

Breaking Down the Defense

Enbridge Journey on Integrated Audits

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Thank you, Enbridge Team

We have an excellent high performing diverse cross border team including backgrounds in IT, Finance, Engineering, Safety, Auditing, Operations and Regulatory

Full disclosure...I'm a bean counter (Texas CPA)

Kick Off Question

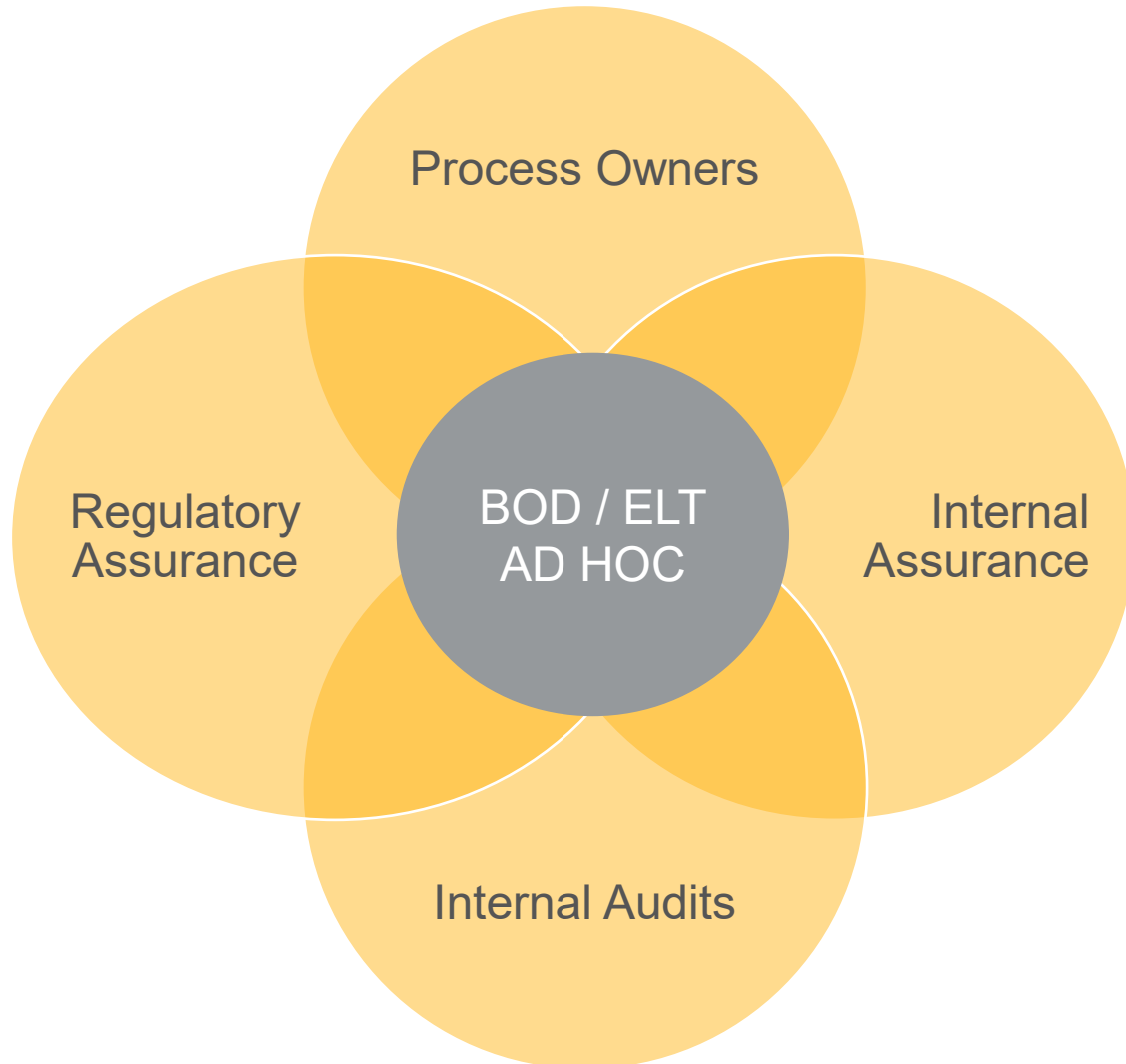
What day is national bean counter day?



Lines or bubbles of defense?

Bubbles...

Bubbles of Defense - Assurance overlap



Overlap Questions

- How much risk do assurance activities cover?
- Are Board/ELT special requests *really* special?

Assurance Mapping Exercise

- Define and keep scope tight

Potential Overlap

- Report on Risk
- Report on Compliance
- Identification and reporting on Gaps
- Management Action Plans
- Root Cause

A hand is shown reaching out from the right side of the frame towards a bright, glowing point of light in the center. The background is a dark, starry space with a faint, hazy horizon line. The text "Why break down the defense?" is overlaid in white, sans-serif font across the upper portion of the image.

Why break down the defense?

Football vs Football

We need to speak the same risk language



Advantages

Same Risk Language

- Timely access to holistic enterprise point-of-view on risk
- Leverage assurance from multiple stakeholders, including regulators for compliance
- Consistent assessment and reporting across the organization

Support Business

- Identify trends and become early warning system
- Identify and address field level risks timely and learn from each other
- Support compliance across the organization

Reduce Impact

- Reduce audit fatigue and operational distraction
- Reduce expenditures and reliance on external consultants
- One assurance process to manage



Tradeoffs

Compliance can eat risk for breakfast

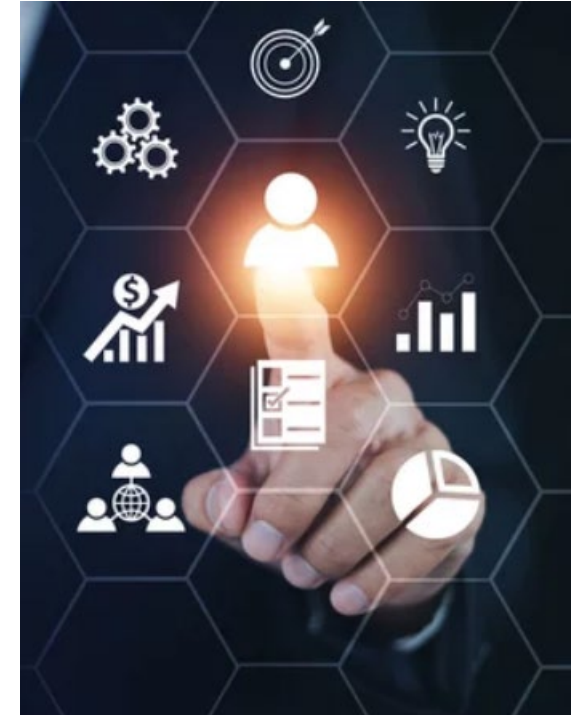
- Allocate right audit effort to higher risks
- Conformance to internal requirements vs Compliance with external requirements
- Compliance requirements can have different meanings

Definitions of assurance can vary widely

- Define assurance and how to opine
- Keep it simple, transparent and spend time to define it internally
- Regulatory requirements cover current risks but may not cover future risks

Broader scope can result in larger projects

- Robust project management plan
- Ongoing stakeholder and communication plan
- Internal audit resource management (training, allocation, team compliment)



Catalyst Moments

Year 1

Where were the lines of defense?



Enbridge's Line 6B Incident – Marshall, Michigan

On Sunday, July 25, 2010, at 5:58 p.m. EST a segment of a 30-inch-diameter pipeline owned and operated by Enbridge ruptured in a wetland in Marshall, Michigan releasing about 843,444 gallons of crude oil. It is estimated to have cost Enbridge well over a billion dollars to clean up, one of the costliest onshore cleanup in U.S. history.

Texas Eastern Line 15 – Lincoln County, Kentucky

During the morning of August 1, 2019, a natural gas pipeline incident occurred on the Texas Eastern natural gas pipeline system near Danville, Kentucky resulting in a fatality.

The incident occurred on a 30-inch pipeline that forms part of the Texas Eastern natural gas system.



Board Reaction

“You are drinking your own whiskey”



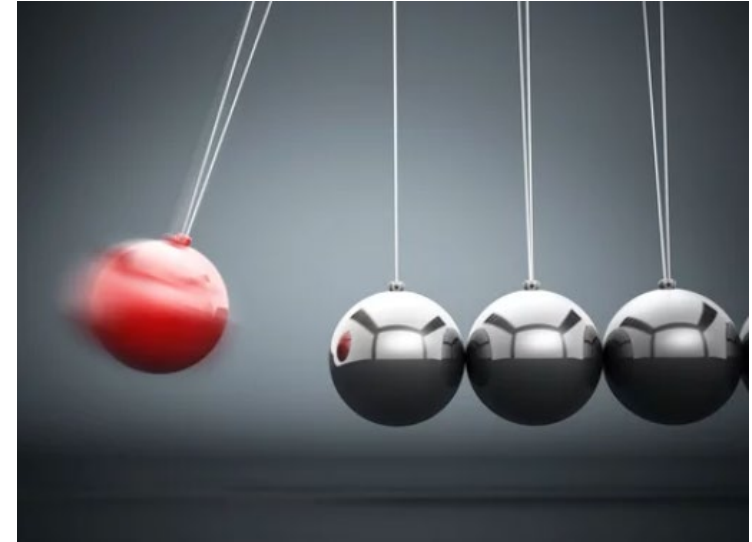
Board Required External Assessment

Year 1-2 – Management Response

- Become high reliability organization
- Lots of independent programs to move forward

Year 3 - Board Trust was Broken

- Lines of defense did not identify the issue
- Board required external evaluation every 3 years
- External 3rd party assessment taking **9 MONTHS**
 - Maturity assessment on Operational Risk Management
 - Recommendation: Develop management system and link risk programs into way of working

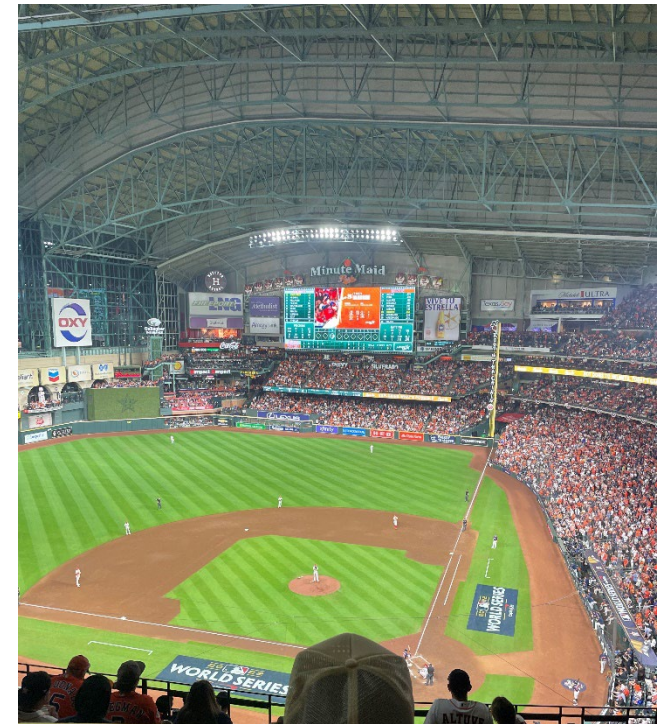
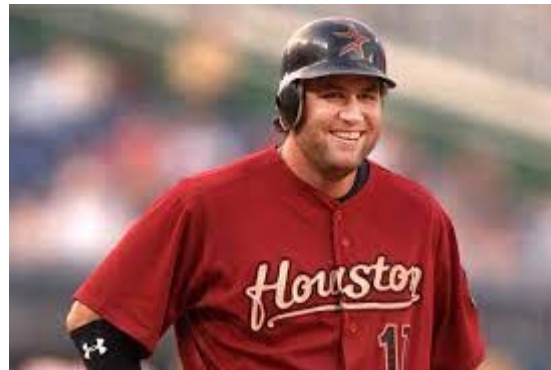


Year 6 - Rebuilding Trust

- Internal Audit injects itself with an SMR firm to evaluate progress in relation to baseline

Phase 1 - Rebuilding Trust

Internal Audit Verification Year 6-9



Started with Verifications, NOT Audits

What's a Verification Anyway? It's a "review"

- Create baseline maturity of management system, programs and process through design review
- Maturity of programs and processes using hybrid of ISO and Compliance

Value of Internal Audit

- Independent and internal
- Cross enterprise view

Challenges

1. Lack of consultation with the business on maturity framework
2. Maturity Model too flexible and implemented during audits
3. The organization didn't know who they wanted to be (Nuclear vs Chemical vs Oil and Gas)
4. Massive merger and reorganization
5. Workload too heavy a lift for Internal Audit team, leading to burnout



Meanwhile...Too Many Audits

Multiple Overlapping Audits Occurring at the same time, leading to fatigue

- Regulatory Required Audits
 - Outsourced to multiple 3rd party providers
- Regulator Audits
 - PHMSA, CER, etc.
- Internal Audits
- Second Line Inspections, QA/QC, Reviews
 - In-house and outsourced
- Board and Executive driven assurance work



LACK OF COORDINATION = OPPORTUNITY

Decision made to Integrate Audits with other Assurance activities

Regulatory Background

Enbridge has Oil, Natural Gas Transmission, and Natural Gas Distribution across North America.

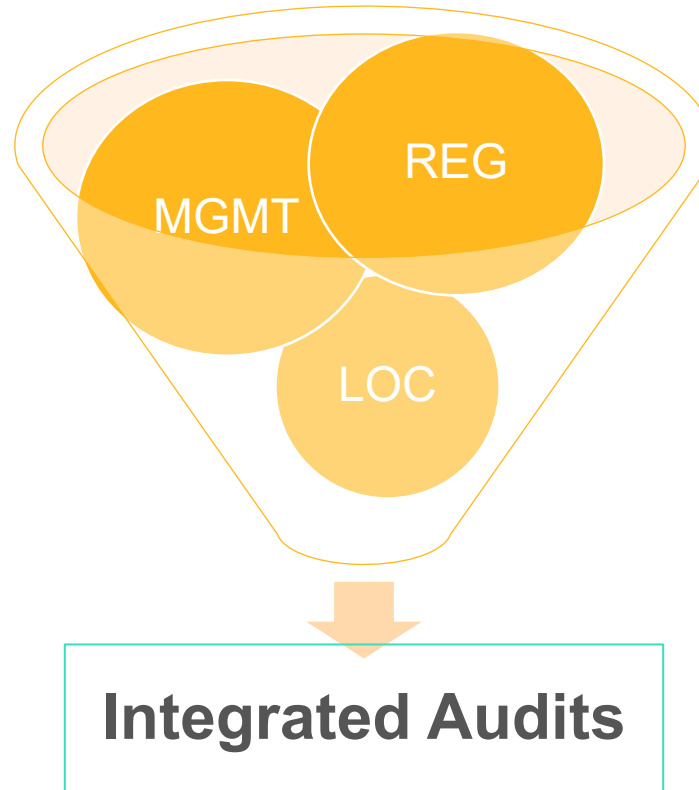
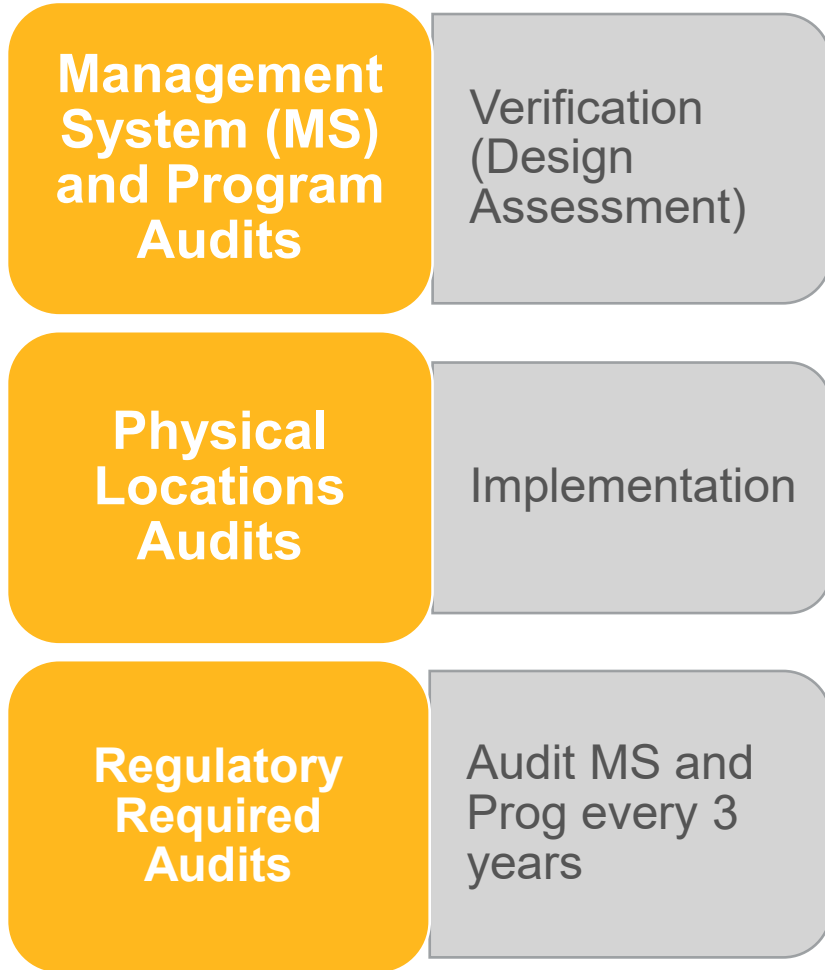
Pipelines are heavily regulated in the US and Canada

- Canadian Energy Regulator (**CER**)
- Pipeline and Hazardous Materials Safety Administration (**PHMSA**)
- Federal Energy Regulatory Commission (**FERC**)
- Environmental Protection Agency (**EPA**)
- Occupational Safety and Health Administration (**OSHA**)
- Other Federal/State/Provincial regulations

**Many industries
(not just pipelines)
are heavily
regulated**

Amalgamation of Audits and Assurance

Prior Audits/Assurance



Result over 3 years

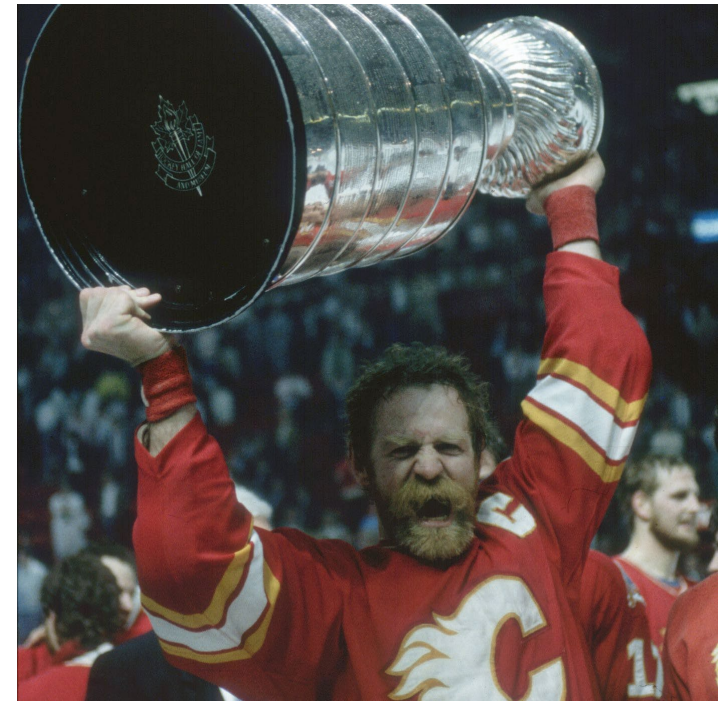
- 3 Business Units
- 11 elements
- 6 programs
- 27 Regions

Elements	Includes minimum requirements for:	Mandatory Management Programs					
Leadership and Governance	<ul style="list-style-type: none"> Accountability Policy and commitment Org structure, roles and responsibilities 	Integrity Management	Safety Management	Emergency Management	Security Management	Environmental Protection	Damage Prevention
Risk Management	<ul style="list-style-type: none"> Hazard & Risk Identification Risk Analysis Risk Evaluation Risk Treatment 						
Requirements Management	<ul style="list-style-type: none"> Legal requirements Regulatory requirements 						
Performance Management	<ul style="list-style-type: none"> Goals, objectives, targets Metrics and reporting 						
Operational Controls	<ul style="list-style-type: none"> Procedures, normal and abnormal Inspection, measurement and monitoring 						
Management of Change	<ul style="list-style-type: none"> Managing changes relating to documentation, equipment/assets, procedural, organizational, legal/regulatory, and technological. 						
Capability Management	<ul style="list-style-type: none"> Training, competence, evaluation Contractor Management Evaluation of adequate resources 						
Documents & Records	<ul style="list-style-type: none"> Documentation and document control Records Management 						
Assurance	<ul style="list-style-type: none"> Incident Investigation Audits and Assessments Corrective Actions 						
Stakeholder Engagement	<ul style="list-style-type: none"> Internal Communication External Communication 						
Management Review	<ul style="list-style-type: none"> Management Reviews at the BU and Enterprise level 						

BU Optional Management Programs

Phase 2 – Establish Trust

Integrated Audit Program



Tommy Boy slide on selling

- <https://youtu.be/oBx9UhxfPRw>



Step 1 – Sell the Program

“I’m from Internal Audit and I’m here to help”

- Reduce Audit fatigue
- Prep for external regulatory audits
- Support the growth and maturity of your business



Develop a Communication and Stakeholder Plan

- Who are the key stakeholders?
- What is their agenda?
- How do they want to be communicated with?
- Do your objectives align and should they?
- Frequency?
- Are they critical to the success?

**Maintain
Relationships
and Identify
Allies**

Step 2 - Designing and formalizing the program

Proper Prior Planning Prevents Poor Performance

Give the team the tools and resources they need to accomplish the goal

- Dedicated resources
- Mix of diverse background, including internal and external support
- Dedicated capital

Challenging Questions

- Right direction and vision for the end game?
- Robust oversight committee?
- Do external consultants know best? Biases?
- Sufficient management of change?
- The right design team?



Step 2 – Data Driven

“Errors using inadequate data are much less than those using no data at all.” — Charles Babbage (1791 – 1871)

← **IAP Analysis**

Total Event Count
115

Filters

BU, Region, Area

- CORP
- GDS
- GTM
- LP

Note: Currently, TIS is fixing the mapping between BU and Region as the information belongs to two different tables. Meanwhile, we have derived the BU information directly based on Region name.

Final Event Classification

- Environmental
- Fire/Explosion
- Motor Vehicle Incident
- People
- Property Damage
- Release/Leak/Spill
- Security

Discovered Date

Year, Quarter, Month, ...

- 2020
- 2021
- 2022

Event Classification Usage (Sept 2022)

Event Count Hypothesis: The higher the event count is, the higher the risk is for a specific region.

Year	2022			
Region	Qtr 1	Qtr 2	Qtr 3	Qtr 4
Athabasca - LP	4	2	3	5
Eastern - LP	1	2	1	
Great Lakes - LP	1	2	3	
Midwest - LP	5	2	5	9
Prairie - LP	13	12	11	6
Southwest - LP	7	3	5	10
USGC Terminal Operations - LP			1	2

Event Count Hypothesis: The higher the event count is, the higher the risk is for a specific event classification.

Region	#Event Count	Trend Line
Prairie - LP	42	
Southwest - LP	25	
Midwest - LP	21	
Athabasca - LP	14	
Great Lakes - LP	6	
Eastern - LP	4	
USGC Terminal Operations - LP	3	

Event Count/ Final Potential Severity Hypothesis: The higher the final potential severity is, the higher the risk is for a specific region.

Region	1	2	3
Athabasca - LP	12	2	
Eastern - LP	2	1	1
Great Lakes - LP	4	2	
Midwest - LP	16	4	1
Prairie - LP	25	15	2
Southwest - LP	18	6	1
USGC Terminal Operations - LP	3		

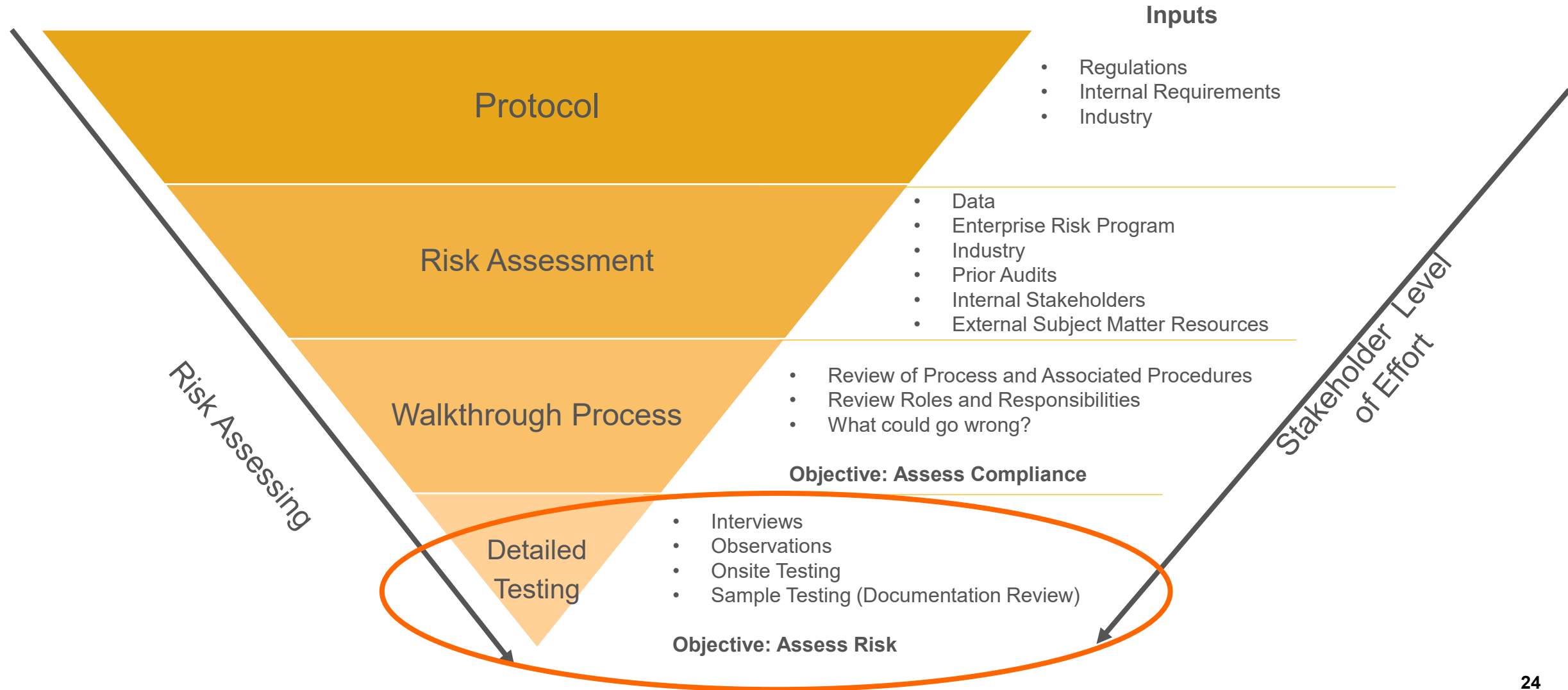
Event Count/ Final Event Classification Hypothesis: The higher the event count is, the higher the risk is for a specific event classification.

Region	Release/Leak/Spill
Athabasca - LP	14
Eastern - LP	4
Great Lakes - LP	6
Midwest - LP	21
Prairie - LP	42
Southwest - LP	25
USGC Terminal Operations - LP	3

Record Details – select fields only

DepartmentName	BU_temp	Level2RegionParent	Level3AreaParent	AssetName	EventReferenceId	EventDateKey	Final Event Classification	Final Potential Severity
Liquids Pipelines	LP	Midwest - LP	Bemidji Area	Bemidji Area Office/PLM	00033212	20221226	Release/Leak/Spill	

Audit Process Overview



Step 3 - Build the Dream Team

What works and What doesn't

Do's

- Diversity of thought and experience
- The right people for the right role
- Identify people who are curious and versatile
- Give people room for growth

Don't

- Try to build a team overnight
- Be afraid to admit mistakes and pivot
- Be everything to everybody

"I'm not the smartest fellow in the world, but I sure can pick smart colleagues."

—FRANKLIN D. ROOSEVELT



High Performing Team

- Aligned goals and objectives
- Open and clear communication
- Defined roles and responsibilities
- Trust
- Engaged leadership
- Training and competency

Step 4 – Implement the Program

Develop a playbook

- Establish repeatable processes

Train the team

- Competency

Establish robust project management

- Communication Plan
- Stakeholder Management
- Quality Assurance



Step 5 – Keep learning and adapting

Plan out the work

- Including any change management

Trial the Program

- Work with an “ALLY”

Execute According to Plan

- Repeatable audit process

Continual Program Evaluation

- Review of the program for efficiency, effectiveness, and compliance

Who could have predicted COVID?

- Impacts of work from home
- Remote auditing
- Voluntary layoffs

Speak the same language

- Assurance vs compliance vs audit?
- Consistency of business language

Implementation of Camera Technology

- Given Covid-19 travel restrictions identified methods to efficiently obtain assurance over activities in the field
- Deployed intrinsically safe camera technology developed. Technology is compatible with MS Teams and has both voice and video
- Key benefits focused on safety and resources:
 - **Reduced team travel** – team members can participate without traveling to the field.
 - **Reduce expert travel** – can have Specialists observe recordings and provide input into field level activities.
 - **Findings alignment** – sharing video evidence of what was seen in the field will align with leaders on findings easier
 - **Expanded scope** – can deploy the technology to remote locations that may not warrant a formal field visit



Keys to Winning

- Proper Prior Planning Prevents Poor Performance
- People
 - Invest
 - Empower
 - Let them make mistakes
- Keep Selling
- Link to Strategic Objectives to keep your program relevant
- Leverage Data at every turn
- Monitor for weak signals in audits and program
- Demonstrate value and support managing risk
- Keep end goal in mind = supporting positive change
- Keep evaluating and questioning the program internally and externally



Questions?

