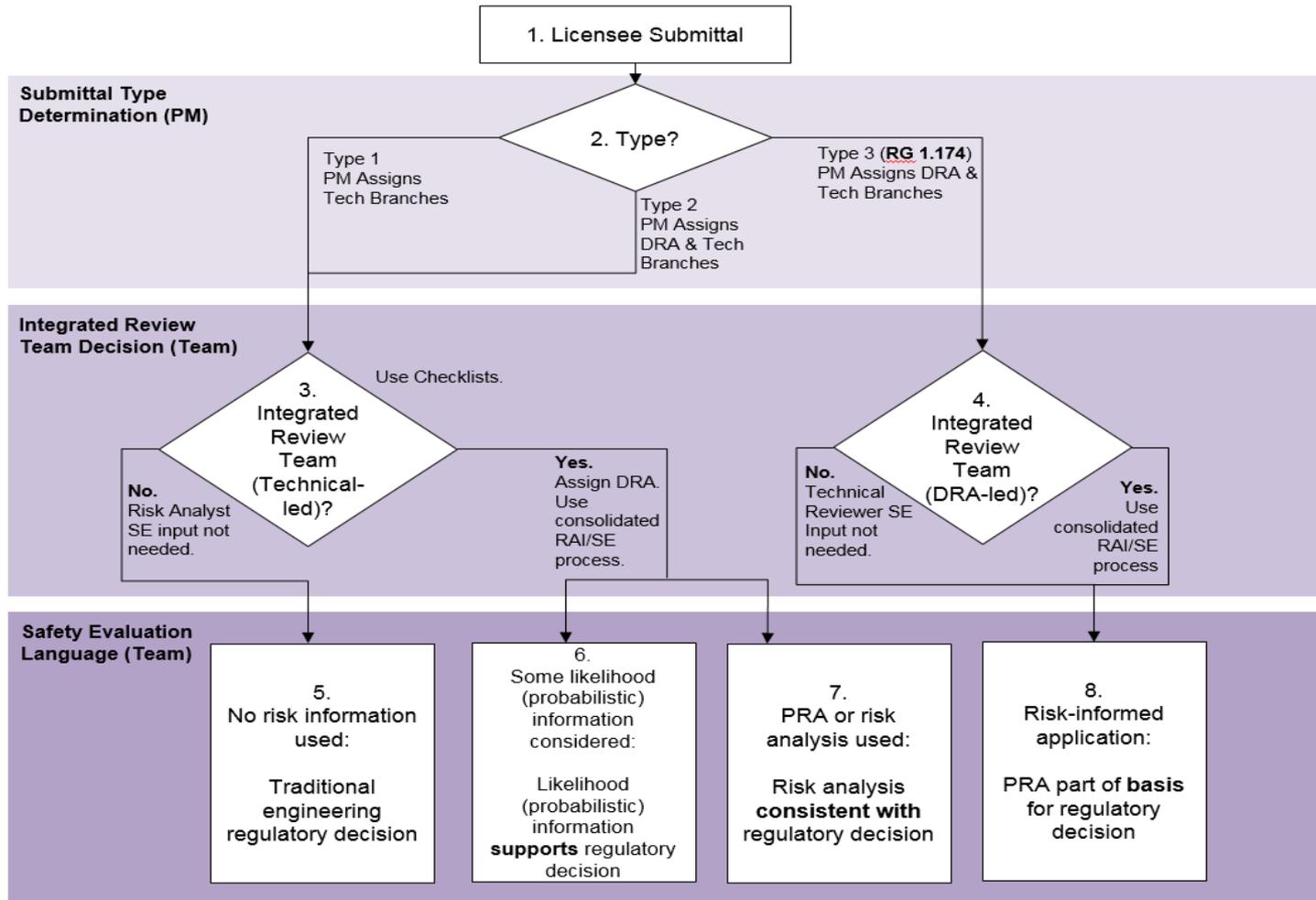
Block 4 represents RG 1.174 reviews, and supporting training is expected to be developed.



There are two audiences for two contexts of training.



The current trial period of the IRT will inform training needs.



NRR RIDM Team E – Additional Processes

In Phase I of the project, the NRR RIDM Task 1 working group focused on a subset (in **bold text**) of licensing activities requiring SEs that could involve consideration of risk:

- License amendments
 - **Emergency/exigent**
 - **Routine**
 - Power uprates
 - Improved Standard Technical Specifications conversions
 - Security, emergency preparedness (EP), quality assurance (QA) plans
- **Relief requests** and proposed alternatives
- **License exemptions**
- Environmental reviews (environmental assessments and impact statements)
- License renewals and associated commitment reviews
- Orders/backfits
- Technical Specification Task Force (TSTF) Travelers
- Topical reports

NRR RIDM Team E – Additional Processes

- Team E will support NRR divisions in determining whether their processes that were not covered within the IRT trial basis could be enhanced using the IRT approach or a similar process.
- NRR divisions will develop separate plans for updating those processes, if applicable and allowed by their regulatory structures, consistent with the Commission's policy.

NRR RIDM Team F

- Revising Branch Technical Position 8-8 to determine if clarification is needed regarding acceptability of long duration Completion Times (CT) for one-time extensions and maximum Allowed Outage Times (AOT), even when supported with risk information.
- Revising Standard Review Plan Section 16.1, “Risk-Informed Decision-making: Technical Specification” to include key points of the expectation memorandum, and to reference the current version of Regulatory Guide (RG) 1.177.
- Revising RG 1.177, “An Approach for Plant-Specific, Risk-Informed Decision-making: Technical Specification” to address long duration CT for one-time extensions and backstop CT.

NRR RIDM Team G – Metrics

How do you know if you are making progress if you don't measure it?

- Team G is developing metrics for measuring the implementation of the Phase 1 recommendations.
- Metrics will facilitate identifying trends and areas for improvement.

NEI Remarks

Questions and Comments