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ASSURANCE MAPPING – CHARTING THE COURSE FOR EFFECTIVE RISK OVERSIGHT

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LEARNING OBJECTIVES

- I. Assurance Mapping definition and the role it serves
- II. Drivers for Assurance Mapping
- III. Assurance Mapping development phases
- IV. Assurance Mapping impacts on Internal Audit organizations
- V. Example Assurance Map

I. ASSURANCE MAPPING DEFINITION AND THE ROLE IT SERVES

POLLING QUESTION #1

Is your organization planning (or has completed) an Assurance Mapping exercise?

- A. Yes
- B. No
- C. Pending

PINNACLE WEST ASSURANCE MAPPING DRIVERS

- Complexity of nuclear power plant operations
- Existence of nuclear focused assurance function
- Significant number of external assurance activities
- End Goal: definition of internal audit scope

WHO ARE THE DIFFERENT TYPES OF ASSURANCE PROVIDERS WITHIN AN ORGANIZATION?

Management Assurance

- Compliance
- Quality Assurance
- Self-Assessments

Board of Directors

- Internal Audit

External Stakeholders

- Independent Auditor
- Government Regulators
- Trade Associations (e.g. ISO)

INTERNAL AUDIT'S ROLE IN ASSURANCE

REF: IIA PRACTICE ADVISORY 2050-2 ASSURANCE MAPS

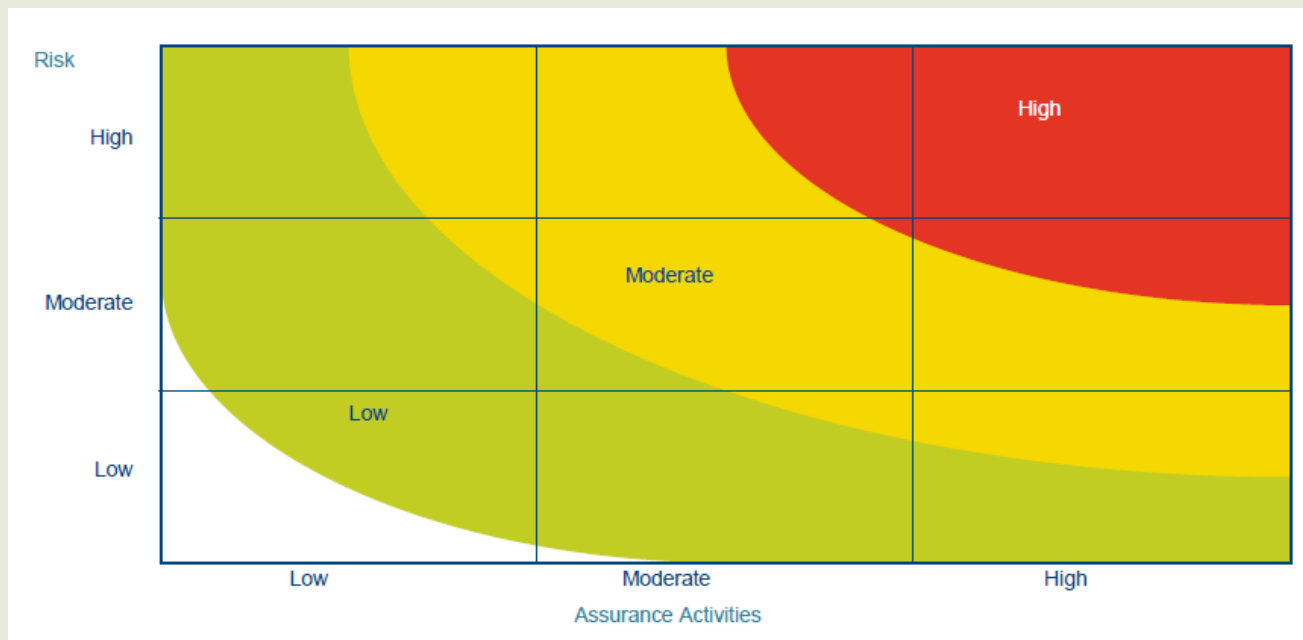
- Normally responsible for providing assurance over the entire organization, including:
 - Design and operating effectiveness of risk management processes
 - Management of “key” risks including the risk assessment process
 - Reporting of assessed risk and control condition

CONVENTIONAL OWNERSHIP OF ASSURANCE ACTIVITIES



BALANCING ASSURANCE ACTIVITIES

- Mapping assurance coverage against the key risks of an organization.



WHAT IS AN ASSURANCE MAP

Identification, Analysis, and Intelligent Work Distribution



II. DRIVERS FOR ASSURANCE MAPPING

POLLING QUESTION #2

What role would you envision that the CAE will play in an Assurance Mapping effort?

- A. Own the process
- B. Actively assist others in the creation of the Assurance Map
- C. Primarily a user of the mapping exercise

WHY COMPLETE AN ASSURANCE MAP?

- Assist the Board in understanding and assessing the organization's assurance process for key risks
- Identify areas where audit coverage could be enhanced through the annual plan
- Coordinate the assurance activities of an organization
- Promotes collaboration between executive management and the internal audit function
- Increases the credibility of internal audit within the organization

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CAE ROLE IN ASSURANCE MAPPING

- Understand assurance requirements of the board as well as the organization
- Use as an input into audit planning and when providing an opinion, on organizational governance, risk management, and control processes
- Act as an assurance activity coordinator
- Assist (or drive) with the creation of the Assurance Map

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III. ASSURANCE MAPPING DEVELOPMENT PHASES

POLLING QUESTION #3

Which phase of the Assurance Mapping development process do you see as the most critical for your organization to ensure success?

- A. Aligning ERM and business unit risks
- B. Linking risks to processes
- C. Identifying assurance activities (internal and external)

DEVELOPMENT PHASES

- Align enterprise level (ERM) risks with business unit risks
- Establish the relationship between business unit risks and the relevant processes
- Identify assurance activities

ASSURANCE MAPPING COMPONENTS

Assurance Mapping enables visualization of the alignment between enterprise risks and their associated processes. Concurrently, it reveals the degree of assurance oversight applied to these processes.

Risk Categories: High level Company corporate risk (ERM) groupings

Nuclear Risk Universe: Commonly 8 – 12 risk groupings specific to the Company

Specific Risks: Explicit risks linked to the nuclear organization

Relationship: Tie between specific risks and their associated processes

Risk Universe				Relationship (Risk - Nuclear Energy Group)	Process Universe		Internal Oversight & Assurance				
Risk Categories	Nuclear Risk Universe	Definitions	ID Client Identified Risk Universe		Internal Oversight Organization 1	Internal Audit	Internal Oversight Organization 3	External Oversight Organization 1	External Oversight Organization 2		
Category 1	Nuclear Risk 1	Risk Definition	### Client Identified Nuclear Risk 1	Key Processes (Risk - Nuclear Energy Group)	Core Processes						
	Nuclear Risk 2	Risk Definition	### Client Identified Nuclear Risk 2 <i>EY Recommended Nuclear Risk</i>		Major Process 1						
					Minor Process 1 (Periodicity) Client Audit 1 (Periodicity) (Periodicity)						
					Minor Process 2 (Periodicity) Client Audit 2 (Periodicity) (Periodicity)						
				Minor Process n (Periodicity) Client Audit 2 (Periodicity) (Periodicity)							
				Minor Process n+1 (Periodicity) (Periodicity) (Periodicity)							
				Major Process 2							
				Minor Process (Periodicity) Client Audit 3 (Periodicity) (Periodicity)							
				Minor Process (Periodicity) Client Audit 4 (Periodicity) (Periodicity)							
				Major Process 3							
				Minor Process (Periodicity) (Periodicity) (Periodicity)							

Process Universe: Nuclear business unit process model based on the Nuclear Energy Institute's (NEI) Standard Nuclear Performance Model

Internal / External Oversight & Assurance: Scheduled assurance activities, noting frequency

ALIGN RISKS

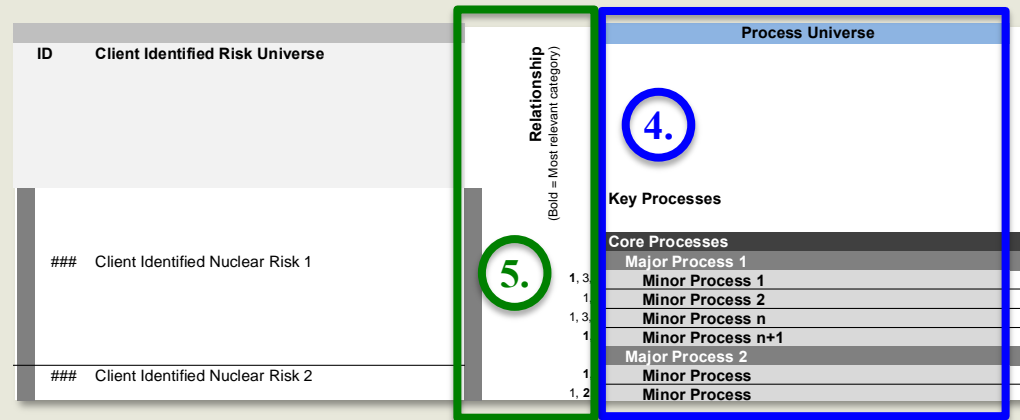
- Step 1: Identify enterprise risk (ERM) categories
(Operational, Financial, Reputational, Regulatory)

Risk Categories	Risk Universe		ID	Client Identified Risk Universe
1. Category 1	2. Nuclear Risk 1	Definitions Risk Definition	3. ###	Client Identified Nuclear Risk 1
	Nuclear Risk 2	Risk Definition	###	Client Identified Nuclear Risk 2

- Step 2: Document related business unit risks
- Step 3: List the focused organizational risks monitored for which mitigation actions are taken

ESTABLISH RISK TO PROCESS RELATIONSHIPS

- Step 4: Identify and document the business's operational and supporting processes



- Step 5: For each key risk, identify and document all relevant processes

IDENTIFY PROCESS OVERSIGHT

- Step 6: Identify and document the business's process assurance activities

Process Universe	Internal Oversight & Assurance			External Oversight Organization 1	External Oversight Organization 2
	Internal Oversight Organization 1	Internal Audit	Internal Oversight Organization 3		
Key Processes	6.			7.	
Core Processes					
Major Process 1					
Minor Process 1	(Periodicity)	Client Audit 1	(Periodicity)	(Periodicity)	(Periodicity)
Minor Process 2	(Periodicity)		(Periodicity)	(Periodicity)	(Periodicity)
Minor Process n	(Periodicity)	Client Audit 2	(Periodicity)	(Periodicity)	(Periodicity)
Minor Process n+1	(Periodicity)		(Periodicity)	(Periodicity)	(Periodicity)
Major Process 2					
Minor Process	(Periodicity)	Client Audit 3	(Periodicity)	(Periodicity)	(Periodicity)
Minor Process	(Periodicity)	Client Audit 4	(Periodicity)	(Periodicity)	(Periodicity)

- Step 7: Identify and document external organization's process assurance activities

IV. ASSURANCE MAPPING IMPACTS ON INTERNAL AUDIT ORGANIZATIONS

BENEFICIAL INTERNAL AUDIT IMPACTS

- Improves Internal Audit's effectiveness:
 - Focuses Internal Audit resources on the performance of risk-driven audits
 - Provides the opportunity to better leverage assessments by other internal groups
 - Elimination of redundant oversight activities
 - Reduction in the number of low value audits performed
 - Identifies the common processes in place to mitigate key risks
- Reduces Internal Audit's impact on the business
- Provides for near and long-term assessment schedule planning
- Enables identification of near and long-term auditor knowledge, skills, and experience needs
- May lead to a standard risk definitions
 - Establish an overall assurance framework

CHALLENGES FACED

- Time consuming
- Must be periodically updated
- Coverage is dependent on assurance organizations outside of Internal Audit

V. EXAMPLE OF ASSURANCE MAP

EXAMPLE - ENTERPRISE RISK (ERM) TO PROCESS RISK MAPPING

Risk Universe				
Risk Categories	Nuclear Risk Universe	Definitions	ID	Identified Nuclear Plant Specific Risks Within the Existing ERM Universe
Operational (OP)	Major Facility	An operational event that results in loss of life or significant facility/equipment damage.	633	Inherent Risk of Operating the Facility 123 Personnel / Industrial Safety
	Plant Performance Challenges	A failure to detect and remediate issues affecting unit reliability (overall capacity factor, forced outage factor, unplanned outage extensions, etc.), including both equipment and human	543 545 544 660	Nuclear Plant INPO Score Degradation Lost Generation NRC Action Matrix Column / SCCI Degrad PWSCC of Reactor Vessel (RV) Nozzles
	Workforce Issues	Inadequate planning and execution of staffing strategies that ensure a qualified labor pool, robust succession plans, and effective employee	632 456 789	Technical Training Re-Accreditation Workforce Pipeline Planning Succession Planning
Financial (FIN)	Financial Management	Inability to effectively forecast and manage business costs, creating financial exposure for the utility with potential negative consequences to financial planning and state regulatory	234 233 256 267	Supply Chain - Inventory Management Supply Chain - Strategic Sourcing Supply Chain - Vendor Management Long-term Nuclear Waste Management
Reputational (REP)	Governance Failure	Lack of appropriate governance structures. Failure to comply with legal, regulator, or ethics requirements resulting in significant impacts to the utility.	478	Cyber Security Program
Regulatory (REG)	Loss of Favorable Regulatory Environment	Adverse changes in state or federal regulatory climate.	588 636 634 635 637	CTMT Sump Strainers, GL 04-02 New Physical & Cyber Security Regs Potential New Emergency Planning Regs Potential New Fatigue Rule Costs (Part 26) NRC Post Fukushima Orders

Notes
† A quarterly rollup assessment of site operational performance information from all sources (internal and external) is also performed.
* A semi-annual rollup assessment of site corrective action and root cause analysis data is also performed.

EXAMPLE – PROCESS TO ASSURANCE ACTIVITY MAPPING

Relationship (Build = Most relevant category)	Process Universe	Internal Oversight & Assurance			External Oversight & Assurance	
		Nuclear Quality Assurance	Internal Audit	Management Self Assessments	Institute of Nuclear Power Operations (INPO)	U.S. Nuclear Regulatory Commission (USNRC)
	Key Processes					
	Core Processes					
	Operate the Plant					
OP, FIN, REP, REG	Operations Program	(24 months) [†]		(Ongoing)	(24 months)	(O / P / C / A / B)
OP, REP, REG	Environmental Monitoring Program	(24 months)		(Ongoing/Quarterly)		(Periodic)
	Maintain the Plant					
OP, REG	Maintenance Program	(24 months)		(Ongoing)	(24 months)	(P / C / A)
OP, REG	Work Management Program	(24 months)		(Ongoing)	(24 months)	(Periodic)
	Provide Material & Services					
OP, FIN, REG	Material Control Program					
	- Quality Assurance Controls	(24 months)				(P / 24)
	- Procurement		X	(Bi-annual)		
FIN	Contract Control Program		X			
	Enabling Processes					
	Performance Monitoring & Improvement					
OP, REG	Corrective Action Program	(24 months)*		(Ongoing)	(24 months)	(P / C / S / A / B)
OP	Self-Assessment and Benchmarking Prog			(Ongoing)	(24 months)	(C / A)
REG	Independent Oversight Program				(24/48 months)	
	- Quality Assurance Program	QA Group	X	This group is the one being audited.		(A / 18 / P)
	Training					
OP	Leader Training Program			(Periodic)	(24 months)	
	Loss Prevention					
OP, REG	Security Program	(24 months)				(Tri-annual)
OP, REG	Industrial Health and Safety Program			(Ongoing)	(24 months)	(Periodic)
OP, REG	Fire Protection Program	(24/36 months)		(Periodic)	(24 months)	(P / C / Q / A / T)
OP, REG	Cyber Security Program					Cyber security rules are being developed.
	- Cyber Security Program	(24 months)				
	- Business Systems		X			
	Information Management					
OP, REG	Document Control Program	(24 months)				(Periodic)
REG	Administrative Control Program	(24 months)	X			(Periodic)
OP, REG	Records Management Program	(24 months)				(Periodic)
OP, REG	Information Services Program					(Periodic)
	License and Permits					
OP, REG	Licensing and Compliance Program	(24 months)				(C / A)
	People, Business and Support Services					
OP, REG	Employee Concerns Program	(Optional)				(P / C)
FIN, REG	Business Operations Program					
	- Financial/Liability Reporting Program		X			
	- Finance / Accounting		X			
	- Business Ops Performance Monitoring		X			
OP, REG	Human Resources Program					
	- Succession Planning & Pipeline Program		X	(Bi-annual)	(24/48 months)	(Periodic)
	- Human Resources functions		X			(Conditional)
REP	Communications Program		X		(48 months)	
OP	Facility Management Program		X			

Key - Level of internal assurance derived from activity:

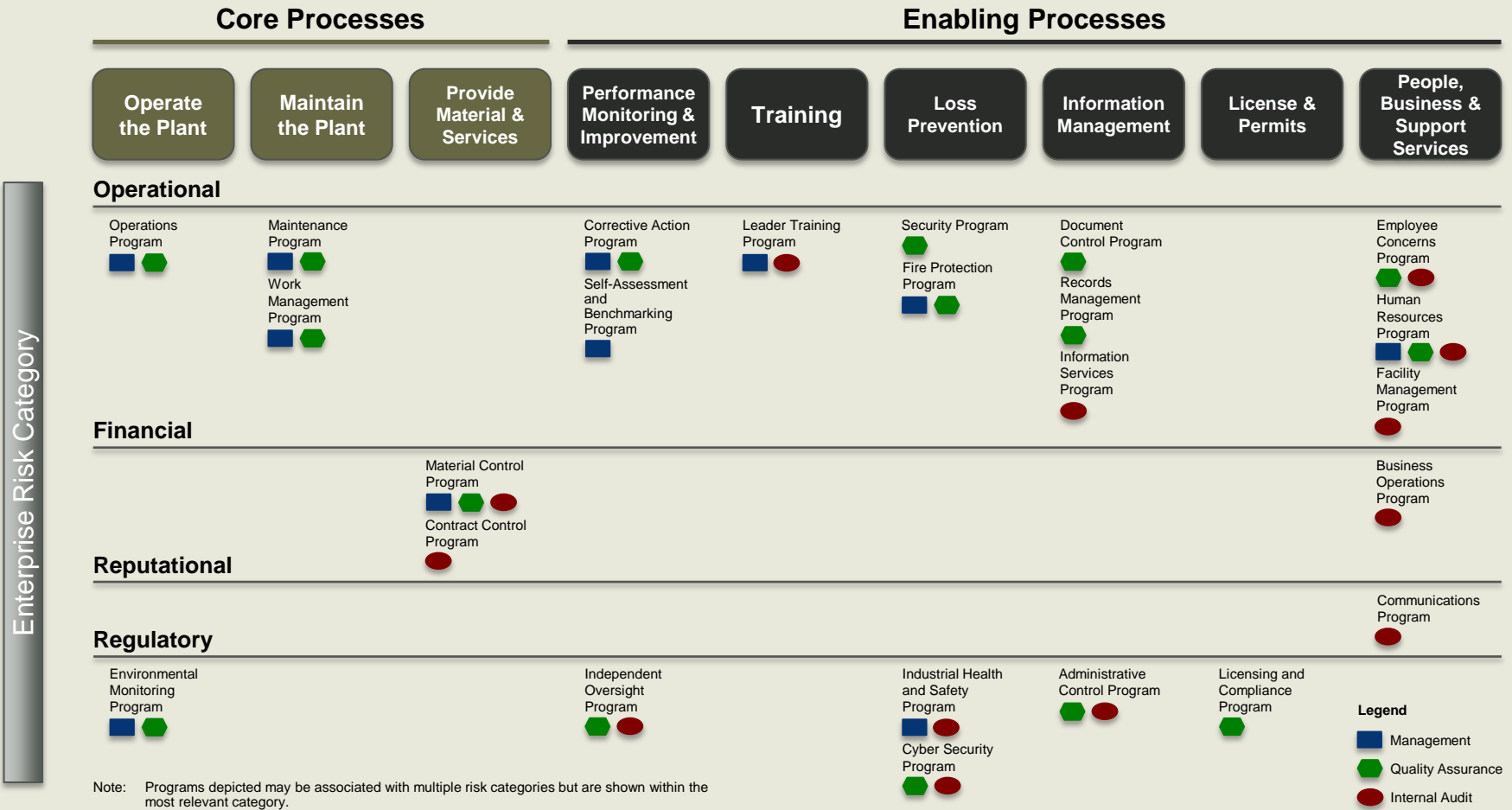


High: Those process areas routinely assessed by NQA and nuclear plant management.
 Medium: Those process areas routinely assessed by either NQA or nuclear plant management.
 Low: Those process areas not routinely assessed by either NQA or nuclear plant management.

Periodicity: O - Ongoing A - Annual
 P - Periodic 18 - 18 months
 C - Conditional B - Biennial
 Q - Quarterly 24 - 24 months
 S - Semi-annual T - Tri-annual

These assessments focus on areas based on plant performance, industry trends, and management discretion. All other audits are based on predefined performance requirements as established by law/regulation.

EXAMPLE – EXECUTIVE / BOARD LEVEL ASSURANCE MAP



FINALIZING ASSURANCE MAP

Once the Assurance Map is completed:

- Identify gaps in assurance coverage
- Determine areas of redundant oversight
- Isolate low value monitoring activities
- Optimize the internal audit plan and management's assessment activities
- Update the audit universe and multi-year audit plan leveraging the Assurance Map

IMPORTANT LESSONS LEARNED

Following these practices improves Assurance Map accuracy and gains organization buy-in:

- Obtain the Assurance Map's contents from those directly responsible:
 - Leverage corporate risk identification as an input to the Assurance Map
 - Partner with business unit executives to identify organization specific risks
 - Work directly with line organization managers to identify business processes and oversight activities
- Validate the map's accuracy from operational managers up to corporate executives
- Update the Assurance Map on a periodic basis

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