

Pipeline Risk Assessment



STEP

Identify the hazards, (i.e. anything that may cause harm).

- ✓ What type(s) of pipelines are in the jurisdiction?
- ✓ Where are they located?
- ✓ Do they cross or come proximate to critical infrastructure, e.g. schools, healthcare facilities, roads, bridges, railways, other pipelines, water/sewer lines, high voltage power lines, etc.?
- ✓ What type(s) of products do they carry?
- ✓ Fire/explosion/flash-fire radii from high pressure pipeline(s)?
- ✓ Flow dispersal models for liquid pipeline(s)?
- ✓ What are their operating pressure(s) and/or flow(s)?
- ✓ Who is/are the operator(s) of these lines?
- ✓ Do we have contact information for the operator(s)? Back-up contacts?
- ✓ Do/does the operator(s) know our response capabilities, resources, and/or limitations?
- ✓ What is our agency's training level(s) regarding pipeline emergency response?
- ✓ What is the agency's response resource capability?
 - > Apparatus
 - Engines
 - Tankers/Tenders
 - Rescue
 - Air support
 - Hazardous Materials Units
 - EMS
 - > Manpower
 - Daytime
 - Nighttime
 - > Equipment
 - Gas monitoring equipment
 - Self-Contained Breathing Apparatus
 - Spare SCBA cylinders
 - Portable pumps
 - Intrinsically-Safe Radios
 - Spare batteries
 - Shovels
 - Rakes
 - Foam
 - Confinement/diking/damming/spill control equipment
 - Other

- > Hazardous materials capability(ies)?
 - Awareness
 - Operations
 - Technician
 - Hazardous Materials Incident Command
- > Can we deal with a:
 - Small leak (low pressure)?
 - Without fire?
 - With fire(s)?
 - Large leak (high pressure)?
 - Without fire?
 - With fire?
 - Small spill (<55 gallons – ERG limit)?
 - Without fire?
 - With fire?
 - In a waterway?
 - Large spill (>55 gallons – ERG limits)?
 - Without fire?
 - With fire?
 - In a waterway?
- ✓ What are the capabilities of our mutual and/or automatic aid agencies?
- ✓ What are the potential threats and their likelihoods?
 - > Contractor damage – digging, construction, etc.
 - > Encroachment on right-of-way(s)
 - > Subsidence or ground movement
 - > Wildland fire damage
 - > Vandalism/malicious act(s)
 - > Terrorism



STEP 2

Identify who and/or what may be harmed and how.

- ✓ Do we have PHMSA defined, “HIGH CONSEQUENCE” areas?
- ✓ Are there residences or businesses proximate to the pipeline(s)?
- ✓ Is there a traffic diversion plan(s)?
- ✓ Is there a railway diversion plan(s)?
- ✓ Is there an airspace diversion/closure plan(s)?
- ✓ Consider the difference between daytime versus nighttime.
- ✓ Is there a chance of livestock or agricultural impact?
- ✓ What is the proximity to waterways?
- ✓ Consider other environmental considerations.



STEP 3

Assess the risk(s) and develop an action plan to reduce and/or minimize the risk(s).

- ✓ How do we rank our risk(s) based on a “FREQUENCY/IMPACT MODEL” of Low-to-High?

PIPELINE RISK Frequency/Impact Model	Low Impact	High Impact
Low Frequency		
High Frequency		

- ✓ What threat/risk is the most likely to impact our agency?
- ✓ What steps can we take to reduce the/those risk(s)?
 - > Agency education
 - Pipeline response training
 - Hazardous materials training
 - NIMS training
 - Tabletop drills
 - Other training
 - > Operator contact(s)
 - > Public education
 - > Contractor/excavator education
 - > Increased surveillance
- ✓ Ensure pipeline markers are in place and updated.
- ✓ What resources are needed to improve our agency’s response capability?
 - > What can we provide?
 - > What can the operator(s) provide?
 - Maps
 - Product specific resources
 - o Booms
 - o Pigs
 - o Pillows
 - o Other
 - o Monitoring/detection equipment
 - o Other



STEP

Keep a record of your risk assessment and chart the progress on risk reduction initiatives.

- ✓ Is the Assessment "GLOBAL", e.g. jurisdiction-wide – all lines, all operators, all incidents?
- ✓ Is the Assessment operator and/or pipeline-specific?
- ✓ Where do we keep the risk assessment?
 - > Paper format
 - > Electronic Format
 - > On Mobile Data Terminals
- ✓ Who gets a copy of the assessment?
 - > Dispatch Center(s)
 - > Law Enforcement
 - > Emergency Medical Services
 - > Local Hazardous Materials Team
 - > Local Emergency Planning Council (LEPC)
 - > County Emergency Management
 - > State Emergency Management
 - > Operator(s)



STEP

Review the risk assessment on a regular basis and update as necessary.

- ✓ Who is responsible for updating the Risk Assessment?
 - > Agency
 - > LEPC
 - > County Emergency Management
 - > Operator(s)
- ✓ How often will the Assessment be updated?
 - > Annually
 - > Bi-annually
 - > If Operator(s) change
 - > As needed
 - > Post-Incident
 - > Other