

2021 PIPELINE CONTROL ROOM AND CYBERNETICS CONFERENCE

Stakeholder Engagement for a Comprehensive
Pipeline Assurance Program



Evan Baker, MSc, EP(CEA)

- Assurance Practice Lead for SPAN Consulting
 - Assurance Program Design & Implementation
- 30 Years in the Pipeline Industry & Auditing
- Environmental Assessment & Regulatory Applications
- Certified Environmental Auditor since 2003
- API RP 1173 Third Party Assessment Program Auditor
- 2020 Eco Canada Impact Auditor of the Year



- Operations Management Systems
- Audits and Assurance Programs
- Program Design & Implementation

POWERED BY

The logo for OCTANE features the word "OCTANE" in a bold, orange, sans-serif font with a small "TM" trademark symbol to the upper right.

Compliance Software Solutions

Objectives for Today

- Propose a framework and tools to
 - engage stakeholders in developing a pipeline assurance program.
 - give your stakeholders ownership in the process and results.

API RP 1173

S 10 – Safety Assurance

- Evaluate the application of PSMS
- Determine progress toward effective risk management and improved pipeline safety performance
- Use audits to examine conformity of the PSMS to this document

S 6 – Stakeholder Engagement

- Communication and engagement with internal and external stakeholders regarding risk identification, management, and safety performance
- Encouraging two-way communication
- Process for communicating and applying lessons learned



How do we bring these two together?

What is Assurance?

API 1173

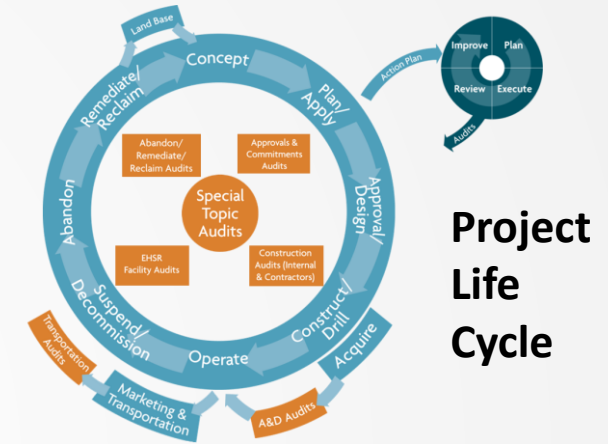
- Audit
- Evaluation of Risk Management, Safety Performance, Safety Culture, PSMS Maturity
- Reporting and Feedback System
- Performance Measurement and Analysis of Data – KPI's

Evan's World

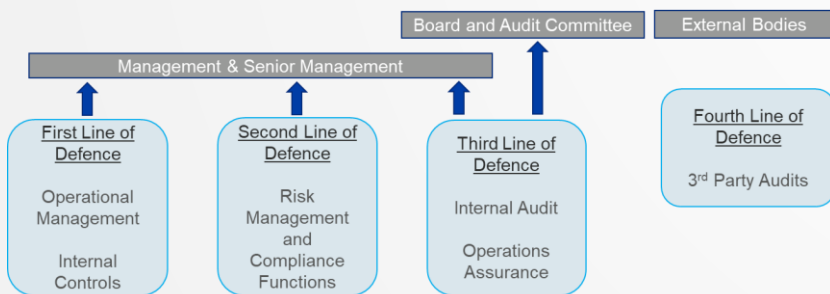
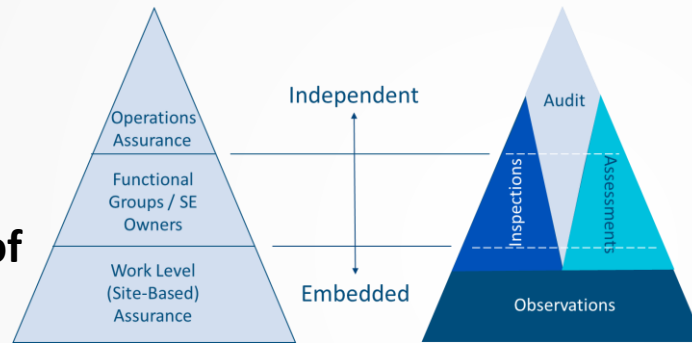
- **Operations Assurance:** The system of controls and assurance activities that are designed to provide confidence that the organization's processes and programs are functioning as intended, within the limits imposed by corporate and other standards.

Concepts to Tie Together Today

- What does assurance apply to in the organization – Project Life Cycle
- Hierarchy of Assurance Activities
- Lines of Defence
- Assurance Mapping



Hierarchy of Assurance



Lines of Defence

Stakeholders

An example of a simple assurance map

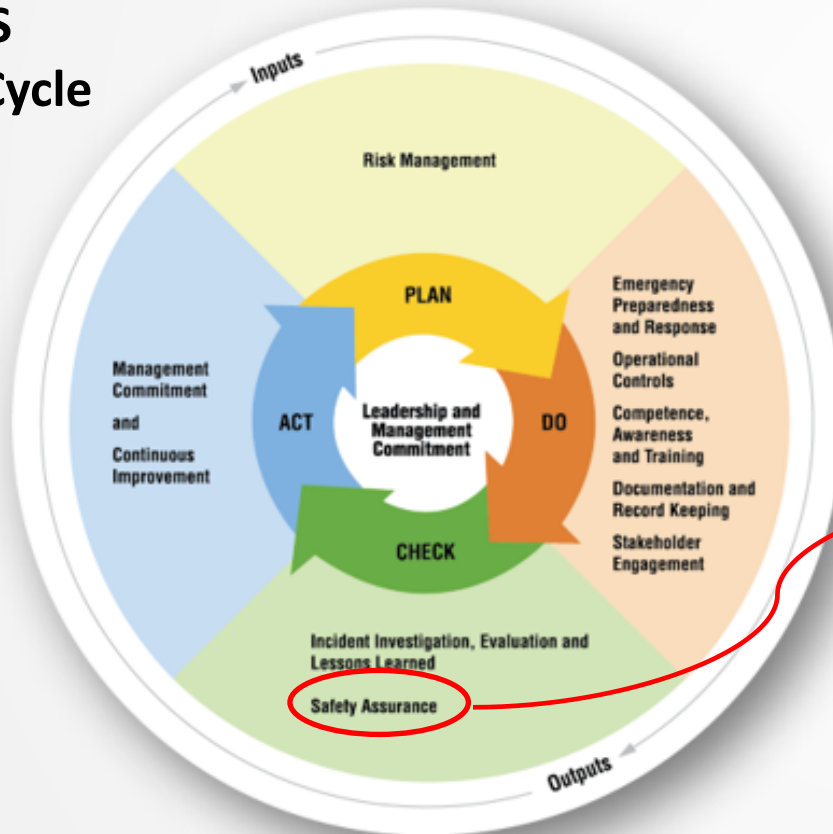
	1st Line		2nd Line		3rd Line	4th Line
	Policy Framework	Management Review	Control Self Assessment	Risk and Assurance Review	Group Legal	Board Review
Financial Reporting	Green	Green	Green	Green	Green	Green
Financial Controls	Green	Green	Green	Green	Green	Green
Legal	Green	Green	Green	Green	Green	Green
IT	Green	Green	Green	Green	Green	Green
Treasury	Green	Green	Green	Green	Green	Green
Tax, Pension and Insurance	Green	Green	Green	Green	Green	Green
Human Resources	Green	Green	Green	Green	Green	Green
Fraud	Green	Green	Green	Green	Green	Green
Health & Safety	Green	Green	Green	Green	Green	Green

KEY: High Assurance (Green), Medium Assurance (Yellow), Low Assurance (Orange), No assurance - surmountable assurance in this area (Red), Not Applicable (White)

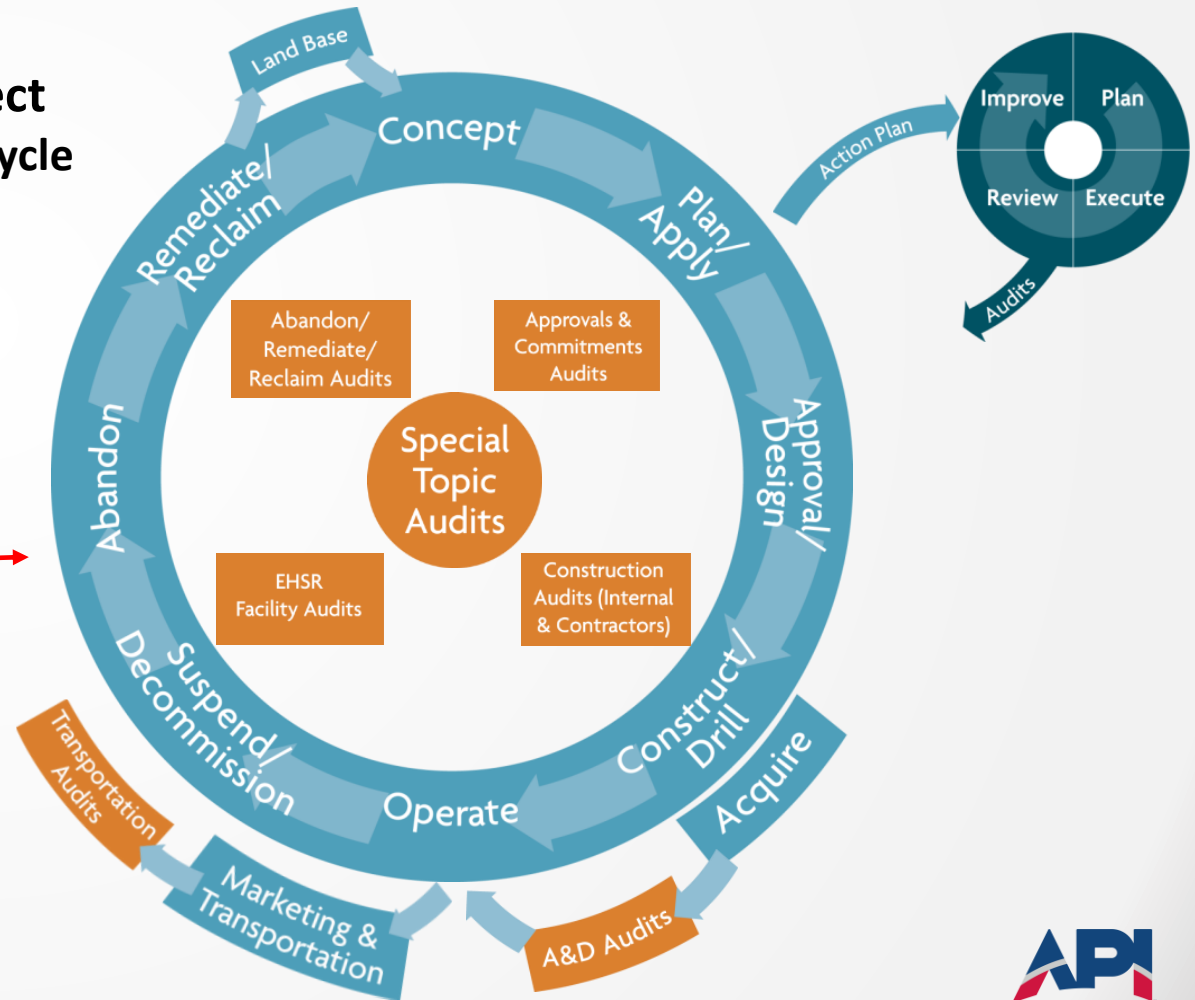
Assurance Map

What Does Assurance Apply to?

PSMS Life Cycle



Project Life Cycle



Types/Levels of Assurance Activities

Audit: An **independent**, systematic, examination and evaluation of practices and facilities to verify compliance and conformance.

Assessment: A systematic process for assessing requirements against management systems, standards, procedures and activities to identify gaps and recommendations for improvement.

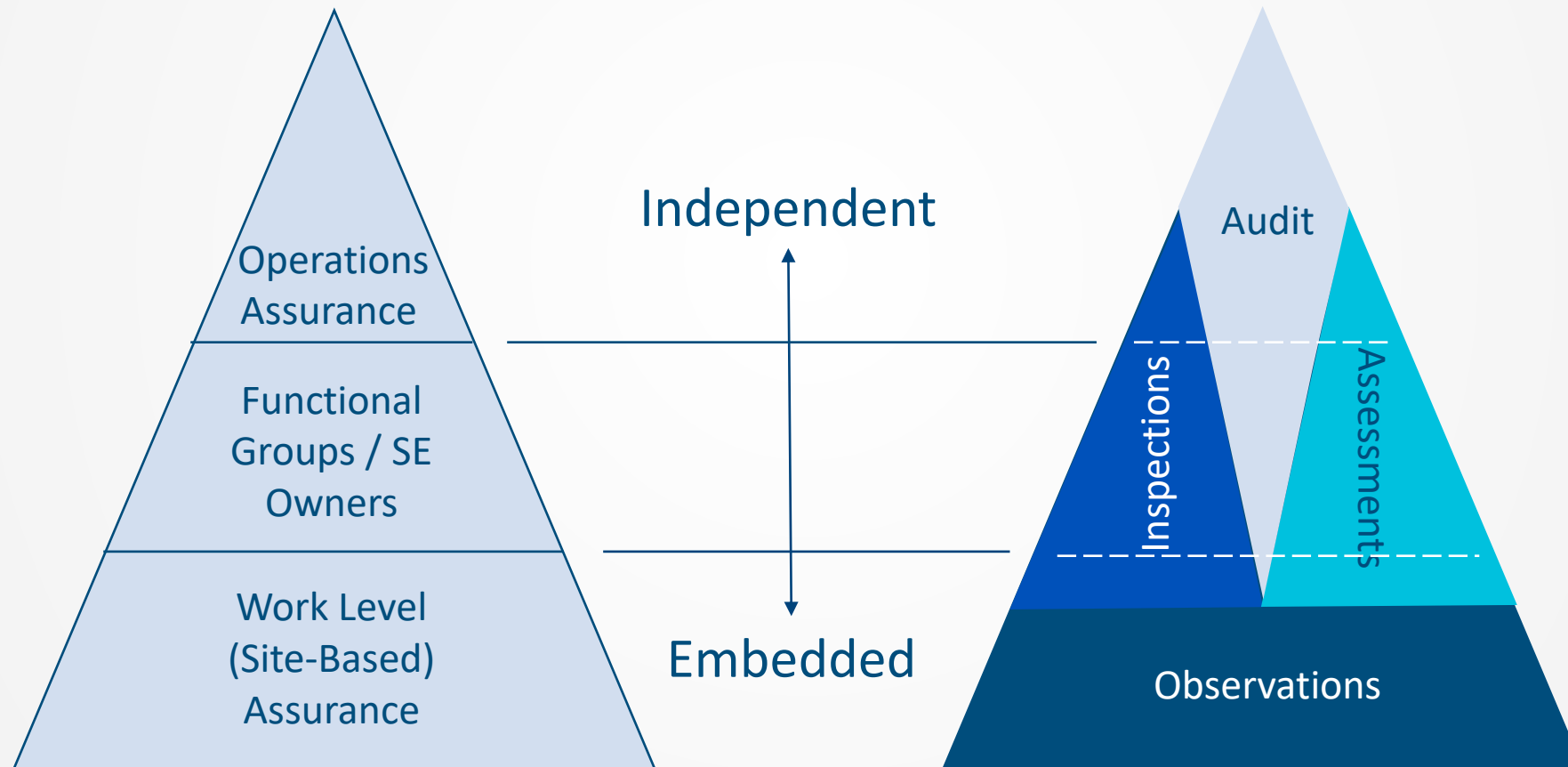
- Various tools/techniques
- Might look like an audit except for level of independence
- Useful for groups to self-evaluate their own processes & performance

Inspection: A visual examination of facilities, operations and activities to assess conformance with defined criteria

Observation: A formal or informal examination of a work activity, practice, or behavior

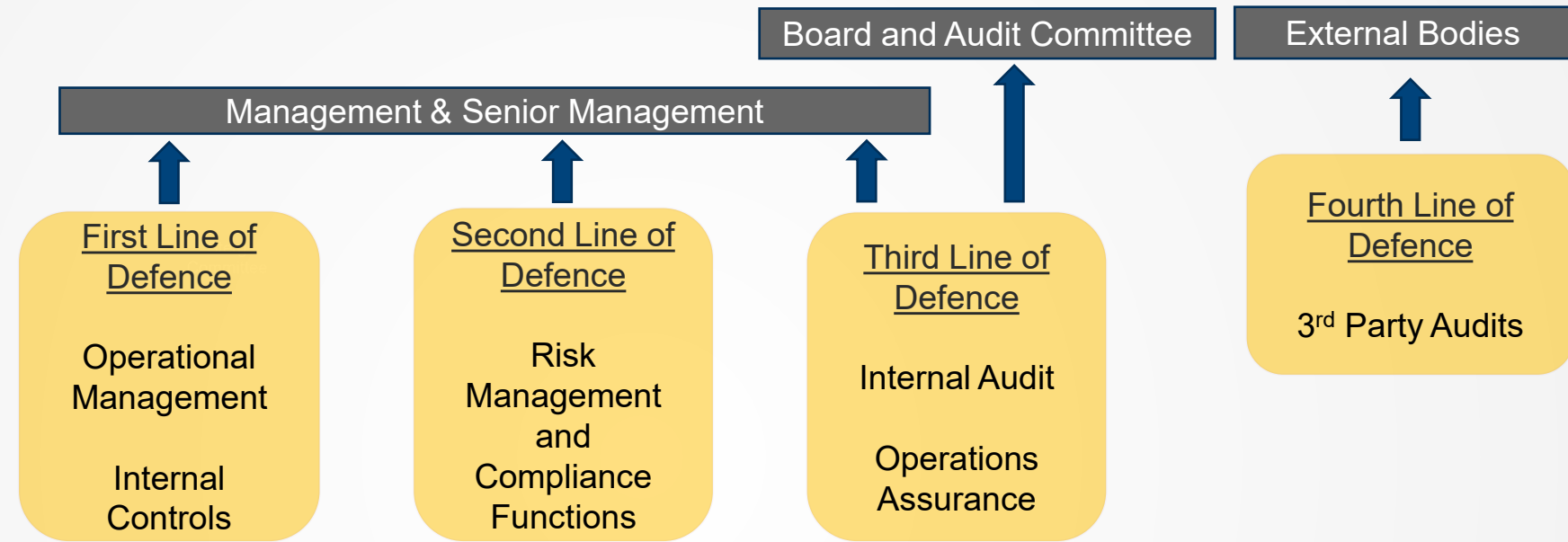
Assurance Activities Hierarchy

- Higher in the pyramid = independence and often done by a separate audit group
- Lower in the pyramid = ownership and incorporation into group/asset activities



OPERATIONS ASSURANCE IN THE LINES OF DEFENCE

Lines of Defense Model was developed by the Institute of Internal Auditors for Internal Audit
 • theIIA.org



First Line of Defence	Second Line of Defence	Third Line of Defence	Fourth Line of Defence
Risk Owners/Managers	Risk Control and Compliance	Risk Assurance	Risk Assessors
<ul style="list-style-type: none"> • Operations management • Day-to-day risk management 	<ul style="list-style-type: none"> • Limited independence • Reports primarily to management • Functional policy and control • Conducted by process owners 	<ul style="list-style-type: none"> • Internal audit or Operations Assurance • Greater independence • Reports to governing body • May use external auditors 	<ul style="list-style-type: none"> • Work for external regulatory, insurance or certification bodies, or partners • Not planned by the company and out of their control

OPERATIONS ASSURANCE ACCOUNTABILITIES

First Line of Defence	Second Line of Defence	Third Line of Defence	Fourth Line of Defence
Risk Owners/Managers	Risk Control and Compliance	Risk Assurance	Risk Assessors
<ul style="list-style-type: none">• Operations Mgrs,• Maintenance Mgrs,• Control Room Mgrs• Area Superintendents	<ul style="list-style-type: none">• Functional Group• Sr. Subject Matters Experts	<ul style="list-style-type: none">• Compliance and Internal Audit• Operations Assurance• Independent Audit Function	<ul style="list-style-type: none">• Regulators• Insurers• Partners• Organizations

Principles of Lines of Defence

- **Governance & governing body roles**
 - ✓ Governing body accountability, structures defined, and responsibility delegated
 - ✓ Defined and communicated
- **Management – 1st & 2nd line roles**
 - ✓ Service delivery & risk management – separate or blended
- **Assurance – 3rd line roles**
 - ✓ Independent audit functions with line of sight to mgmt. and governance bodies
- **All lines work together**
 - ✓ Controls and assurance activities provide quantity and quality of risk management
- **Allocation of controls and embedded assurance**
 - ✓ Build more controls into earlier lines and fewer controls into the later lines of defence

First and Second Lines

First Line: Operational Management

- Ops Mgrs, Maint Mgrs, Ctrl Rm Mgrs ...
- Role: Running the operation - Ops teams support Mgrs through application of controls and embedded assurance
- Controls: Operating procedures, hazard assessments, daily safety meetings
- Embedded assurance: Safe Work Observations, site Inspections

Second Line: Risk Management

- Functional Groups & Sr SME's
- Role: Support 1st & 2nd lines, assess, manage and report on specific risks
- Programs: Environment, H&S, Integrity, Process Safety, Regulatory et al
- Operational oversight – focused committees e.g. process safety
- Embedded assurance: Internal reviews and assessments

First Line of
Defence

Operational
Management

Internal
Controls

Second Line of
Defence

Risk
Management
and
Compliance
Functions

Third and Fourth Lines

Third Line: Independent Assurance

- Compliance and Internal Audit, Operations Assurance & Independent Audit Functions
- Role: Assess & Report to Sr Mgmt, 1st & 2nd Line Mgrs, Board
- Facilitate planning and execution of assurance activities,
 - Conduct independent audits of the PSMS, assets and programs to evaluate effectiveness of controls and embedded assurance
 - Track and evaluate progress on gaps and action items

Third Line of
Defence

Internal Audit
and Operations
Assurance

Fourth Line: External Assurance

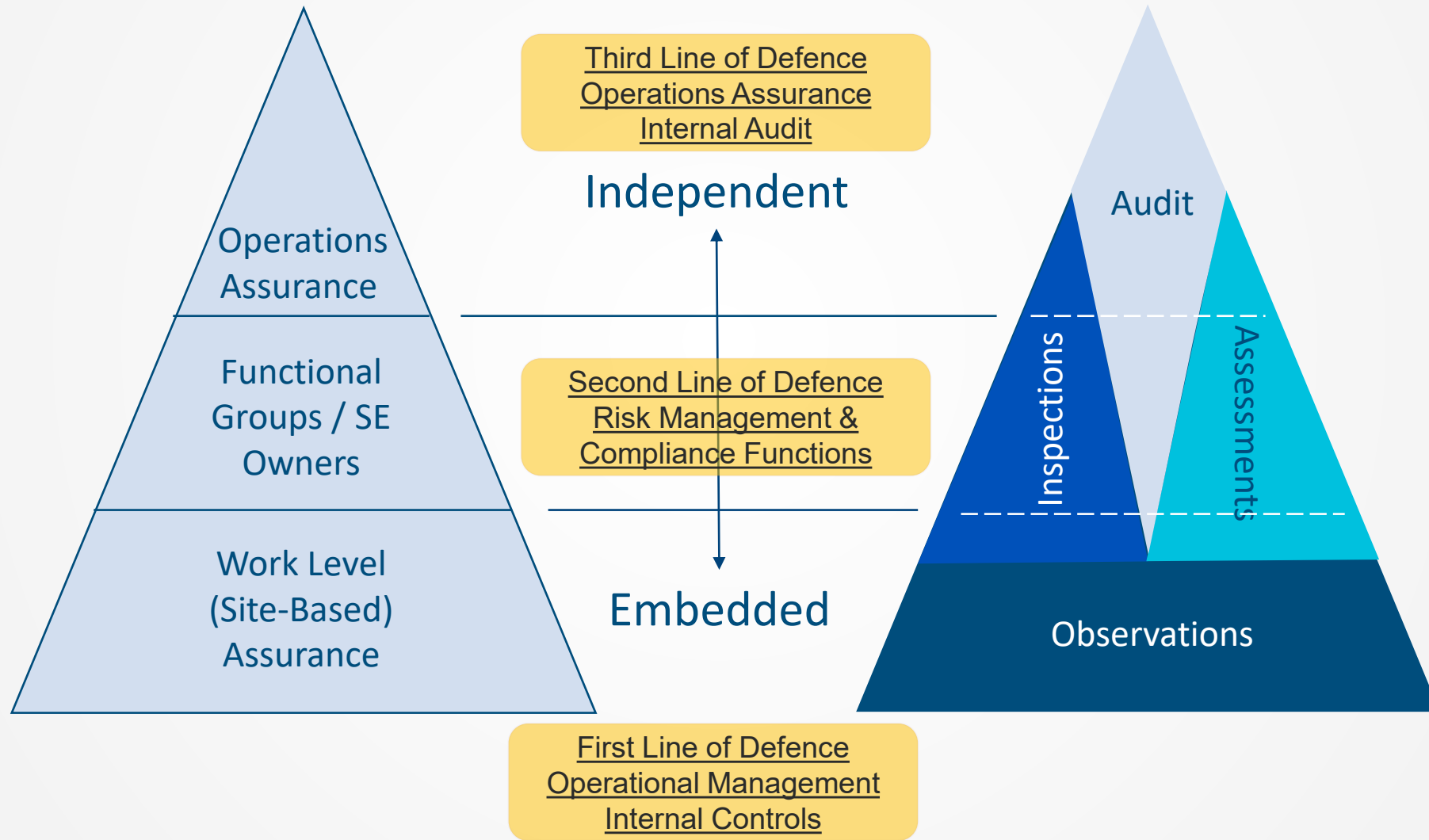
- Regulators, Insurers, Partners, Organizations, Certifiers
- Role: Conduct assurance on behalf of regulators and stakeholder organizations
 - Valuable information to guide internal controls and assurance activities

Fourth Line of
Defence

3rd Party Audits

Putting the Hierarchy and Lines of Defence Together

Typically, the higher up the assurance pyramid, the higher line of defence



What is an Assurance Map?

- A matrix comprising a visual representation of the organization's risks and all the internal and external providers of assurance services that cover those risks.
 - ✓ IIA International Professional Practices Framework (IPPF) Practices Guide: Developing an Assurance Map
- Assurance needs and coverage are depicted for each of the Four Lines of Defence

	1st Line		2nd Line				3rd Line	4th Line	
	Control Framework	Management Review	Control Self Assessment	Risk and Compliance review	Group Legal	Board Review	Internal Audit	External Auditors	Other Third Party
Financial Reporting	High Assurance	High Assurance	Medium Assurance	Medium Assurance	Low Assurance	Low Assurance	High Assurance	High Assurance	Not Applicable
Financial Controls	High Assurance	High Assurance	Medium Assurance	Medium Assurance	Low Assurance	Low Assurance	High Assurance	Medium Assurance	Not Applicable
Legal	Low Assurance	Low Assurance	Not Applicable	Medium Assurance	High Assurance	Low Assurance	Low Assurance	Not Applicable	Not Applicable
IT	Low Assurance	Low Assurance	Medium Assurance	Low Assurance	High Assurance	Low Assurance	Low Assurance	Not Applicable	Not Applicable
Treasury	Medium Assurance	Medium Assurance	Low Assurance	Medium Assurance	High Assurance	Low Assurance	Low Assurance	Low Assurance	Not Applicable
Tax, Pension and Insurance	Medium Assurance	Medium Assurance	Low Assurance	Low Assurance	Low Assurance	Low Assurance	Low Assurance	Low Assurance	Not Applicable
Human Resources	Medium Assurance	Low Assurance	Low Assurance	Medium Assurance	Low Assurance	Low Assurance	Low Assurance	Not Applicable	Not Applicable
Fraud	Medium Assurance	Low Assurance	Medium Assurance	Low Assurance	Not Applicable	Low Assurance	Low Assurance	Low Assurance	Not Applicable
Health & Safety	Medium Assurance	Medium Assurance	Medium Assurance	Medium Assurance	Low Assurance	Low Assurance	Low Assurance	Not Applicable	High Assurance
KEY	High Assurance		Medium Assurance		Low Assurance		No assurance - but should be assurance in this area		Not Applicable

Assurance Map – Big Picture

An example of the main components of an assurance map

High Level Operations Assurance Map										
Entity or Process ^{*1} PSMS Sub-Element	Operational Risk Categories & Risks Complete with identified risks from the Operational Risk Register and other sources.	Desired / Required Amount of Assurance ^{*4}	Assurance Providers ^{*2}					Current Overall Amount of Assurance Provided ^{*5}	Comments and Identified Gaps	Actions
			First Line - Product Delivery	Second Line - Risk Mgmt Support	Third Line - Ops Assurance	Fourth Line - External Assurers				
			Current Amount of Assurance	Current Amount of Assurance	Current Amount of Assurance	Current Amount of Assurance				
Organizational Structure & Responsibility	People: Lack of accountability leads to poor decisions	M	M	L	L	N	L	Main assurance provided by first line procedures	Consider increasing second line assurance / oversight	
Pipeline Integrity	Environment, Customer Relations: Significant spills, potential public impact	H	H	H	M	H	H	Hi regulatory scrutiny - robust internal assurance systems - no identified gaps	Monitor regularly	
Stakeholder Engagement	Reputation: Project opposition, media attention	H	H	M	N	N	M	No independent assurance	Include in PSMS audits on a regular cycle	
Security	Operational, Safety: Pump stn damage, potential terrorist act resulting in total shutdown	H	M	H	H	M	H	Sufficient assurance provided	None required	
Document Management	Regulatory/Legal: Regulator scrutiny due to poor audit results	M	H	L	N	N	L-M	Few embedded assurance checks on records mgmt	Consider embedded assurance and include in PSMS audits on a regular cycle	
Operations & Maintenance	Financial, Operational: High O&M costs, poor maintenance results in down time	M	H	M	M	H	H	Overall level provided is high, desired level medium. Overall assurance costs are moderate	Maintain current assurance programs. Revisit annually.	
Optimization	Operational, Financial: Inefficient operation, cost-competitiveness	L	L	M	H	N	M	Ops Assurance conducts contractor audits annually at high cost	Reduce audit frequency to tri-annual	

Let's break it down into its parts and process

Identify Risks

1. Identify the operational risks for each category (e.g. Sub-Element)
2. Decide on desired level of assurance needed based on risks

1 Entity or Process^{*1} PSMS Sub-Element	Operational Risk Categories & Risks Complete with identified risks from the Operational Risk Register and other sources.	2 Desired / Required Amount of Assurance^{*4}
Organizational Structure & Responsibility	People: Lack of accountability leads to poor decisions	M
Pipeline Integrity	Environment, Customer Relations: Significant spills, potential public impact	H
Stakeholder Engagement	Reputation: Project opposition, media attention	H
Security	Operational, Safety: Pump stn damage, potential terrorist act resulting in total shutdown	H
Document Management	Regulatory/Legal: Regulator scrutiny due to poor audit results	M
Operations & Maintenance	Financial, Operational: High O&M costs, poor maintenance results in down time	M
Optimization	Operational, Financial: Inefficient operation, cost-competitiveness	L

Assess Coverage By Lines of Defence

3. Inventory the assurance coverage provided by each Line of Defence
 - What activities are being done at each level
4. Assess the overall level of assurance coverage

Entity or Process ^{*1} PSMS Sub-Element	Desired / Required Amount of Assurance ^{*4}	Assurance Providers ^{*2}				Current Overall Amount of Assurance Provided ^{*5}
		First Line - Product Delivery Current Amount of Assurance	Second Line - Risk Mgmt Support Current Amount of Assurance	Third Line - Ops Assurance Current Amount of Assurance	Fourth Line - External Assurers Current Amount of Assurance	
Organizational Structure & Responsibility	M	M	L	L	N	L
Pipeline Integrity	H	H	H	M	H	H
Stakeholder Engagement	H	H	M	N	N	M
Security	H	M	H	H	M	H
Document Management	M	H	L	N	N	L-M
Operations & Maintenance	M	H	M	M	H	H
Optimization	L	L	M	H	N	M

Stakeholder Engagement in the Assurance Map

First Line Functions - Front line work delivering the product			
Control Framework	Front Line (Embedded) Assurance Activities	Managerial Review	Current Level of Assurance
What controls are in place to address the identified risks? How effective are they?	What inspections, observations are employed by front line staff to address the identified risks?	What forms of review of risks, controls, incidents etc are undertaken by front line management?	

Second Line Functions - Risk management support				
Operational & Functional Risk Management	SME Support, Monitoring and Reporting	Operational Oversight - Committees	Assurance Activities & Facilitated Assessments	Current Level of Assurance
Is there a Risk Management function? How is it applied?	What level of subject matter expertise is available?	Are there Operational Committees or other oversight groups? What do they provide?	What internal inspections & assessments are applied to the subject matter & controls?	

Third Line Functions - Assurance			
Assurance Activities - Audits & Assessments	Operating Committees Reviewing Assurance	Audit Committee of the Board	Current Level of Assurance
What are the existing audits and assessments? How thorough is the coverage?	Is there an assurance governance committee? Do they review results?	Are audit results reported to the Board?	

Fourth Line - External Assurance		
Regulatory	Certification, Insurance, Association, Partners & JV	Current Level of Assurance
What agencies audit/inspect? How are results analyzed & managed?	Inventory external audits and how results are analyzed & managed.	

First Line of Defence



The coolest
control - Karelian
Bear Dogs on the
Cold Lake Air
Weapons Range

Basis for Decisions

- Compare desired level of assurance for all LODs with the current coverage
- Assess alignment - Identify potential gaps, overlaps, actions

Entity or Process ^{*1} PSMS Sub-Element	Desired / Required Amount of Assurance ^{*4}	Current Overall Amount of Assurance Provided ^{*5}	Comments and Identified Gaps	Actions
Organizational Structure & Responsibility	M	L	Main assurance provided by first line procedures	Consider increasing second line assurance / oversight
Pipeline Integrity	H	H	Hi regulatory scrutiny - robust internal assurance systems - no identified gaps	Monitor regularly
Stakeholder Engagement	H	M	No independent assurance	Include in PSMS audits on a regular cycle
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Optimization	L	M	Ops Assurance conducts contractor audits annually at high cost	Reduce audit frequency to tri-annual

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Where to From Here?



Develop action plans to feed into annual and long-range audit/assurance activity planning.

Concepts & Tools to Engage Stakeholders

- Project Life Cycle
- Hierarchy of Assurance Activities
- Lines of Defence
- Assurance Mapping
 - Identify sources of risk information
 - Identify entities to map
 - Identify and assess risks and decide on desired level of assurance coverage
 - Gather information and document assurance coverage
 - By Line of Defence
 - Evaluate overall level of assurance provided
 - Assess gaps, develop actions and incorporate into assurance system
 - Analyze and use for long-range and annual assurance planning

Are We Headed in the Right Direction?



Don't turn your backs on stakeholders – engage them to make them owners in assurance processes.

It's all part of the journey

Auditors at “work”

Questions, so
many questions.



SPAN™