Natural Gas Processing

From the Wellhead to the Burner Tip
Natural Gas Processing

- Gathering systems
- Compressor stations
- Gas processing plants
- Pump Stations
- Natural Gas Liquids Fractionation
- Storage
- Pipelines connect everything
Gathering Systems
Compressor stations

- Reciprocating internal combustion engines (RICE)
Gas Processing –
Lean Oil Absorption
Gas Processing –
Cryogenic Demethanization
Gas Processing Plants
Pump Stations

- Stationary gas turbines
Natural Gas Liquids Fractionation

Diagram showing the process flow for fractionating natural gas liquids. The diagram includes components such as feed surge, de-ethanizer, depropanizer, debutanizer, deisobutanizer, and various product streams including ethane, propane, n-butane, and i-butane.
Natural Gas Liquids Fractionation
Storage – Salt Dome Caverns
Systems connected by pipelines
Emission Points/Applicable Regulations

- Major Sources: Title V
- Flares: 60.18
- Steam Generating Units: Db
- Stationary Gas Turbines: GG and KKKK
- Storage Tanks: Kb
- Fugitives: KKK
- Acid Gas Treating: LLL
- RICE: 63-ZZZZ MACT
- TEG Dehydration: 63-HH Area Source
Compliance with *Recordkeeping* requirements

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Compliance with Reporting requirements
Title V Federal Operating Permit

- Semi-Annual Title V Deviation Report
  - Lists each instance that compliance with a permit requirement was not met

- Annual Title V Compliance Certification
  - Includes both semi-annual deviation reports
  - Lists compliance method of every Title V permit requirement
New Source Performance Standards

- Annual Air Emission Inventory
- Semi-Annual NSPS reports
  - Db Steam Generating Units
  - Kb Volatile Organic Liquid Storage Vessels
  - KKK Equipment Leaks of VOC From Onshore Natural Gas Processing Plants (Fugitive Monitoring)
  - GG Stationary Gas Turbines
  - KKKK Stationary Combustion Turbines
- Semi-Annual Part 63 NESHAPS Air Reports
  - HH Oil and Natural Gas Production Facilities (for major sources of air toxics and TEG dehydration for area sources)
  - ZZZZ Stationary Reciprocating Internal Combustion Engines
Water, Waste and Misc. Reports

- Annual Hazardous Waste Report
- Annual Industrial Waste Report
- Annual Chemical Inventory report (Tier II)
- Monthly, Quarterly or Annual Discharge Monitoring Reports (DMR water reports)
- Inventory Update (Form U) report
- Written Follow-up from spills or releases
- Notifications required by permits
- Responses to Notices of Violation (NOVs), Enforcement (NOEs) and Potential Penalties (NOPP)
Waste Generation - RCRA

- Most sites are Small Quantity or Conditionally Exempt Small Quantity Generators
- Fractionators with gasoline treaters generate waste caustic and are typically Large Quantity Generators
Emergency Response

- Third party damage – “Uh, I thought it was a root!”
Beth Hebert, PE

- Director, Field Environmental Compliance
- EPCO, Inc. providing services to
  - Enterprise Products Operating LLC
  - TEPPCO LLC
  - Enterprise GP Holdings LLC
  - Dixie Pipeline LLC
  - Duncan Energy Partners LLC
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Questions?