Operational Risk Management

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Agenda

- Who We Are

- PAA OMS

- Operational Risk Management
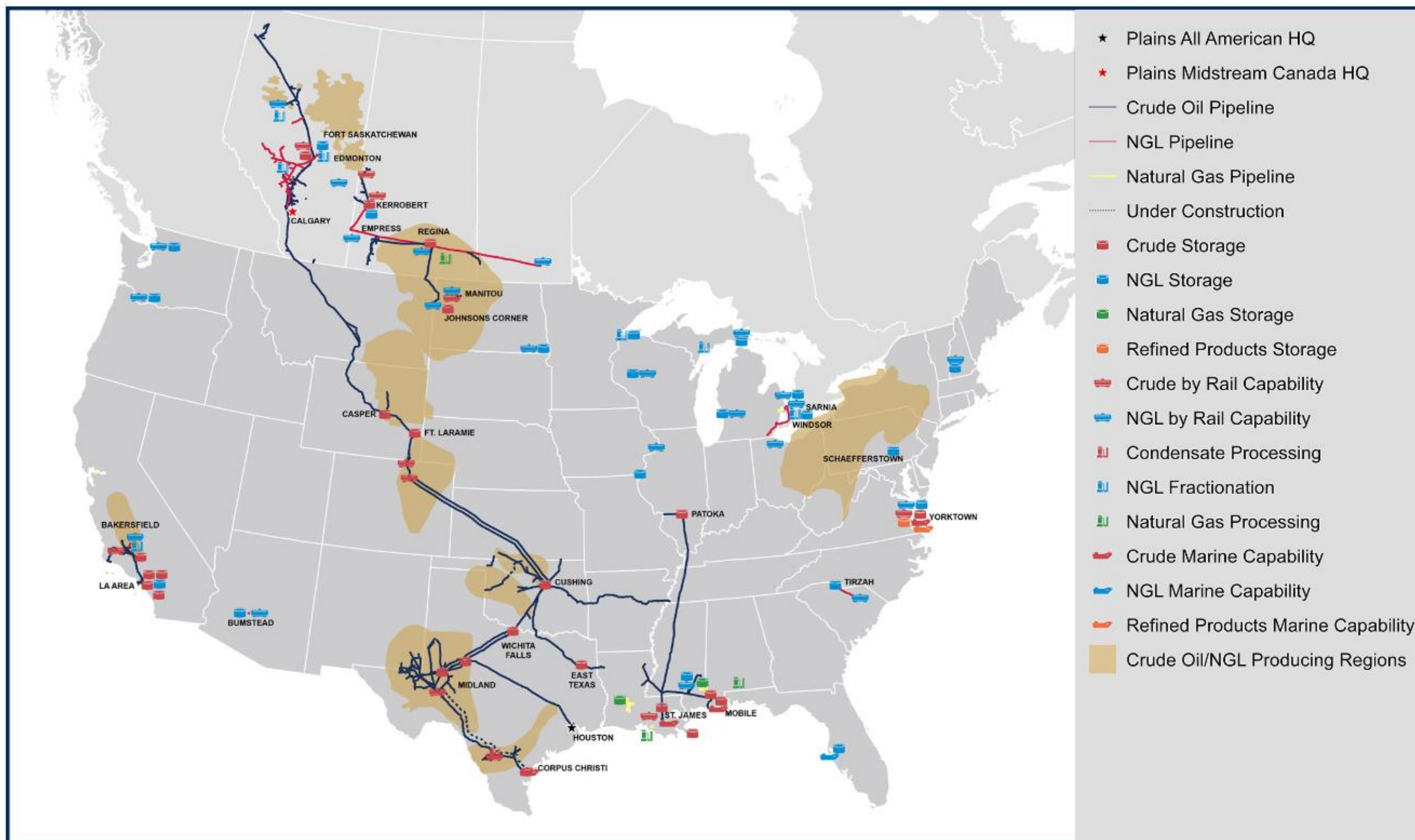
- PDCA Cycle

- Questions

Who We Are

- Plains All American Pipeline (PAA) owns and operates a midstream energy infrastructure and provides logistics services for crude oil, natural gas liquids (NGL) and natural gas.

- PAA owns an extensive network of pipeline transportation, terminals, storage and gathering assets at major market hubs in the United States and Canada

  - 18,700 miles of active lines

  - 111 million bbls of storage capacity

  - 1,600+ trucks and trailers
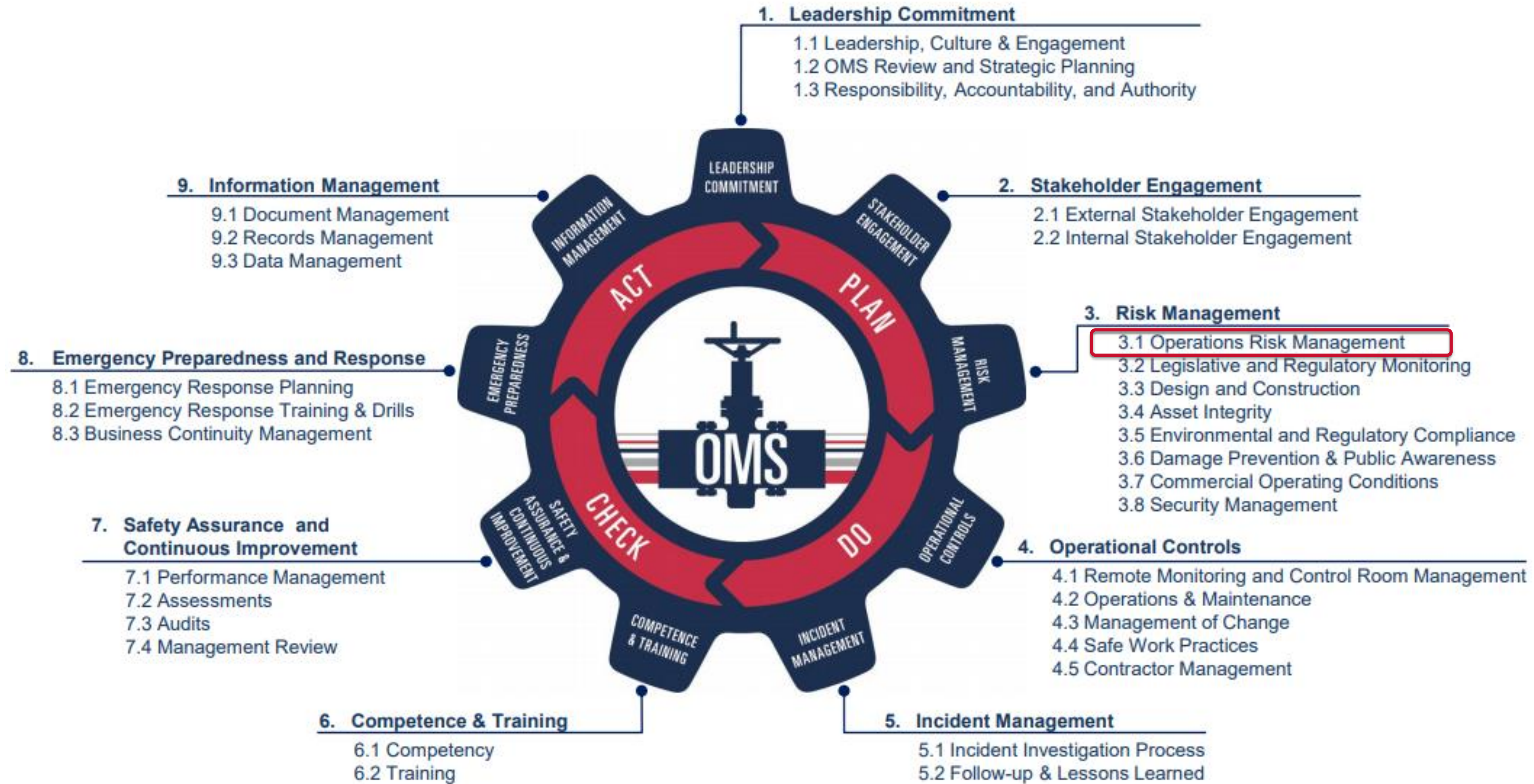
  - Over 10,000 rail cars

  - 60 barges

Who We Are

PAA Operations Management System

1. Leadership Commitment
- 1.1 Leadership, Culture & Engagement
- 1.2 OMS Review and Strategic Planning
- 1.3 Responsibility, Accountability, and Authority

9. Information Management
- 9.1 Document Management
- 9.2 Records Management
- 9.3 Data Management

2. Stakeholder Engagement
- 2.1 External Stakeholder Engagement
- 2.2 Internal Stakeholder Engagement

3. Risk Management
- 3.1 Operations Risk Management
- 3.2 Legislative and Regulatory Monitoring
- 3.3 Design and Construction
- 3.4 Asset Integrity
- 3.5 Environmental and Regulatory Compliance
- 3.6 Damage Prevention & Public Awareness
- 3.7 Commercial Operating Conditions
- 3.8 Security Management

8. Emergency Preparedness and Response
- 8.1 Emergency Response Planning
- 8.2 Emergency Response Training & Drills
- 8.3 Business Continuity Management

7. Safety Assurance and Continuous Improvement
- 7.1 Performance Management
- 7.2 Assessments
- 7.3 Audits
- 7.4 Management Review

4. Operational Controls
- 4.1 Remote Monitoring and Control Room Management
- 4.2 Operations & Maintenance
- 4.3 Management of Change
- 4.4 Safe Work Practices
- 4.5 Contractor Management

6. Competence & Training
- 6.1 Competency
- 6.2 Training

5. Incident Management
- 5.1 Incident Investigation Process
- 5.2 Follow-up & Lessons Learned

Operational Risk Management

- Risk: An operational risk is something that could go wrong…it is the combination of likelihood of an event happening and consequence if it does happen. People, the environment, and our assets may be impacted by operational risk.

- Operational Risk Management (ORM) is a continuous improvement process that uses company performance data to determine the effectiveness of our risk management controls and identifies improvements to be implemented to support the company's overall goal of reducing risk.

ORM PDCA Cycle

Adjust Plans as needed

Risk Management Plan for each Operational Risk Area

Procedures and processes for each Risk Control

Periodic Review

Compare performance measured against targets

Execute plans

Collect metrics

Track incidents, close calls and good catches

PLAN – Getting Started

Company Review

- Meetings with various groups engaged with risk management activities

- Understand current controls (programs/processes/procedures) in place

Mapping

- Mapped controls to Risk Areas

- Developed consistency in approach

Risk Management Plans

- Developed plans demonstrating Plains' approach to managing Risk

- Initially focused on six areas:
  - Pipeline Releases
  - Facility Releases
  - Motor Vehicle Incidents
    - Pipeline Operations
    - Trucking
  - Personal Injuries
  - Trucking Releases
  - Contractor Incidents

PLAN – Risk Area & Risk Controls Example

Facility Releases

- Company Operating Procedures
- Preventive/Predictive Maintenance
- Station Awareness Inspections
- Hazard Awareness
- External Corrosion Program
- Internal Corrosion Program
- No-flow and Low-flow Station Piping Initiatives
- Non-Destructive Testing
- Visual Inspections
- Tank Inspection Program

- Design and Construction Specifications
- Material Quality Specifications
- Construction Quality
- Pre-Startup Safety and Operations Review
- Leak Detection
- Remote Monitoring
- Damage Prevention Program
- Emergency Preparedness and Response
- Security Management
- Work Permitting and Job Safety Analysis
- Lockout Tagout

Supporting Processes

- Close Call, Good Catch, and Incident Reporting
- Operator Qualifications
- Training
- MOC
- Document Management
- Records Management
- Data Management / GIS

DO – Execute and Report

- Risk control policies, processes, and procedures are followed

- Incidents, near misses, and hazard IDs are reported in the incident management tool

- Data is collected to enable data-driven reviews of performance (focused on effectiveness, not just completion)
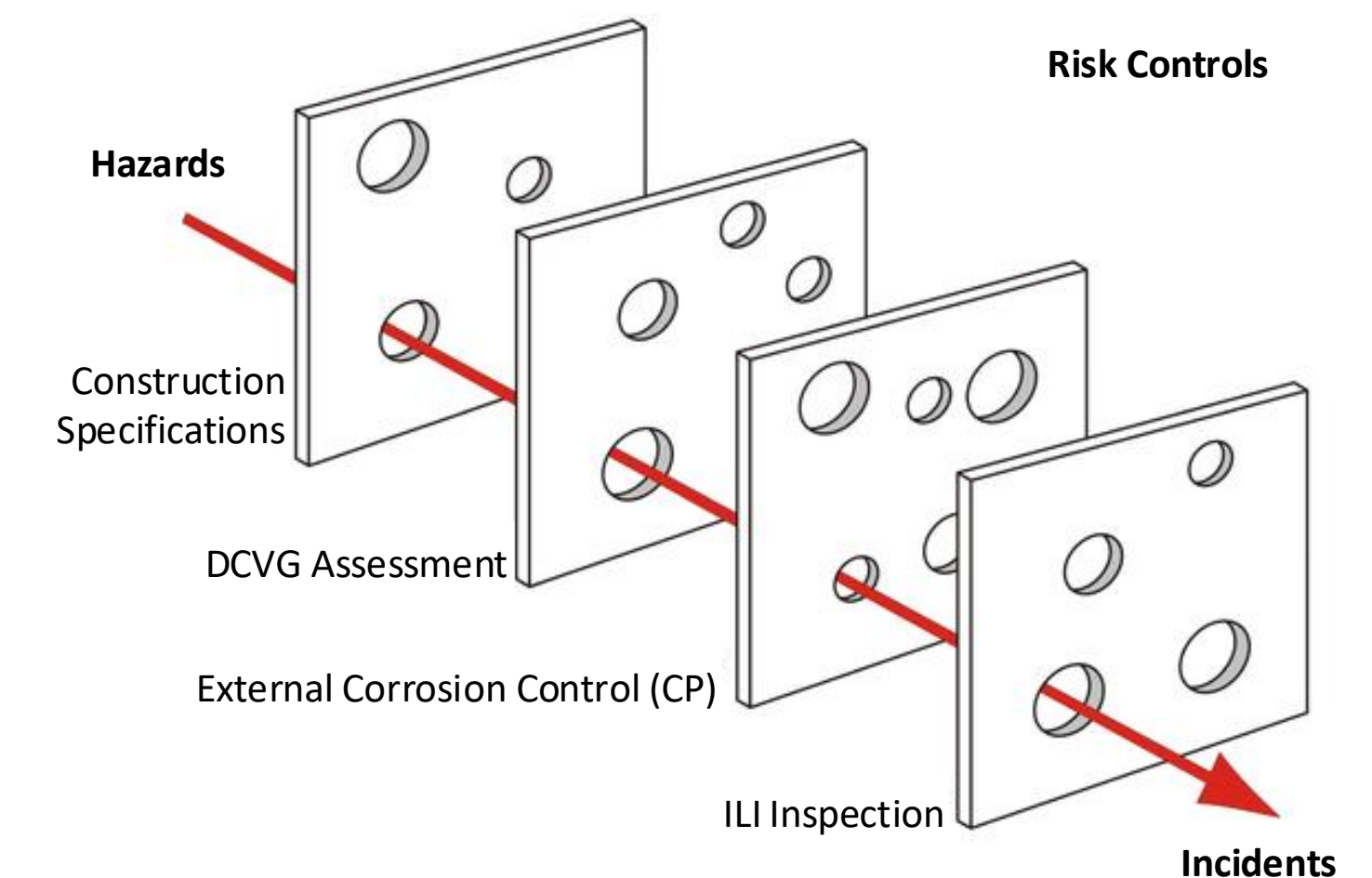
CHECK – Risk Review

- Periodic risk review for each Risk Area

- Cross-functional team of Operations and control owners

- Review
  - Performance metrics
  - Incidents, near misses, and hazard IDs related to controls
  - Feedback from field
  - Significant changes

ACT – Adjust Controls

- Adjust plan for Operational Risk Area or Risk Control depending on results of "Check"

- Risk Review recommendations provided to control owner for action – coordinate and communicate change

- Operational Risk Review Summaries provided to participants and stakeholders after each review; includes recommendations and status of previous entries

THANK YOU!

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