

Transmission Losses #9

Step 1: Introduction and Education

Step 2: Description of the Issue

**Step 3: Data and/or Analysis that
Supports the Issue**

Agenda

- Introduction and education (Step 1)
- Description of the issue (Step 2)
- Data and/or analysis that supports the issue (Step 3)
 - Value
 - Actual vs Expected Returns
 - Administrative Burden

Objective

- Update the BPA process for the provision and settling of losses which captures the value of capacity and energy used to provide losses and minimizes load uncertainty, the administrative burden of system administration, maintenance, and reconciliation of deviations

Current Loss Energy Return Options

BPA provides customers with three methods for returning their loss energy obligations to BPA:

- In-Kind (168 Hours later) – 88.77%
- Financial Settlement – 0.82%
- Slice – 10.41%

*Percentage breakdown of MW Obligations year to date 2019.

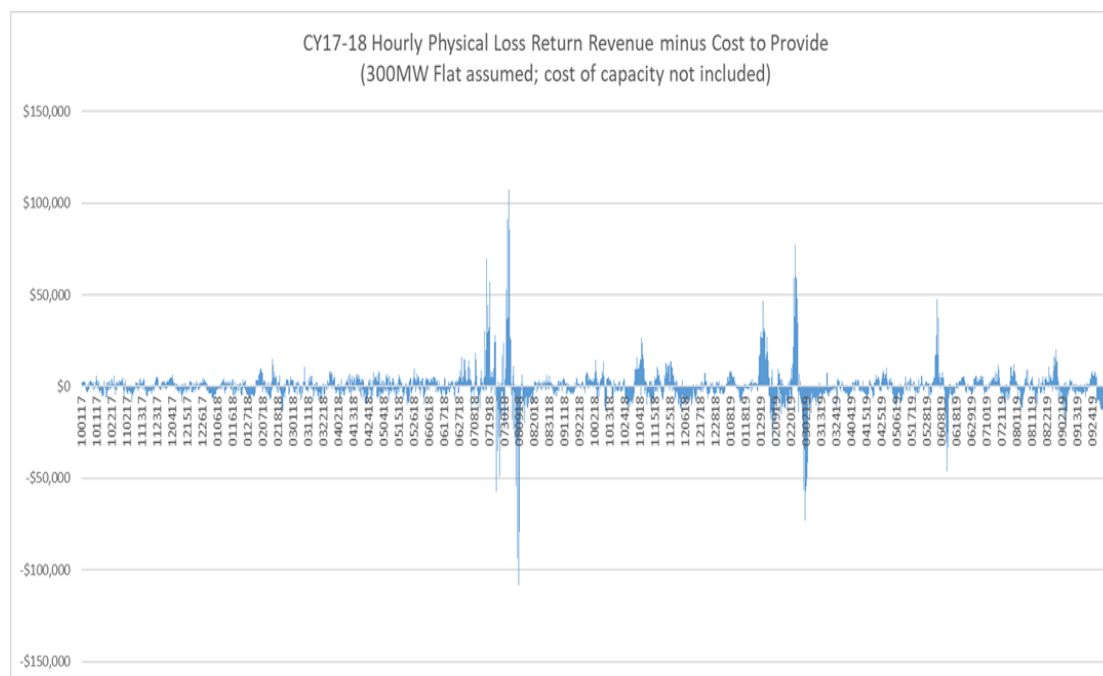
In-Kind Challenges

In-Kind is the most challenging option due to:

- **Value:** In-kind replacement of losses results in mismatches in value between the time the losses occur and the time the energy is returned 168 hours later.
- **Actual vs. expected returns:** BPA receives losses from the parties where parties do not schedule the entire loss obligation or schedule the incorrect amounts of losses
- **Administrative Burden:** Current process requires significant FTE time to manage routine daily processes and system maintenance. Losses app requires a monthly maintenance fee.

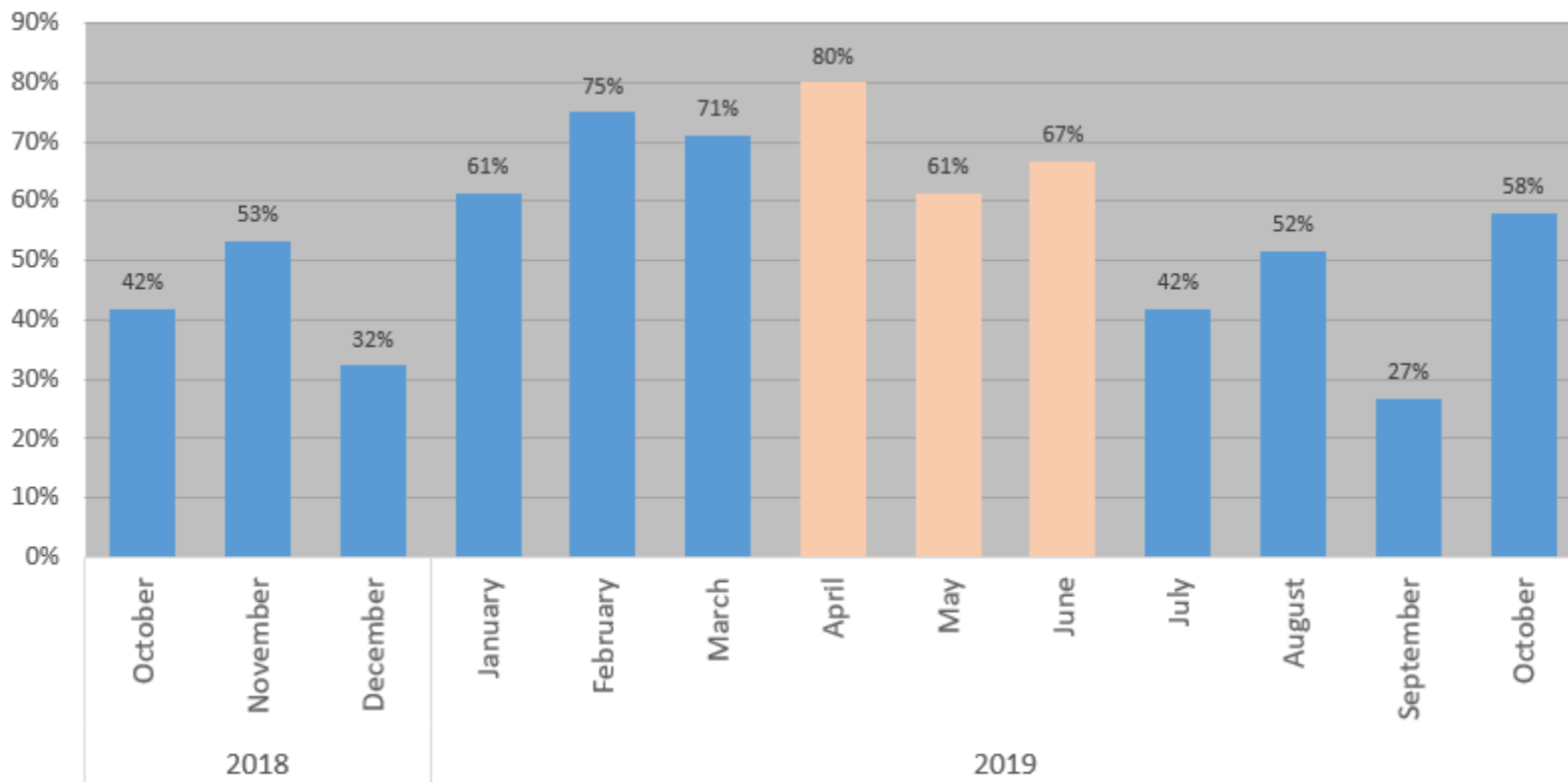
Value: Physical Loss Returns Compensation

- Returning physical losses at t+168 hours results in roughly neutral energy-related revenue for the loss provider
 - Assuming flat MW quantities
 - Energy values fluctuate but generally equalize over time
- The loss provider (Power Services) is not compensated for holding out capacity necessary to provide losses.



Actual vs Expected Returns

Percent of Days with Deviation



April, May, June monthly totals including losses waived by Power Services during over supply season.

Actual vs Expected Returns

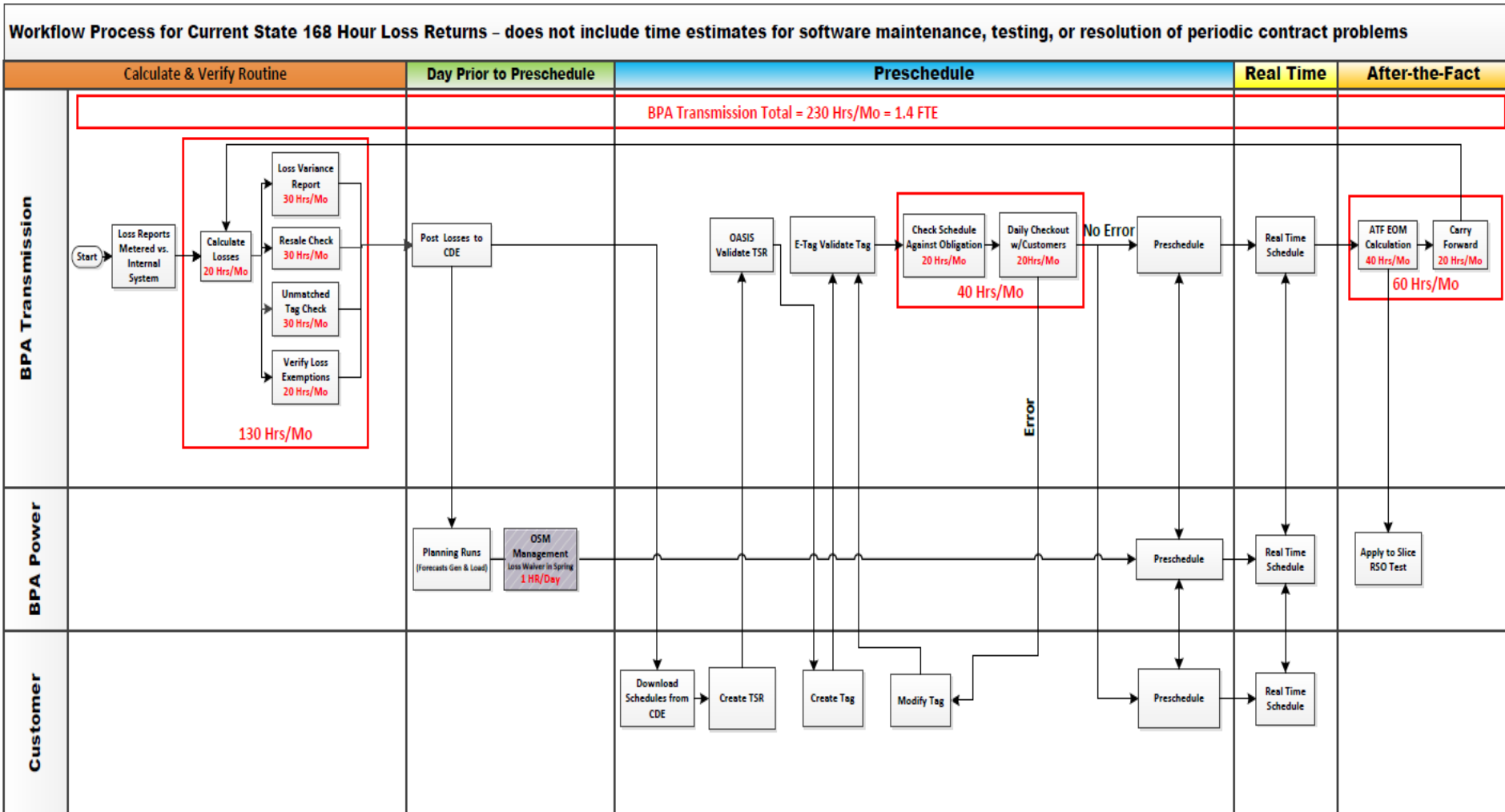
Year:	Month:	Total Obligation MWh	Return Total MWh	MWh Difference	Days Reviewed	Days With Difference	Percent of Days with Deviation
2018	October	200,010	199,770	240	31	13	42%
	November	187,305	186,896	409	30	16	53%
	December	218,803	218,869	-66	31	10	32%
2019	January	246,744	246,674	70	31	19	61%
	February	194,324	194,132	192	28	21	75%
	March	213,126	213,028	98	31	22	71%
	April	207,187	206,656	531	30	24	80%
	May	225,901	212,846	13,055	31	19	61%
	June	235,718	235,478	240	30	20	67%
	July	259,763	259,605	158	31	13	42%
	August	275,905	275,564	341	31	16	52%
	September	266,291	266,053	238	30	8	27%
	October	207,522	207,312	210	31	18	58%

Monthly totals including losses waived by Power Services during over supply season.

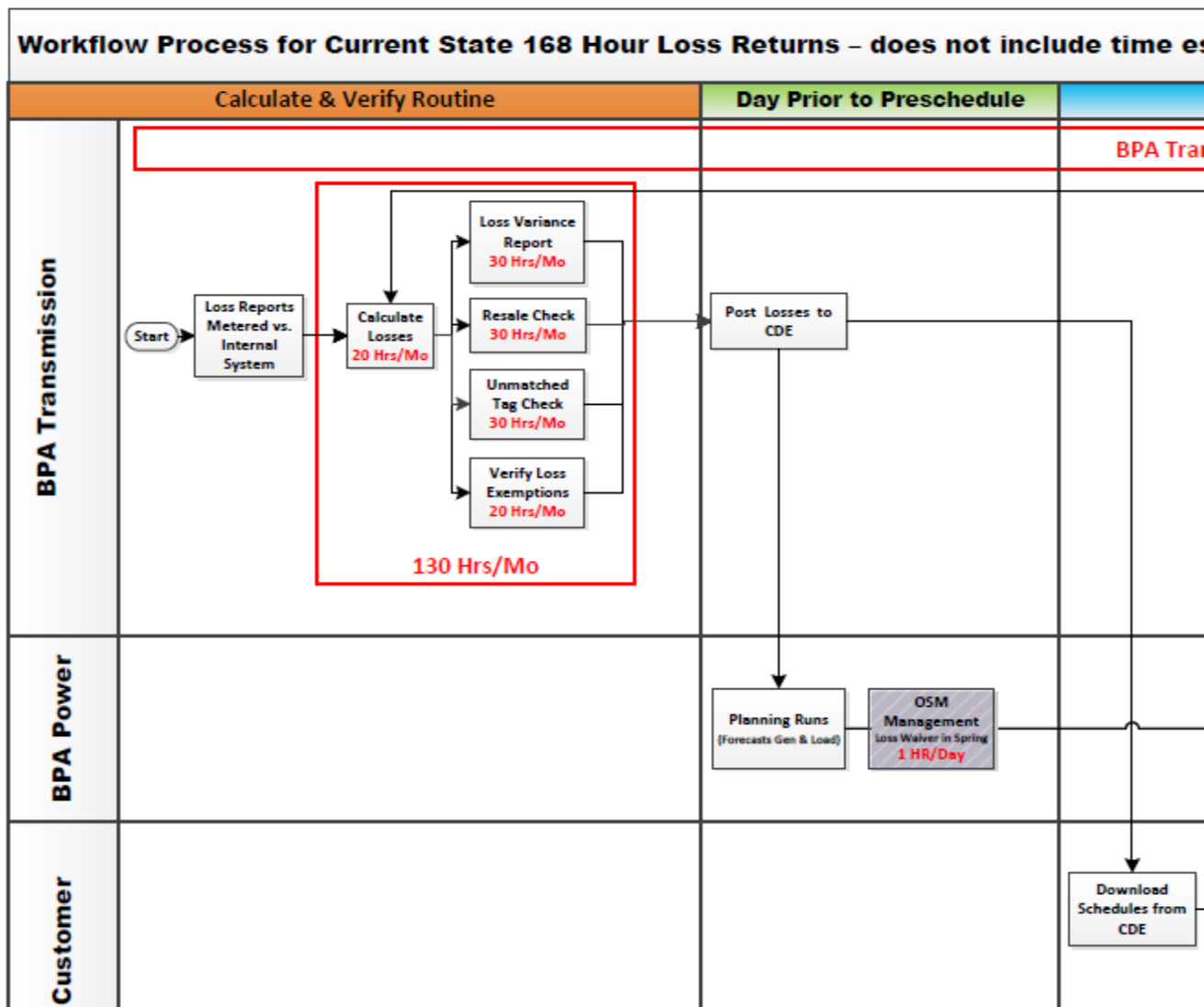
Administrative Burden

- Current State Daily Process - ~1.4 FTE
 - Calculation Review
 - Obligations vs Actuals
 - Checkout & Carry Forward
- Software
 - Recurring maintenance of customized loss module
 - Application Regression Testing
- Management and resolution
 - Issues around changes in loss return elections
 - Uncollected/unreturned loss obligations

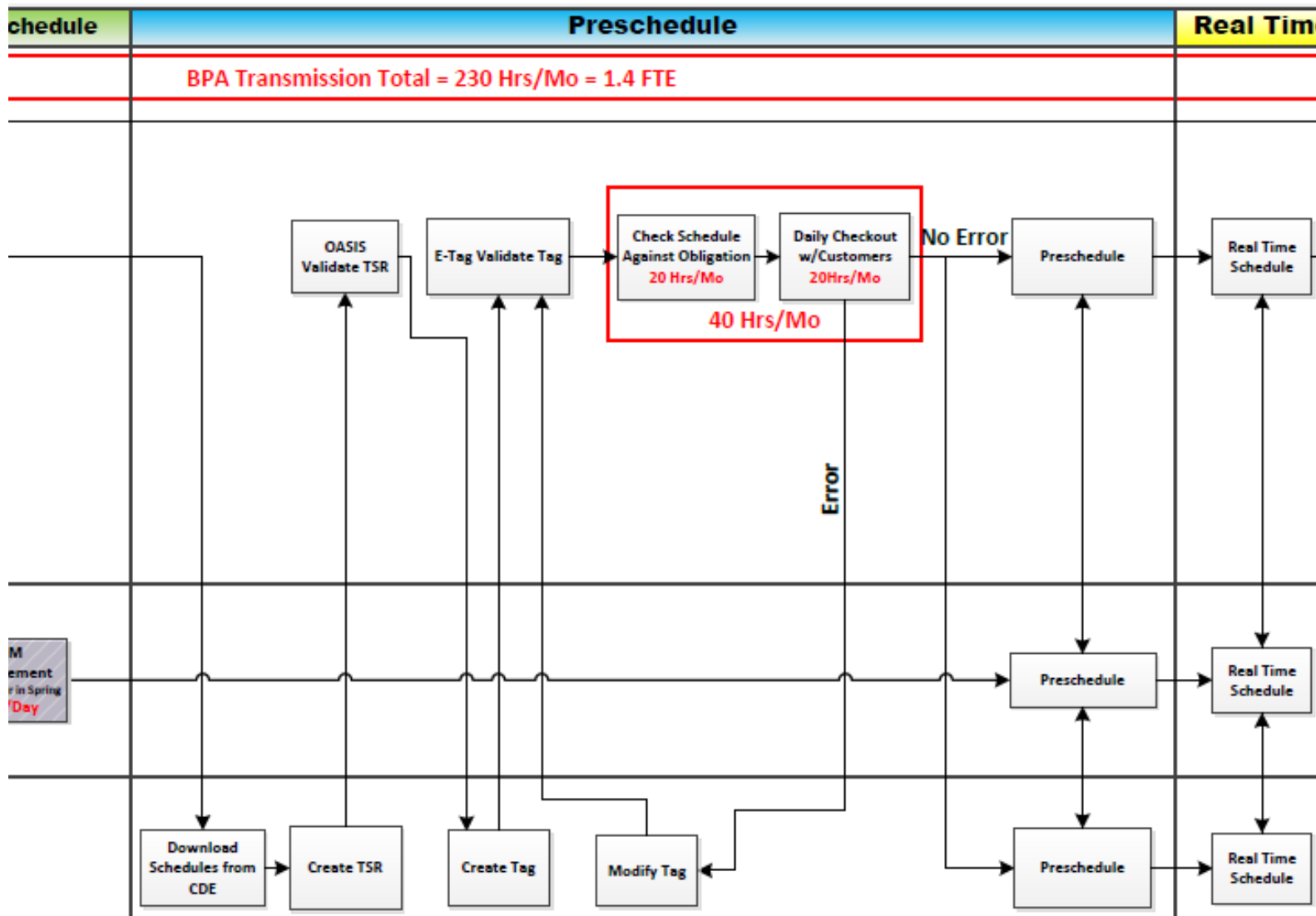
Administrative Burden



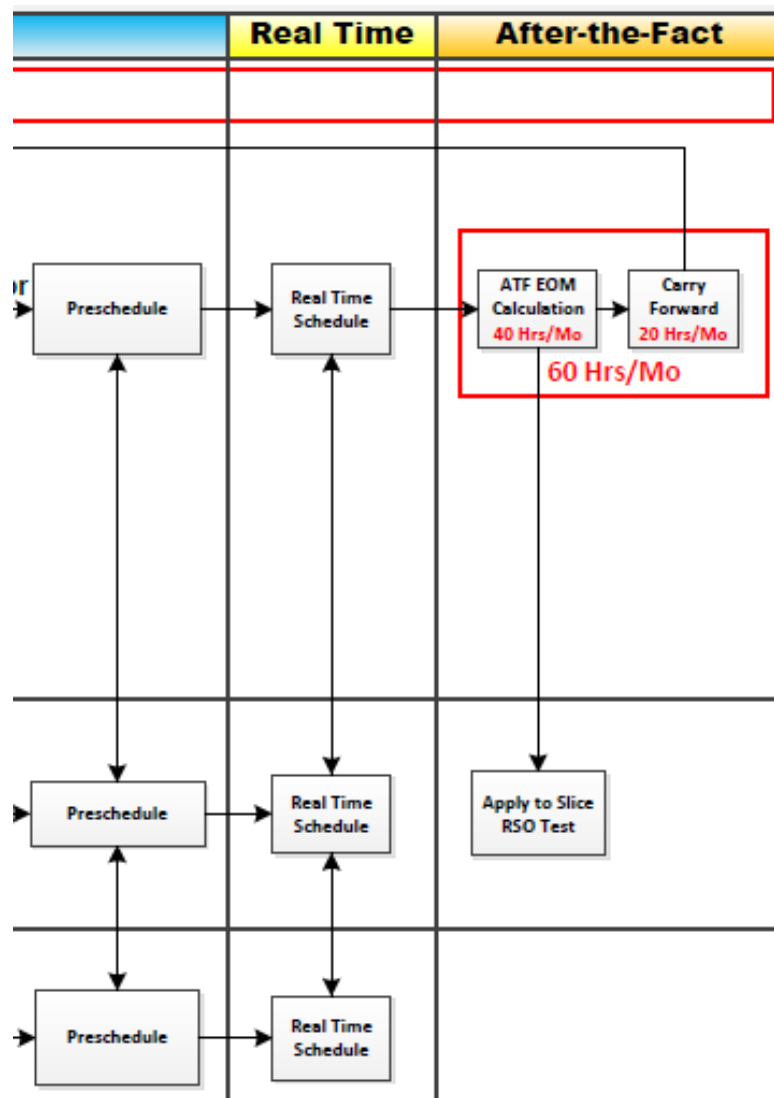
Administrative Burden



Administrative Burden



Administrative Burden



Software Maintenance/Testing

- FTE impacts not included on process diagram
 - App is prone to errors/software variances
 - App needs testing during monthly software upgrades even when not included.
- Financial
 - Monthly maintenance fee

Uncollected Obligations

- BPA engages customers when physical losses are not returned on time – this can be the result of:
 - A customer allowing its loss return agreement to lapse after repeated attempts from BPA to renew;
 - A PTP agreement expiring before a replacement agreement can be signed for a contract to be in place to bill losses against;
 - A generator returning losses in-kind ceases operation before an “in-kind” loss obligation is satisfied.

Consequences

- BPA Transmission AEs work with the BPA Power Services Trading Floor to make alternate arrangements to make BPA whole.
- Trading Floor performs a “lookback” to calculate the financial value of the losses.
- BPA Transmission AE executes a Letter Agreement allowing for the one-time financial settlement of losses.
- Customer is billed for losses.
- This process is labor intensive and takes all involved off task for a one-off solution.
 - In the last calendar, year we have had multiple instances which have required review, analysis and resolution.
 - These issues arise each year.