NRR-COM-106 Revitalization

Office of Nuclear Reactor Regulation (NRR)

Category 2 Public Meeting with NEI and Industry

Table-top Discussions

November 7, 2019

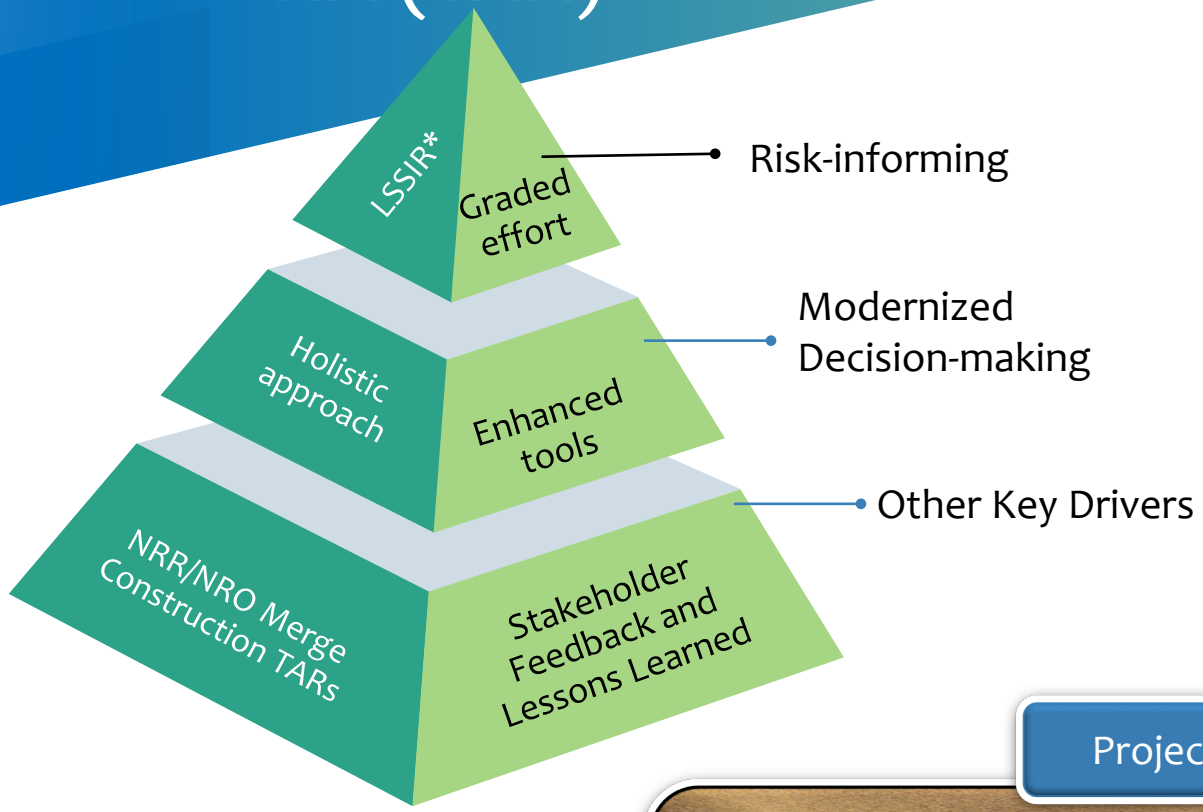
U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

AGENDA

- Opening Remarks….Division Management, NRR, Division of Operating Reactor Licensing (DORL)
- Staff Presentations…. NRR
  - Booma Venkataraman
  - Don Helton
- Table-top Discussions…. NRR with NEI and Industry

COM-106 Program Revitalization

TIA (TAR)



Project Status

- 3-step, graded risk-informed approach proposed
- Program rebranding to TAR to align with NRO/NMSS
- NRR/NRO program components merge underway

*LSSIR: Low Safety Significance Issue Resolution

Revitalized and Merged COM-106

- ✓ Restructured as a fact gathering exercise to inform decision-making
- ✓ No agency action or decision taken within TAR
- ✓ Applies effort commensurate with the significance of the issue

Merged TAR Components

New Reactors

Operating Reactors

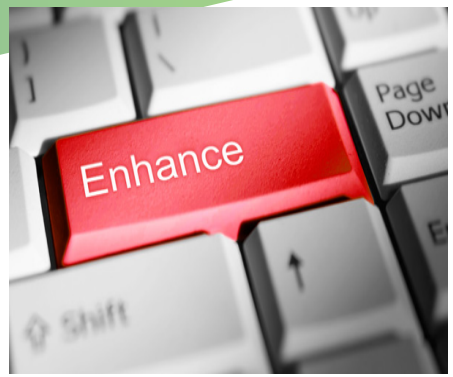
Construction TARs
(NRO COM-108)
Leverage current process
Refined templates

Merged SharePoint Site (internal)

Revitalized TIA Process
(NRR COM-106)
Major overhaul
New templates and tools

Industry Recommendations on TIA Process*

Operating Reactors



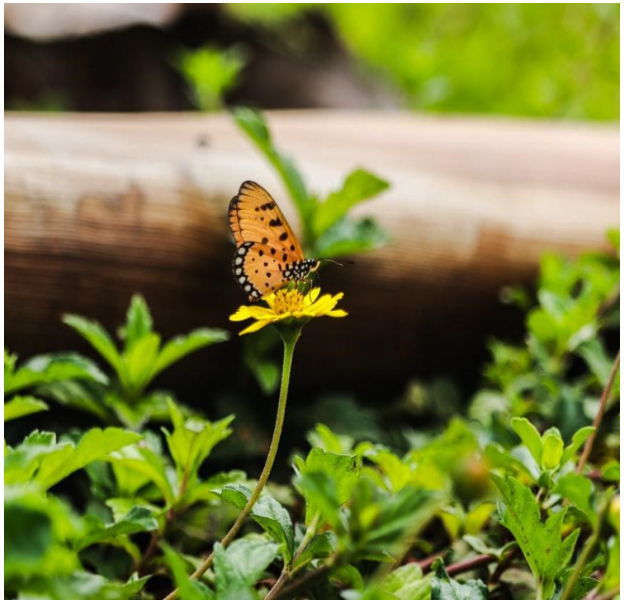
- Increase Process Rigidity
- Greater Emphasis on Backfit
- Establish Exit Criteria for Low Safety Significance Issue Resolution
- Include an Appeal Process
- Eliminate Pre-decisional Consideration
- Enhance Communication
- Enhance TIA Coordinator Position

* Inputs received in public meetings on Feb. 21, and March 19, 2019

TIA Program Challenges

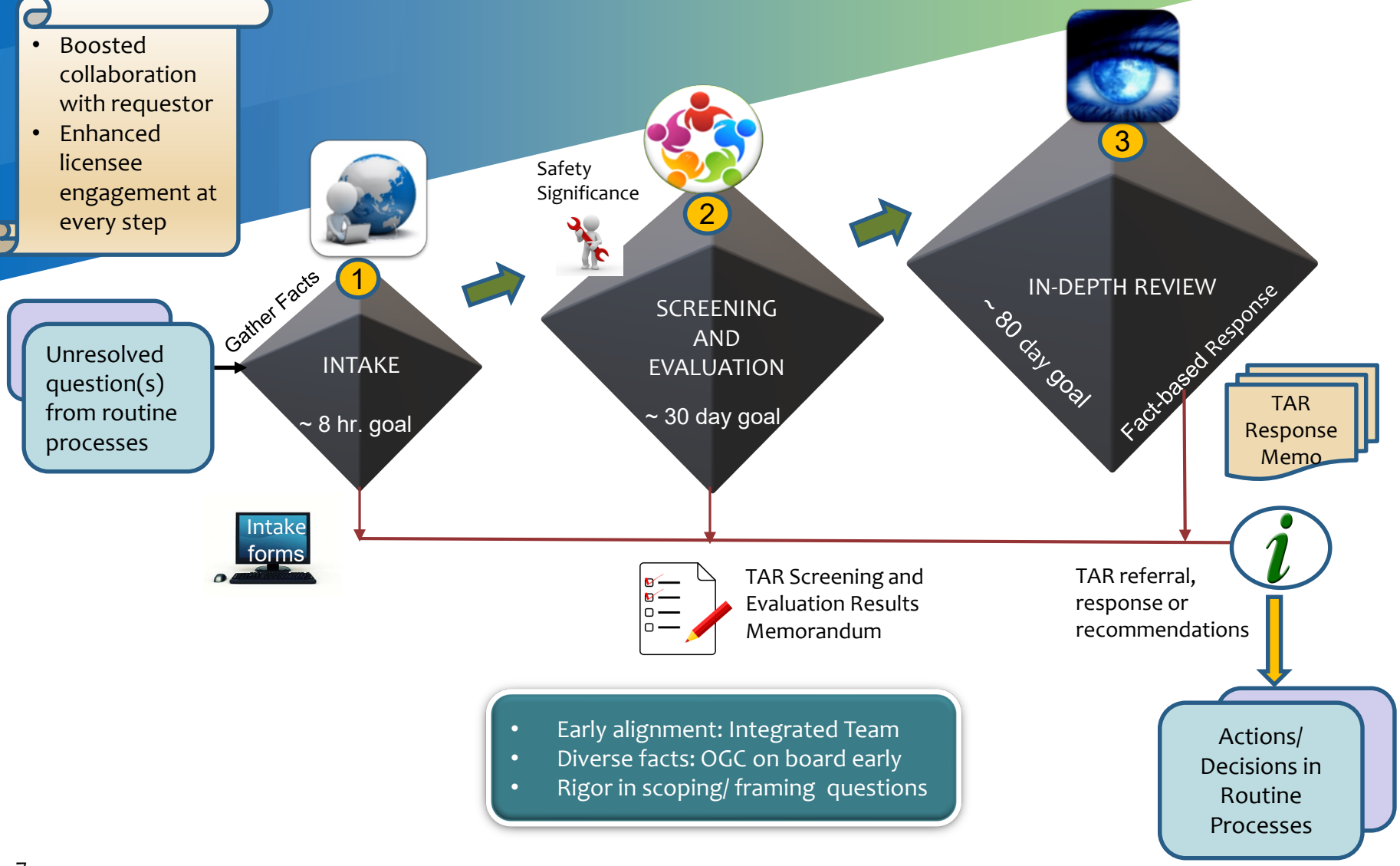
1. Timeliness
2. Effectiveness

- Effort on low safety significant issues
- Delayed hand-offs to other processes
- Issues outside the scope of the TIA
- Lack of early and/or inconsistent alignment
- Inconsistent licensee engagement



New Graded Approach to Efficient and Effective Issue Scoping, Routing and Resolution

- Boosted collaboration with requestor
- Enhanced licensee engagement at every step



- Early alignment: Integrated Team
- Diverse facts: OGC on board early
- Rigor in scoping/ framing questions

Internal WG Table Top Exercises Key Insights

Operating Reactors
COM-106

ROP LB Standing examples only

Hypothetical Examples Used

IMC 612

Table Top A
LSSIR and TAR Interface

Safety Significance Determination Worksheet

Intake Template

Table Top B
Intake + Screening and Evaluation

Integrated Team

TAR Review Team

Table Top C
In-depth Review

Fact-based Response

LSSIR Tools

Early safety significance screening can help refocus agency resources

Collaboration

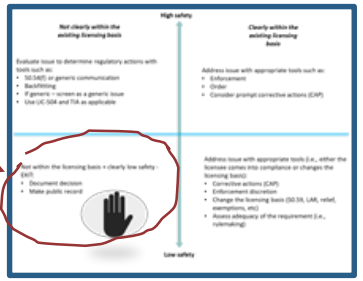
- Systematic gathering of facts (including licensee facts) can enable timeliness and effectiveness
- Requestor on board can help effective framing of questions
- Focused integrated team collaboration can help make timely recommendations

Licensee Engagement

Informing the licensee at the kick-off meeting about the TAR progress and facts of the issue in consideration can provide an opportunity for the licensee to engage further if needed

Safety Significance Considerations Operating Reactors

Featuring LSSIR Principle within TAR and ROP



ROP issue of concern related to LB* standing

IMC 612 LSSIR Criteria applicable and met

Is it of very low safety significance per IMC 609?

Yes

No or Indeterminate

Disposition: no further regulatory action

Inspection report per *IMC 611*

Public durable document

Actions or Decisions by ROP

NRR-COM-106 TAR Process

TAR Acceptance Criteria Met?

Intake Phase

Screening and Evaluation Phase

In-depth Review Phase

Facts Please

Safety Significance Determination

If issue is of very low safety significance and of indeterminate LB standing, it may be recommended for no further action

TAR Recommend-ation

Non-public document

* LB- Licensing Basis

New: Safety Significance Determination Tool

(In Screening and Evaluation)

Integrated Decision-making

TAR Screening & Evaluation Phase – Assess Safety Significance

Section A: Issue Description

Section B: Assoc. Change in Risk

Section C: Safety Margin

Section D: Defense-in-Depth

Section E: Perf. Monitoring / Feedback

These steps are important in accounting for completeness uncertainty

Section F: Wrap-Up

Factor safety significance in to the path forward…

Background & Basis

Documentation Template

Concepts of the Safety Significance Determination

- Each step references a set of existing guidance options…
- A general preference is stated to promote consistency…

Section B – Associated Change in Risk

Using one of the following approaches as a guide, document the basis for why there is, or is not, a significant increase in risk to the public, should the issue be dispositioned without further action.

Approach A – Inspection Guidance / IMC 0609
Approach B – Risk Triplet Discussion
Approach C – Scoping PRA Estimate

▪ ▪ ▪

Section D – Defense-in-Depth:

Using one of the following approaches, and specifically consi
characterization of risk significance and safety margin have i
document the basis for why there is, or is not, significant eros
issue be dispositioned without further action.

Approach A – Regulatory Guide 1.174, Rev. 3, Sec
Approach B – 50.69 Categorization
Approach C – 50.69 Guidance - NEI-00-04, Revision

▪ ▪ ▪

Wrap-up:

- Based on the totality of the foregoing information, and from the perspective of whether the agency should expend significant additional resources investigating this issue (vice other issues), document whether the issue has apparent safety significance in each of the assessed areas….
- If one or more elements has elevated significance, the issue on-the-whole may still be of very low safety significance (engage the integrated team)…
- The above assessment should reflect a consensus between the risk analyst and the topical area subject matter expert…
- Brief out to the integrated team…

Concepts of the Safety Significance Determination (Continued)

Topic	Item	Outcome
Key uncertainties not otherwise considered	• Item #1; • Item #2…	
Safety significance summary	The change in risk is very low/small	Yes / No / Indeterminate
	Adequate safety margin is retained	Yes / No / Indeterminate
	Sufficient defense-in-depth is maintained	Yes / No / Indeterminate
	There is adequate opportunity for feedback / monitoring (or sufficient alternative means have been considered)	Yes / No / Indeterminate
	On the whole, the issue's safety significance appears to be:	Very low / elevated / indeterminate
	Were the issue to be subject to backfit criteria (NUREG/BR-0058), the issue's significance would likely meet these criteria.	Yes / No / Unknown
Potential additional actions	Evaluation shared with Regional SRA for relevance to other risk-informed evaluations for this facility?	Yes / No / NA
	SPAR Model Feedback Form submitted for potential adjustment of the baseline model?	Yes / No / NA

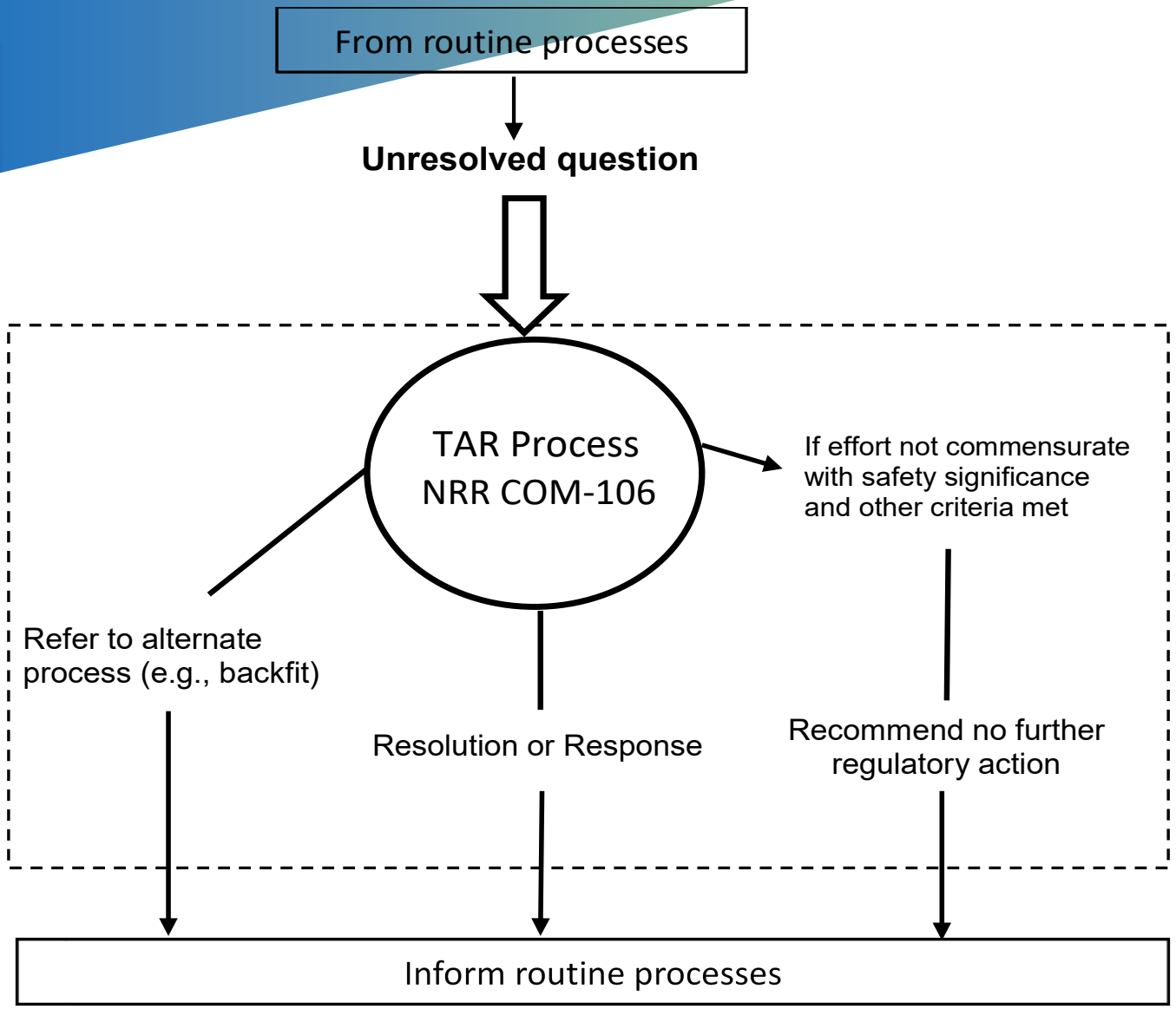
Example of the Safety Significance Determination

- Internal tabletop executed for a real issue applied to a different plant
  - Issue would not have met IMC 0612 VLSSIR criteria for disposition
- Risk analyst/SME chose the following approaches:
  - Scoping PRA assessment
  - Risk triplet for safety margin
  - RG 1.174 guidance for defense-in-depth
  - No direct opportunity for feedback identified
  - Potential relevance of condition to SPAR and SRA identified
- Concluded that the issue was of very low safety significance; integrated team agreed

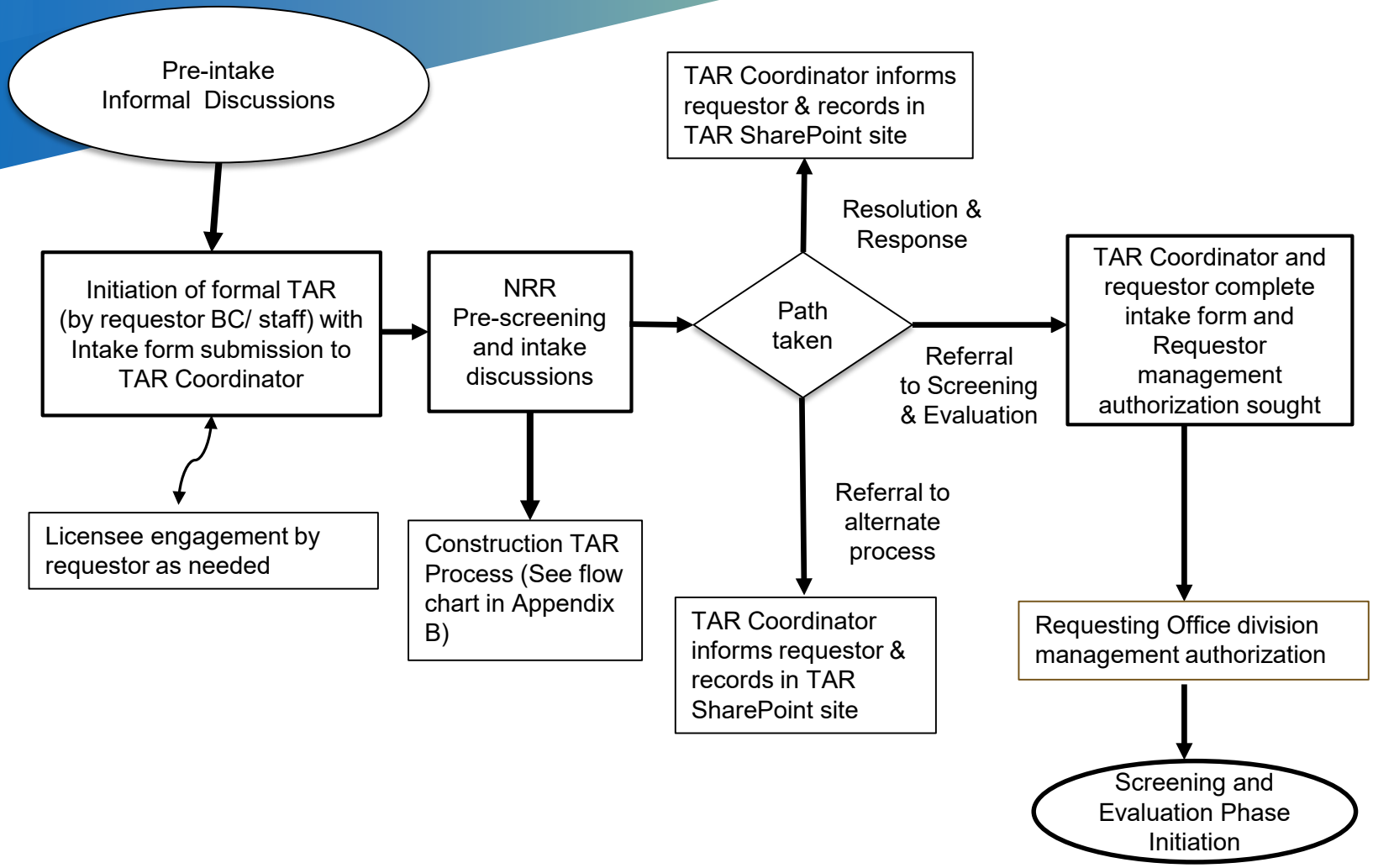
COM-106
Revitalized TIA (TAR) Process
Operating Reactors

(Note: All information on the slides are in Preliminary Draft form)

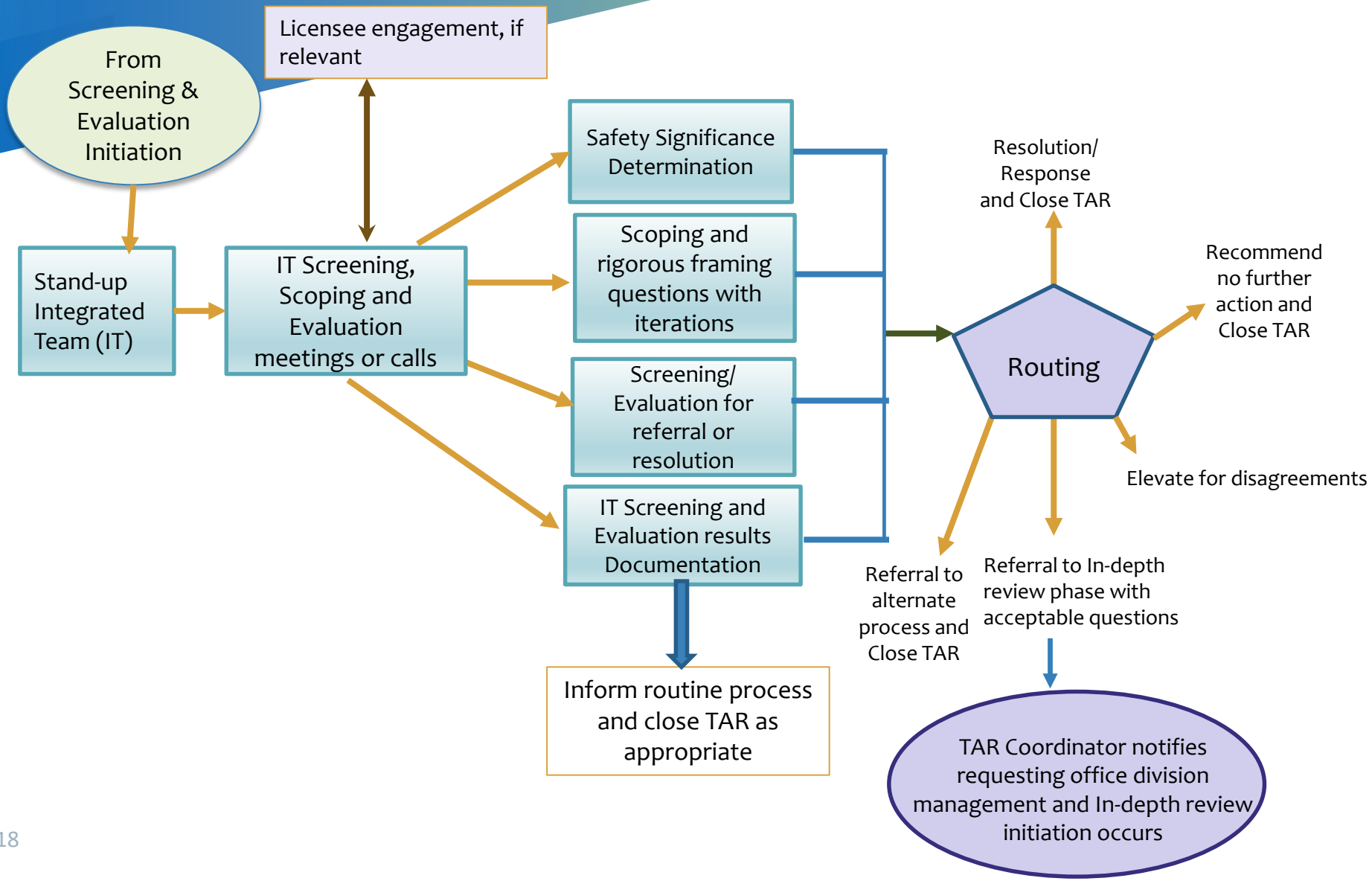
TAR BLOCK DIAGRAM



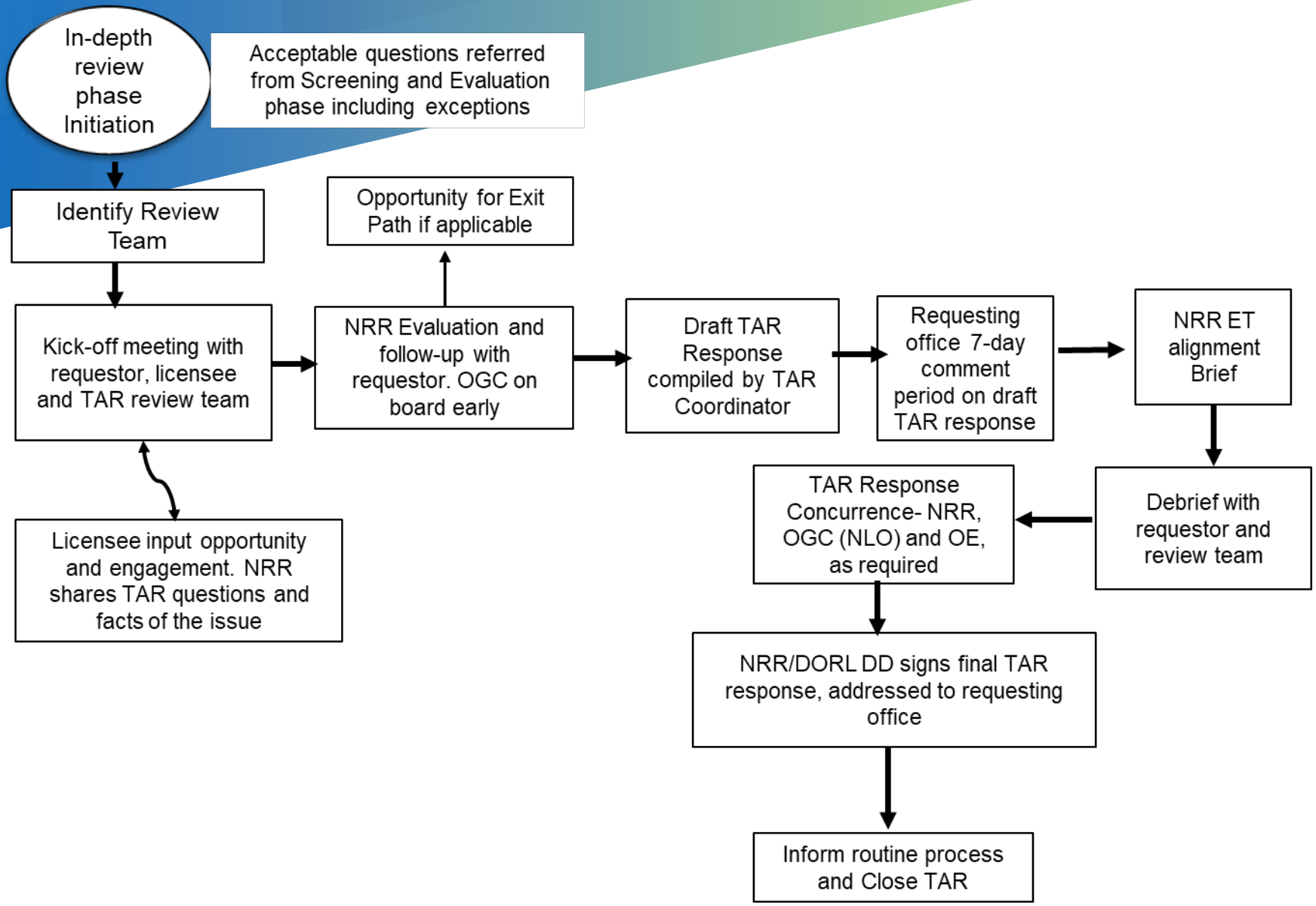
FLOW CHART: TAR INTAKE PHASE



FLOW CHART: TAR SCREENING AND EVALUATION PHASE



FLOW CHART: TAR IN-DEPTH REVIEW PHASE



Program Overview- TAR

- Issues should be resolved in the most efficient manner possible (e.g., informal discussions within routine processes at staff level)
- TAR is not a routine process and is not intended to replace routine processes
- When routine channels are exhausted, TAR - a formal mechanism, may be invoked
- TAR should be viewed as an extension of the primary regulatory process it serves; at the same time TAR is NRR's program to serve NRC internal organizations (e.g., a region with a URI request in the inspection process) to address unresolved questions timely and effectively with an effort commensurate with the significance of the issue
- The TAR process should engage the licensees early and throughout the TAR process, as relevant to the issue and to the process the TAR serves

TAR Pre-screening (as a Pre-TAR or a key Intake Activity)

- LSSIR Considerations (e.g., issue met new licensing basis and safety significance disposition criteria in IMC 612)
- The NRC staff has previously expressed a position regarding the issue and it is applicable to the particular question
- The question or concern relates to another process and could be referred accordingly (e.g., backfit, generic implications, differing professional opinion, legal interpretations etc.)
- Choosing a more efficient process of answering the question (e.g., would rely on a licensee's or vendor's evaluation, staff informal resolution, etc.)

TAR Acceptance Criteria (General)

Plant Specific Issues only!

Issues Outside TAR Process:

- ✓ Decisions or actions from TAR results, response or recommendations
- ✓ Enforcement actions
- ✓ Generic issues or concerns
- ✓ Backfit issues
- ✓ Non-concurrence or Differing Professional Opinion process

TAR Acceptance Criteria (Continued..)

Plant Specific Issues only!

Screening and Evaluation Phase Acceptance Criteria

- ✓ Completed Intake Documentation
- ✓ Could not be dispositioned by LSSIR on very low safety significance status
- ✓ Requesting office division management authorization to move the issue up

In-Depth Review Phase Acceptance Criteria

- ✓ TAR Safety Significance Determination (from Screening and Evaluation phase)- clearly of elevated safety significance or indeterminate
- ✓ Set of well defined questions* referred from the Screening and Evaluation phase
- ✓ Exceptions to enter in-depth review (e.g., safety significance alone may not be the governing factor)

*- Questions cannot be changed in the in-depth review phase unless the process is started afresh from intake phase

Intaking Information- Highlights (Intake Phase)

TAR Issue Intake Form (internal):

- ✓ Fact gathering framework, collect info as early as possible from requestor
- ✓ Initiate discussions to accept and pre-screen issues

- Identify issue of concern and if it meets TAR acceptance criteria
- Identify unresolved questions, with underlying facts
- State the factual basis (provide background info, supporting documents, quotes etc.)
- List questions of purely legal interpretations separately
- Provide licensee inputs if relevant with supporting documents if any
- Provide sources of other diverse facts (e.g., staff) with supporting documents, if any
- Provide information to support safety significance evaluation
- Identify/ explain if the issue is of very low safety significance and any efforts to disposition it in another routine process before seeking a TAR
- Requesting office BC sign off
- Document outcomes of Intake phase (resolved, referral to another process or route to TAR Screening and Evaluation Phase) by TAR Coordinator

Screening and Evaluation Phase Results Memo Highlights

TAR Screening and Evaluation Results Memo (internal):

- ✓ Addressed to Requesting office division management
- ✓ Signature Authority: Integrated Team (IT) Chairperson

- Revised TAR questions (after IT deliberation) from intake form
- Safety Significance Determination results : (a) very low, (b) elevated or (c) indeterminate with supporting analysis
- Scoping and Screening results (recommend for no further regulatory action* or referrals to backfit, generic concerns or in-depth review) with supporting facts
- If a resolution is easily achieved, a response is recorded (e.g., issue in the licensing basis)
- Description and results of licensing basis standing analysis, if relevant with supporting facts
- Requesting office comments
- TAR questions for in-depth review referrals, if applicable
- If exceptions exist for in-depth review, document with basis
- Conclusions are NRR recommendations for the issue and applicable to the specific site
- No agency action or decision made with this documentation

*If issue is of very low safety significance and of indeterminate LB standing, it may be recommended for no further action

In-depth Review Phase Response Memo Highlights

TAR In-depth Review Response Memo (internal):

- ✓ Addressed to Requesting office division management
- ✓ Signature Authority: DORL Deputy Director

- Clear and concise technical review and evaluation
- Consideration of all inputs (include any licensee inputs received in this phase)
- State TAR accepted questions and definitive answers (YES/NO) with basis and facts
  - For example: Yes. The specific requirement to define parameter X for safety-related system Y in the XYZ plant is in the licensing basis, supported by the following facts:
    - ✓ Governing requirements under References L, P, and Q
- Requesting office comments
- Conclusions apply for the specific issue to the specific site
- No agency action or decision made with this documentation

Next Steps

Rollout and training by early December 2019

Merged NRR COM-106 completion by January 2020

Reference Slides

High safety

Not clearly within the existing licensing basis

Clearly within the existing licensing basis

Evaluate issue to determine regulatory actions with tools such as:

- 50.54(f) or generic communication
- Backfittting
- If generic – screen as a generic issue
- Use LIC-504 and TIA as applicable

Address issue with appropriate tools such as:

- Enforcement
- Order
- Consider prompt corrective actions (CAP)

Not within the licensing basis + clearly low safety - EXIT:

- Document decision
- Make public record

Address issue with appropriate tools (i.e., either the licensee comes into compliance or changes the licensing basis):

- Corrective actions (CAP)
- Enforcement discretion
- Change the licensing basis (50.59, LAR, relief, exemptions, etc)
- Assess adequacy of the requirement (i.e., rulemaking)

Low safety