

# NGA Pre-Winter Briefing on System Reliability

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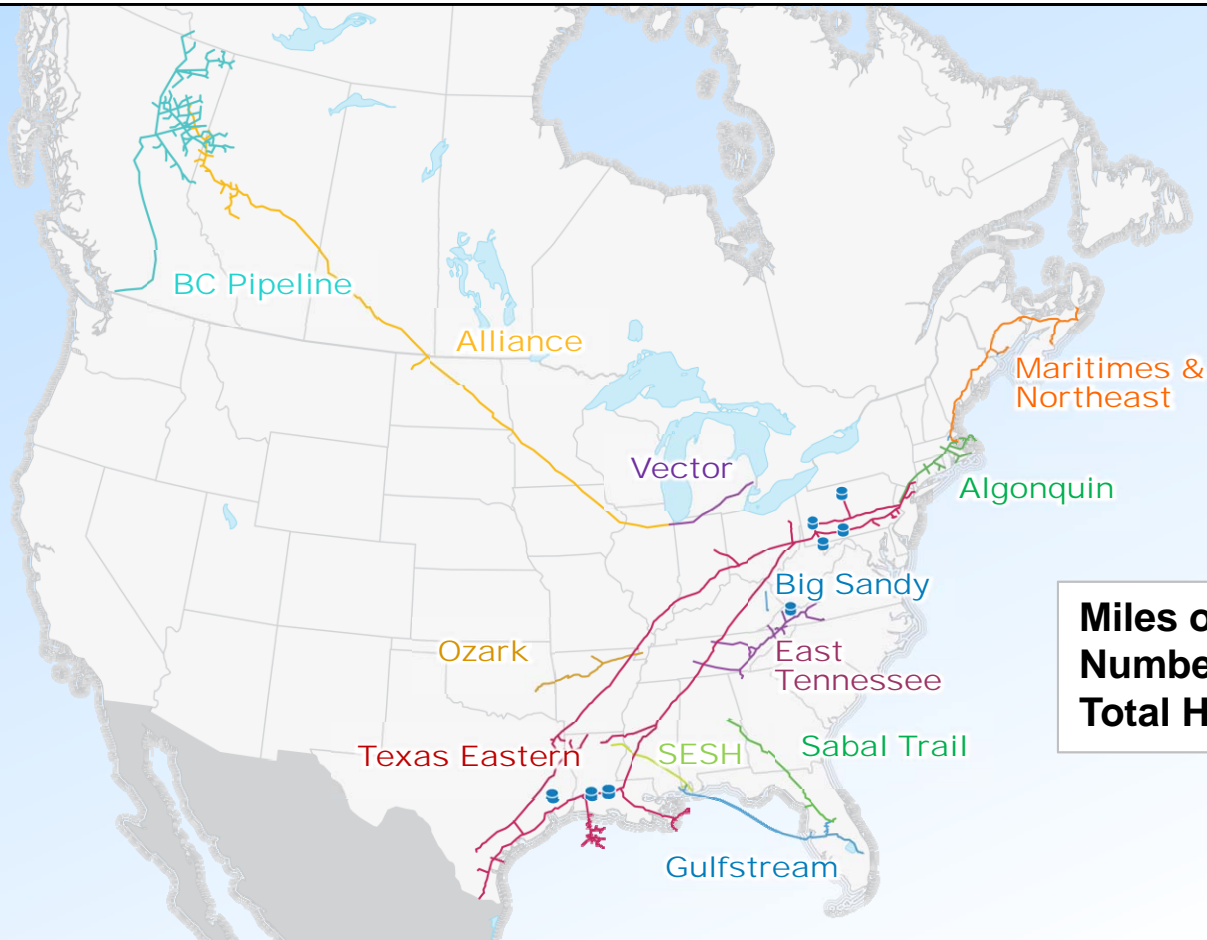
December 3, 2019

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U.S. Marketing



# Enbridge Gas Transmission System



<b>Miles of Pipe</b>	<b>18,939</b>
<b>Number of Compressor Stations</b>	<b>137</b>
<b>Total Horsepower</b>	<b>3,710,833</b>

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# Lincoln, Co KY Incident



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- On August 1, 2019, an incident occurred on Line 15, resulting in the death of one person and injuries to at least six others.
  - Most of Line 15 was constructed between 1952 and 1957 and is largely comprised of API X52 pipe manufactured by A. O. Smith.
  - Both lines 10 and 25 were temporarily shut down until the lines could be assessed for possibility of damage from the incident. Both lines have been returned to service.
  - Line 15 from Kosciusko, MS to Uniontown, PA has been isolated from the parallel pipelines and its pressure reduced by 20% per PHMSA's CAO.
  - The actual cause of the failure has not been determined. The NTSB is conducting a metallurgical investigation to determine the exact cause.
  - Efforts are underway to assess all segments of Line 15 that have pipe manufactured by A.O. Smith of similar vintage and type to the pipe involved in the failure.
  - The recent incident in Kentucky has given us cause to reevaluate additional threats associated with A.O. Smith pipe, specifically manufacturing defects including long seam weld fusion and hard spots.
  - The investigation has given us cause to revalidate the data provided in previous inspections and the confidence in conclusions regarding previous hard spot assessments.
  - Given that our confidence in these previous assessments is in question, we have taken voluntary pressure restrictions of approximately 10% from the last 60 day high on other parts of UST system that contain A.O. Smith-manufactured pipe of similar nature.

# Highest Risk Segment Remediation Overview



## GeoHazards

- 15 segments restricted
- Tool runs and high strain analysis completed
- All remediation work completed and full pressure restored early 2Q19

## Internal /External Corrosion

- 10 segments restricted
- 13 segments with internal corrosion & 12 with external corrosion
- All but 3 tools runs have been completed
- Remediation planned to be completed on all but those 3 lines prior to November

## Stress Corrosion Cracking

- 11 segments restricted by 10%
- All but 1 tool run complete
- Vendor reports take 4 months – receipt now thru late Oct
- Working to complete remediation by mid November
- 16 accelerated runs currently being scheduled before year end

## Selective Seam Weld Corrosion

- 10 segments restricted by 5% in May – Additional 16 segments identified and restricted in August based on field inspection results
- Tool runs for each above are required – scheduling in progress – goal is to have runs done prior to YE
- Remediation work is being prioritized - complete 4Q19-2Q20

## Corrective Action Order

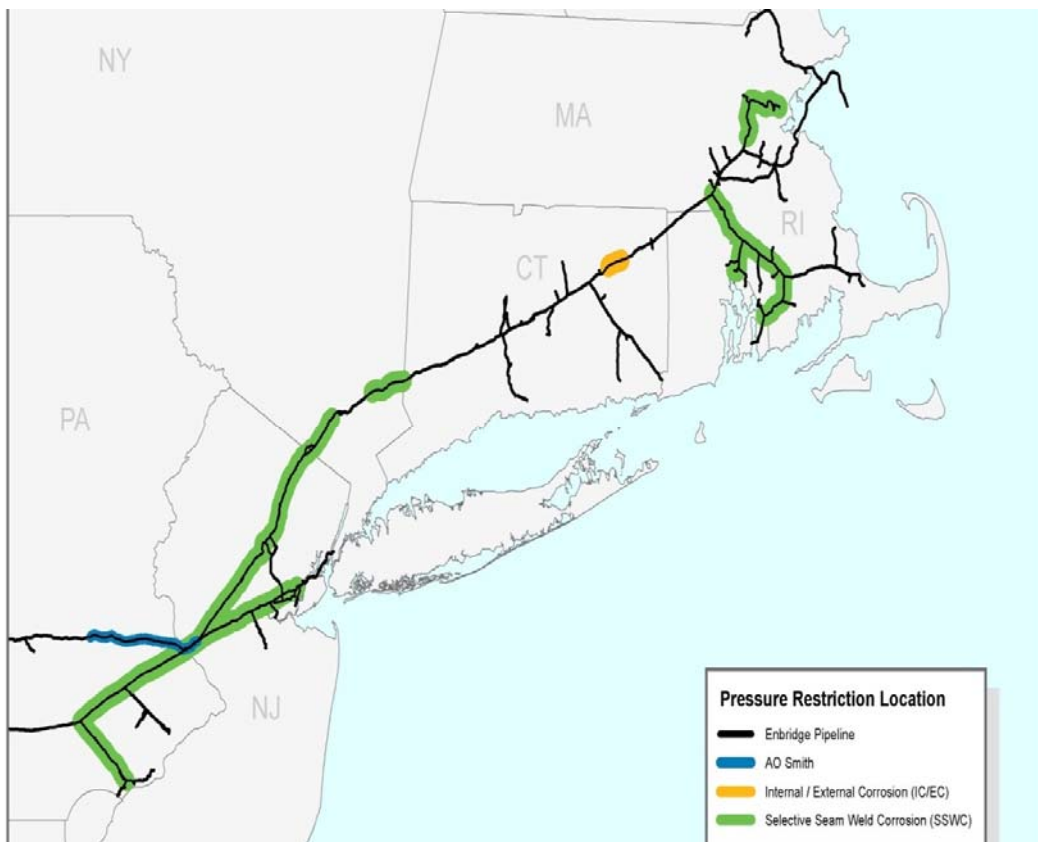
- 10 segments restricted by 20% per PHMSA – Line 15 Kosi-Uniontown in conjunction with KY incident
- Tool runs and additional tests/mitigation measures being planned
- PHMSA approval required to restore service
- Targeting 2Q20 for return to full service pending results of NTSB Investigation

## A.O. Smith Pipe

- 39 additional segments restricted by 10%
- Hard Spot Tool validation in progress
- Working aggressively to secure tools and schedule tool runs
- Sections will be returned to service as completed.
- Most remediation work planned to be complete 3Q20 pending results of NTSB investigation

# AGT

## Early Winter Pressure Restrictions



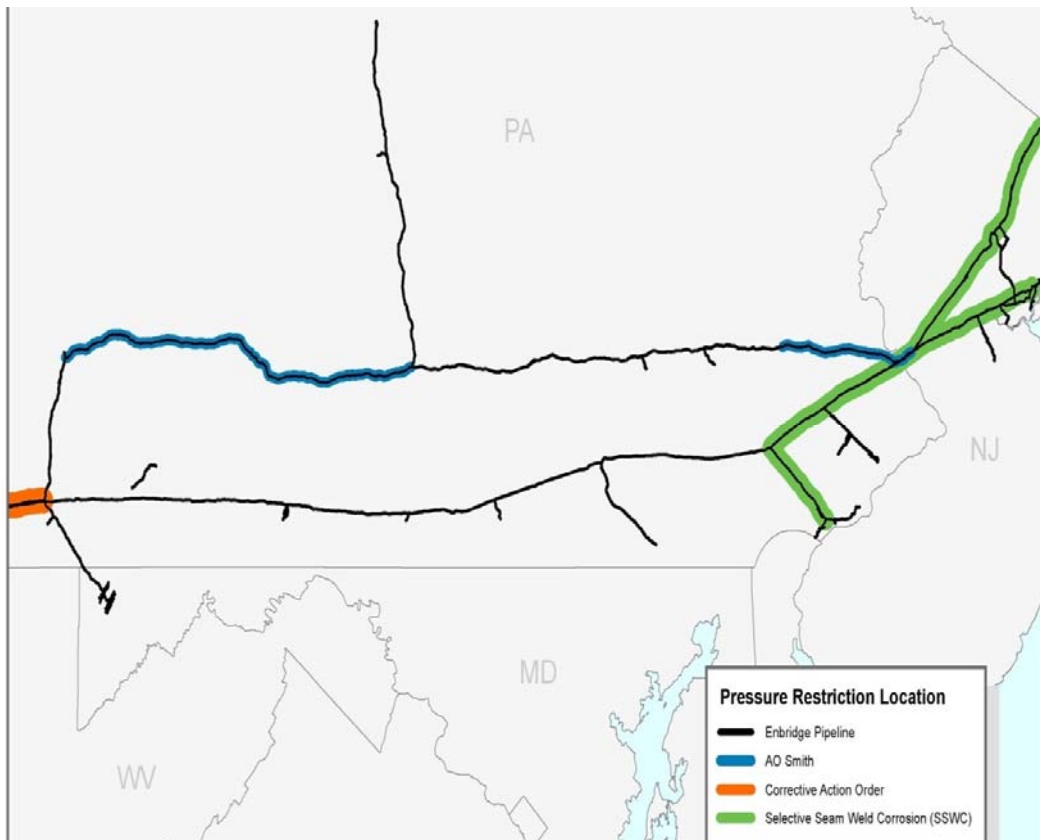
## AGT

### Proactive Pressure Restrictions:

- G-1 & G-5 System
- J-1 System
- 26" M/L Lambertville to Mahwah Mainline
- 26" M/L Stony Point to Southeast 26" M/L
- L36B Chaplin to Burrillville

# TETLP PJ

## Early Winter Pressure Restrictions



## Penn Jersey

### Proactive Pressure Restrictions:

- Line 12 Delmont to Perulack
- Line 19 Bechtelsville to Lambertville
- Line 1: Lambertville to Linden
- Line 1-D and Line 1-D-3: Downstream of Linden

### Remediate Plan Prior to Winter:

- Line 12: Perulack – Shermansdale
- Line 27: Shermansdale to Grantville
- Line 19: Grantville to Bernville
- Line 12: Bechtelsville to Lambertville

## CRP

- Line 1-A Eagle to Chester
- Line 1 Eagle to Lambertville

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## Enbridge Meetings with State Agencies

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- NY: October 31, 2019
- MA: October 31, 2019
- NJ: November 8, 2019
- PA: November 22, 2019
- CT: December 12, 2019

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## Summary of Our Approach



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- Ensure our assets are safe and reliable
  - Improve certainty through increased inspection and data
  - Ensure transparency in our plans and schedules
  - Leverage all technologies and prioritize our work to restore capacity as quickly as possible
  - Improve confidence with each iteration of inspection
    - Improve predictability and scheduling