Over and Short: Key Issues and Implications for Carriers

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Purpose of the Presentation

What will we talk about today:

- The sources of over and short
- The process of settling over and short
- Significant accounting and legal Issues
- Pertinent FERC orders





Nature and Sources of Overs and Shorts: Overview

- As is (hopefully) well known to everyone at this conference, pipelines do not transport oil in self-contained packages.
- In reality, customers tender liquids to pipelines (or terminals) and receive back a *similar* quantity and type of liquids but not the exact same quantity, because of the operational realities of liquids transportation.
- The difference between pipeline tenders and deliveries over and short, broadly speaking – has important consequences for shippers and pipelines.
- While overs and shorts do occur at terminals, this course will focus on pipeline issues.
- We are not addressing losses in pipeline incidents spills, etc. -- which are a different topic.





Nature and Sources of Overs and Shorts: Overview

• Types and sources of overs and shorts

- Losses
 - Physical
 - Measurement related
 - Ticketing errors
- Compatible product interfaces resulting in quality changes, causing higher or lower deliveries for different shippers
- Incompatible product interfaces resulting in transmix, lowering deliveries to all shippers





Nature and Sources of Overs and Shorts: Overview

- Typically a shipper will receive back from the pipeline a slightly different amount then it tendered.
- For example,
 - Shipper A and B both tender .1% more than they receive back from the pipeline due to losses common to all shippers. [Not to complicate it too much, but all shippers receive back less due to losses, and the scenario noted here is on top of that phenomenon. Perhaps we should note and distinguish between oil losses and degradation/enhancement at the outset]
 - In addition, if Shipper A tendered 25,000 bbls of 87 octane gasoline (net of loss) it may receive back 25,017 bbls of 87.1 octane gasoline.
 - If Shipper B tendered 25,000 bbls of 91.1 octane gasoline (net of loss) it may receive back 24,983 bbls of 91 octane gasoline. In this greatly simplified example Shipper A was slightly over from both a quantity and a quality perspective.
- By contrast, Shipper B was slightly shorted from both a quantity and a quality perspective.





- Losses
 - Pipelines typically experience losses in the aggregate, affecting all shippers.
 - For example,
 - Shippers the aggregate tender 1 million barrels to the pipeline in cycle 1.
 - At the end of cycle 1, the pipeline only delivers 999,000.
 - As such 1,000 barrels have been lost.
 - Physically, these type of losses are most commonly caused by evaporation.
 - Typically, evaporative loss is more significant on pipelines transporting volatile hydrocarbons (*e.g.* condensate) and is less of an issue on a pipeline transporting heavy crude oil.
 - Losses can also occur due to expansion or contraction of the product *en route*, usually to a minor extent.
 - Pipelines employ different techniques to address this possibility that we will discuss in the next section.
 - · Losses also arise from disagreements between meters affects shippers generally
 - Pipelines address this with meter calibration and testing, but it is difficult to eliminate.
 - Losses also arise from ticketing problems





• In a batched pipeline, the batching process may create gains and losses of both quantity and quality.







- Compatible product interfaces resulting in quality changes
 - For example, if a pipeline is moving both 87 octane gasoline and 91 octane gasoline (as in the example previously) the pipeline would likely make a "hard cut" once the product reaches the minimum specification for 91 octane gasoline to preserve the quality of the 91 octane gasoline.
 - In this case, the quantity of 91 octane will be slightly reduced because a portion of the 91 octane gasoline, originally tendered to the pipeline mixed with the 87 octane gasoline and was cut into the 87 octane batch.
 - In the case of hard cuts some shippers (in this case 87 octane shippers) will gain product while other shippers will lose product.
 - Similar quality-cut generated losses and gains occur in crude pipelines batching differing grades, such as heavy and light.





- Incompatible product interfaces resulting in transmix
 - If pipelines are batching incompatible products (*e.g.,* gasoline and distillate) an interface called transmix will be created that requires further processing to be merchantable.
 - For example, if Shipper A tenders 25,000 bbls of 87 Octane gasoline and Shipper B tenders 25,000 bbls of No. 2 Fuel Oil, the pipeline may return 24,950 bbls of 87 Octane, 24,950 of No. 2 Fuel Oil and 100 bbls of transmix.
 - Transmix must be placed into a segregated tank, transported to a facility where it is reprocesed before it can be used for some economically productive purpose.
 - Alternatively, transmix may be sold at a substantial discount (typically to a re-processor) relative to the finished products which created it.





- Transmix created from different products may also have different values.
- For example, pipelines typically buffer Jet Fuel with No. 2 Fuel oil to preserve the quality.
 - However, Jet Fuel continues to have substantial amounts of sulfur whereas most No. 2 Fuel is ultra-low sulfur diesel or ULSD.
 - Consequently, transmix created by jet fuel may be more costly to reprocess compared to transmix created by No. 2 fuel oil.
- Pipelines employ a variety of methods to address the costs associated with transmix and the Commission.
- Different methods have been approved and are appropriate as long as they are "just and reasonable" and applied in an equitable manner. (These are discussed later in the presentation).





- Factors affecting losses and transmix
 - Certain operational practices may increase either losses or transmix.
 - For example, transporting highly volatile hydrocarbons may increase evaporative loss.
 - For this reason, some pipelines will impose additional fees (or additional loss allowance) on which product.
 - Transporting numerous small batches of dissimilar product will increase the frequency of transmix.
 - Largely for this reason, most pipelines impose a minimum batch size.
 - In fact, many operational requirements contained in a tariff are justified by the valid desire of pipelines and their shippers to minimize shorts and/or transmix.





- Measurement and Ticketing Errors
 - Overs and shorts also occur because of "measurement error."
 - As with any process, some degree of error is inevitable.
 - Rules and Regulations tariffs typically provide for allowable error, often with reference to some standard.
- Beyond measurement error, pipelines occasionally experience metering disagreements, which creates an apparent over or short.
- Finally, ticketing problems (*e.g.* unrecorded tickets, duplicated tickets or out of period errors) may create an apparent over or short.
- Pipelines should describe either in their tariff or in a publicly available shipper manual referenced in the tariff the process to address either measurement or ticketing error.





- Pipelines employ (and the Commission has approved) a variety of methods and techniques to address these various types of overs and shorts, including oil loss.
- No one methodology is the only appropriate approach.
- As with many aspects of pipeline regulation, the appropriateness of a methodology will be fact specific.
- Some general principles should guide the assessment of a methodology:
 - The cost to shippers associated with a methodology should roughly match the causation
 - The methodology must be applied in an equitable and not unduly-discriminatory manner
 - The methodology should provide incentives for parties to behave in an efficient manner.





- Allocation among all shippers
- Perhaps the simplest settlement process involves allocation of all losses amongst shippers.
- For example,
 - Imagine that in aggregate 20 shippers tender 25,000 bbls of gasoline and 25,000 bbls of distillate for a total 1 million barrels of gasoline, and 1 million barrels of distillate in cycle 1.
 - At the end of the cycle the pipeline has 998,000 bbls of gasoline, 998,000 barrels of distillate and 1,000 bbls of transmix.
 - In this example, 1000 bbls have been lost, and 1000 bbls of transmix have been created
 - Under an allocative loss approach the pipeline would return to each shipper 24,900 of gasoline, 24,900 of distillate and 50 barrels of transmix for which the shipper would be responsible for reprocessing or other disposal.
- This approach treats shippers equitably: the 1000 bbls of loss was shared equally amongst the shippers (each was "shorted" 1000/20=50 bbls) and the 1000 bbls of transmix was shared equally.
- This approach might be reflected in a uniform loss deduction from tenders, as well as a uniform charge for transmix costs.





• Flat fee per barrel example

"Item No. 79. TRANSMIX CHARGES

In addition to the charges for transportation and for other services provided herein, a charge of [I] four and forty-five (4.45) cents per barrel will be made for all petroleum products tendered for the transportation and processing cost of transmix created during the operation of the pipeline."

• Example of a more complex product loss/over-short settlement provision incorporating various factors (next slide)





• Illustrative transmix adjustment provision

"Item 115 Product Interface (Transmix) Adjustment

Transmix is created at the interface of dissimilar products during shipment within Carrier's pipeline system. In most instances, the total inventory of transmix shall be held in Carrier's custody for disposal for the account of the Shippers. The allocation of transmix shall be determined by discrete pipeline segment, as stated by the Carrier in the Sunoco Pipeline L.P. Accounting Policies and Procedures effective July 3, 2024. The Sunoco Pipeline L.P. Accounting Policies and Procedures effective July 3, 2024 will be provided upon request by the person listed as "Compiler" on the title page of this tariff or online at www.energytransfer.com/tariffs and may be updated at any time to comply with applicable law or as may be necessary to comply with upstream or downstream connecting carrier requirements or its own operational requirements.

Generally, for pipeline segments carrying fungible batches from multiple Shippers to multiple destinations, the allocation to each Shipper shall be proportionate to the total volume shipped by a Shipper on that pipeline segment to the total barrels shipped that month on that pipeline segment. For pipeline segments for which the generation of the transmix can be readily attributed to specific batches from a Shipper, or which can be readily attributable to discrete actions taken by a Shipper, the Carrier will allocate the transmix generated by those discrete actions directly to that Shipper

[continued on next slide]





"After the transmix has been allocated to each Shipper, the transmix will be sold on a bid or contractual basis by the Carrier for the account of Shippers, with each Shipper being credited with the sale proceeds corresponding to the transmix settlement price for the relevant pipeline segment(s).

For those pipeline segments where transmix is being physically allocated to the Shippers, the Shippers retain all responsibility for the handling and disposal of their transmix.

Financial settlement with the Shippers of pipeline gains/losses shall be determined only after the allocation of transmix has been completed. More information on the Transmix Allocation for specific pipeline segments will be provided upon request by the person listed as 'compiler' on the title page of this tariff."

 Details – which are extensive – are in the referenced accounting document on the pipeline's website: https://commoncarrier.energytransfer.com/InfoPost/CommonCarriers/resources/SPLPNR/PostedDocuments/SPLP_Ac counting_Policies_Procedures_eff_7.3.24.pdf





- A potential criticism of this approach is that it gives the pipeline no incentive to minimize losses, although we are unaware of the FERC ever rejecting an allocative settlement process for this reason.
- An allocative settlement process may also be more problematic if the pipeline moves product of different values.
- In this example, imagine:
 - The pipeline moves crude from two fields: Field A Crude has an API Gravity of 40 while Field B Crude has an API Gravity of 30.
 - Imagine two Field A shippers tender 1 million barrels of crude and Field B shippers tender 1 million barrels of crude.
 - At the end of the cycle imagine the pipeline has 1,999,000 bbls of crude with an API gravity of 35, such that Field A shippers receive 999,500 bbls of API 35 grade crude and Field B shippers receive 999,950 bbls of API 35 grade crude.
- The physical loss of crude has been addressed equitably, but the Field A shippers may have a valid argument, presuming that higher gravity crude is more valuable, that they have been treated inequitably by having their crude mixed with the lower value crude from Field B.
- To address this issue, pipelines sometimes impose a "quality bank" where shippers of lower value oil compensate shippers of higher value oil.





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 - Imagine two Field A shippers tender 1 million barrels of crude and Field B shippers tender 1 million barrels of crude.
 - At the end of the cycle imagine the pipeline has 1,999,000 bbls of crude with an API gravity of 35, such that Field A shippers receive 999,500 bbls of API 35 grade crude and Field B shippers receive 999,950 bbls of API 35 grade crude.
- The physical loss of crude has been addressed equitably, but the Field A shippers may have a valid argument, presuming that higher gravity crude is more valuable, that they have been treated inequitably by having their crude mixed with the lower value crude from Field B.
- To address this issue, pipelines sometimes impose a "quality bank" (or gravity bank, etc.) where shippers of lower value oil compensate shippers of higher value oil.





- The complexity of assessing different products will be fact specific.
 - For example, some refined product pipeline maintains a quality bank (*e.g.* shippers of higher octane gasoline are compensated for product downgrades).
- If a robust market exists (*e.g.,* NYMEX pricing) the structure of the quality bank is less likely to be subject to controversy.
- By contrast, the lack of a robust market may cause quality banks to generate significant controversy.
- Typically, the pipeline is an "administrator" of a quality bank and the main participants in the controversy are shippers.
- Having well defined procedures reduces the risk the pipeline will be caught in the crossfire.





- Some pipelines charge a specific fee to cover the costs associated with losses.
- Typically, under such arrangements the fee is stated in the tariff and shippers are "made whole."
 - Making shippers whole may involve providing the shippers with the exact same quantity and quality of oil the tendered (*e.g.* the pipeline purchases oil on the market to cover losses and downgrades).
 - Making shippers whole may involve compensating shippers in dollars for any losses.
- Typically, monetary compensation is based on a defined formula.
- The fee as well as the sale of transmix will cover the costs of such compensation.





- Occasionally the shippers will challenge the validity of the fee.
- As with any component of the rate, the pipeline should be able to justify the fee using standard FERC rating-setting methodologies (*e.g.* basing the fee on cost or a settlement with shippers).
- Quality/gravity banks are typically in tariffs, settlement processes typically on websites/shipper manuals.
- The revenue associated with such fees can raise important accounting and ratemaking issues.





A simplified example of a Shipper Balance Statement for the Month of April is shown below. This statement is for the commodity Western Canadian Select ("WCS"), sourced from Canada, and shipped by ABC Corporation.

The first half of the statement derives ABC's closing Book Inventory. It begins with an opening inventory position of 200,000 Barrels carried forward from March's closing Book Inventory. ABC Tenders 200,000 Barrels of WCS to Carrier, and transfers 10,000 Barrels in from XYZ Corporation. ABC Delivers 160,000 Barrels off the system. Carrier deducts 200 Barrels for Loss Allowance. ABC's closing Book Inventory is the sum total of its opening inventory position, Tender, and transfer, less ABC's volumes Delivered and Loss Allowance. ABC's closing Book Inventory Book Inventory for April is 249,800 Barrels.





The latter half statement derives ABC's Settlement Volume and Net Settlement Value. ABC has 80,000 Barrels of Working Stock, determined by January and February actual receipt volumes and March Nominations by ABC of WCS as a proportion of total WCS receipt volumes and Nominations over the same period. ABC has 180,000 Barrels of WCS in transit as identified on the Delivery schedule. ABC's total Physical Inventory is 260,000 Barrels.

ABC's Physical Inventory is greater than its Book Inventory, and a Settlement Volume of 10,200 Barrels exists. A financial transaction is required to balance this Book to Physical Inventory discrepancy. The average NGX price of WCS in April is \$50/Barrel. The Net Settlement Value is therefore \$510,000, payable to Carrier.

The Settlement Volume in April of 10,200 Barrels will be recorded on the May Shipper Balance Statement as an Inventory Settlement Adjustment.





• Oil Losses

- Many pipelines address physical and measurement-related losses by deducting a Product Loss Allowance or PLA -- commonly 0.1% of tendered volumes.
 - Pipeline tariffs may also provide for deduction of actual losses that figure being variable, or described in the website/shipper manual.
- Typically the PLA is noted in the tariff.
- For example if a shipper tendered 10,000 bbls of oil to a pipeline whose tariff contained such a provision the pipeline would only have an obligation to return 9,990 barrels of oil.
- The 10 barrels to which the pipeline is entitled retain are intended to cover evaporative losses and/or the cost associated with downgrades.
 - For example, if the pipeline only lost 2 actual barrels it might sell the other 8 and use the proceeds to compensate shippers whose product is downgraded.
- Shippers often advocate subtracting PLA revenue cost-of-service in cost-based rate cases.





- With regard to overs and shorts resulting from measurement issues (*e.g.* metering discrepancies or sample discrepancies) tariffs should contain either a provision describing how such discrepancies should be resolved.
- In many cases, such descriptions would be too detailed or complex to reasonably place in a tariff.
- In such cases, the pipeline may have a shipper manual referenced in the tariff.
- See for example, https://www.williams.com/wp-content/uploads/sites/6/2020/10/Bluestem-Tariff-Measurement-Procedures-10-01-20.pdf





Significant Accounting and Legal Issues: Balance Sheet Accounting

• Account 16 Oil Inventory

Includes the cost of oil purchased and the value of oil acquired through tariff allowances and operating gains.

• Account 33 Operating Oil Supply

Includes oil purchased and the value of oil added through tariff allowances and operating gains which is used to maintain lines and tanks in working condition.





Significant Accounting and Legal Issues: Income Statement Accounting

- Operating Revenue: Account 230 Allowance Oil Revenue Incudes the current value of oil acquired through tariff allowances and the selling price of such oil not previously recorded in inventory or operating oil supply.
 - Typically chiefly includes the net revenue difference between actual losses and the loss deduction stated in the tariff.
- Operating Expense: Account 340 Oil Losses and Shortages
 Includes the cost of settlements with shippers for oil lost or undelivered due to
 operating causes and the value of oil gains from operations which are charges to
 oil inventory or operating oil supply.





Significant Accounting and Legal Issues: Other Accounting Considerations

- Account 340 Oil Losses and Shortages is an expense account but both costs and gains can be booked to it therefor this account may regularly appear either positive or negative on Form 6 Page 302.
- Order No. 783-A, 148 FERC ¶ 61,235 at P 26 (2014) made clear that the Commission expects the jurisdictional portion ofr-all revenues, including PLA recorded to Account 230 Allowance Oil Revenue, should be included on Page 700 Line 10 Total Interstate Revenues.
- LEPA Accounting Guideline 3-08 adds further clarification on how to record, measure, and adjust oil inventory and operating oil supply.





Significant Accounting and Legal Issues: Audit Findings

- Finding 1 Sunoco (Dkt. No. PA21-4), Enterprise (Dkt. No. FA20-5), Centurion (Dkt. No. FA19-4), and Bridger (Dkt. No. 19-10)
 - Incorrectly omitted PLA and GSD revenue recorded to Account 230 Allowance Oil Revenues from Page 700 Line 10 Interstate Operating Revenues.
- Finding 2 Centurion and Bridger
 - Incorrectly recorded oil losses as an offset to revenue in Account 230 Allowance Oil Revenues rather than as an expense to Account 340 Oil Losses and Shortages.
- Finding 3 Bridger
 - Did not track the costs or keep records to identify the amount of oil lost in transportation.





Significant Accounting and Legal Issues: Tariff vs. Website/Portal Issues

- Shippers must have notice of all charges, fees, etc.
- Posting information (*e.g.* the PLA) in the tariff is the most straightforward, and likely defensible approach.
 - Any change to the PLA must be supported by loss/cost data.
 - Pipelines with tariffs referencing non-quantified "actual" losses as the PLA must have supporting data for the deductions.
- Many pipelines do describe the process in depth in another document (*e.g.* a shipper manual) and incorporate this document bye-reference in the tariff.
- This approach is acceptable as long is the reference is unambiguous.
- The FERC has raised questions when the reference is not clear.
 - Loss and settlement procedures found in the website/shipper manual may be more readily challenged.





Significant Accounting and Legal Issues: Potential Liabilities

- As discussed below, FERC audit staff has raised issues related to the treatment of over and short revenue in some cases.
- Changing the settlement formula or the treatment of loss allowances has generated litigation in the past (discussed further below)
 - Buckeye Pipe Line Company, L.P., Dkt. No. IS16-3-000
 - Colonial Pipeline Company, Dkt. No. OR19-1-000, et al.
- Some shippers have also argued in past cases that PLA revenue should be subtracted from transportation revenue.
- The FERC has yet to address this issue directly, although they did require Colonial to recalculate its PLA.





- Buckeye Pipe Line Company, L.P., Dkt. No. IS16-3
 - Buckeye made shippers whole (*e.g.*, the pipeline disposed of transmix and compensated shippers harmed by hard cuts) and charged a fee to cover the cost of this service.
 - In 2015, it raised the fee for this service from 5.5 cents/bbl to 8.7 cents/bbl because various costs, including reprocessing transmix, had increased.
 - A group of shippers protested.
 - The Commission set the case for hearing.
 - The case settled with the pipeline agreeing to:
 - Make a settlement payment to defined parties
 - Reduce the PLA to 8.2 cents/bbl.
 - Provide summary cost and revenue data during the term of the settlement (2018)





- Colonial Pipeline Company, Dkt. No. OR18-7 et al.
 - Complaint
 - Challenged loss and transmix cost treatment -- referenced as the pipeline's "product loss adjustment" or "PLA."
 - Op. No. 585, 185 F.E.R.C. P61,125 (2023) (as to PLA) overview:
 - Found the PLA charge jurisdictional and that charging a PLA was supported by the tariff.
 - Found the calculation of the PLA and its assessment unsupported and unreasonable
 - Required that Colonial calculate and file a cents per barrel PLA charge.
 - Required that Colonial include a tracker and true-up mechanism rather than a fixed percentage.
 - · Approved of Colonial's treatment of intrastate losses under intrastate tariffs
 - Found reparations unwarranted.





• Op. No. 585 (continued)

Jurisdictional conclusion

 Found that product loss and degradation were an "ordinary consequence" ofj jurisdictional service that results in costs to the pipeline and thus charges to shippers – hence the PLA was subject to ICA jurisdiction.

Tariff authorized a PLA charge

- The Initial Decision had found that the tariff did not authorize a PLA charge because the exact charge was not stated.
- The Commission reversed, finding that the specifically authorized a PLA, required tracking and true-ups of over- and under-recoveries, and ensured recovery of PLA costs only, despite not having a specific charge.





• Op. No. 585 (continued)

Current methodology unreasonable

- Found that the PLA mechanism was unjust and unreasonable because it:
 - Gave the pipeline sole discretion as to nature and timing of PLA adjustments
 - No pattern (quarterly, annually) and varied timing of changes could create intergenerational inequity
 - Allowed management of the PLA account without sufficient transparency as to shippers or to the Commission
 - The model for PLA changes was not on the record, was a "black box" and did not permit the ability to assess changes by shippers or the Commission
 - Assigned different PLA charges to long- and short-haul shipments without adequate justification (no studies on the recored)
 - The pipeline's 2015 audit did not implicitly or explicitly approve the PLA





• Op. No. 585 (continued)

Per-barrel charge plus tracker with annual true-ups

- Found that a per-barrel charge, based on either historical data or projections, with a tracker and annual true-up would be just and reasonable
 - FERC's required method is a refinement of the pipeline's pre-existing mechanism
 - Rejected a shipper proposal, that had been adopted by the Initial Decision, to require use of a fixed percentage-of-value charge based on the commodity value of tendered products, without a tracker
 - Found that PLA costs are volatile and difficult to project
 - Rejected the claim that a tracker would reduce pipeline incentives to manage/reduce losses/transmix
 - Emphasized that "a variety of PLA mechanisms may be just and reasonable in the context of refined products pipelines," basing the ruling on the record





• Op. No. 585 (continued)

Reversed Initial Decision as to the need to charge PLA on intrastate volumes

- Intrastate volumes were subject to state agency tariffs
- Separate intrastate PLA charges; pipeline tracked intrastate losses and costs
- Intrastate shippers provide their own linefill
- No evidence of cost shifting from intrastate to interstate shippers





Found reparations unwarranted

- Reversed Initial Decision, which ruled for two years of reparations based on its method
- Key issue was that the pipeline already operated its PLA assessment as a tracker, and thus the pipeline did not recover more than its costs as required by its tariff
- PLA accounts were under- or -overfunded at times, but over time worked to zero
- Reparations based on periodic over-recoveries would ignore periods of underrecoveries, in a tracker context
- Rejected reparations award based on the PLA charges not being specified in the tariff
 - Tariff authorized a PLA charge, and the pipeline provided services and did not over-recovery PLA costs, hence there were no damages to shippers

Order No. 585 is subject to rehearing and a petition for review, and Colonial's compliance filing was protested



