



# ***COST SAVINGS: SUBSTATION BATTERY TESTING***

*PRESENTED BY:*

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*Informational Only*

# OBJECTIVES & TAKEAWAYS



- **DISCUSS SUBSTATION BATTERY TESTING**
- **DISCUSS AUTOMATED TESTING & MONITORING COST SAVINGS**

# AGENDA

- **SUBSTATION BATTERIES**
- **MANUAL VS AUTOMATED TESTING & MONITORING**
- **COST SAVINGS**



Hamilton Wolfe Substation

# SUBSTATION BATTERIES

- ❑ Substation batteries are used to:
  - Provide protective relay controls
  - Operate substation equipment
- ❑ Battery failure can result in outages & catastrophic equipment damage
- ❑ Testing & monitoring is a regulatory compliance requirement
- ❑ Manual testing & monitoring of batteries is costly & time consuming



Installed battery monitoring system – partially automated

**Automated monitoring of batteries is essential to improve reliability of the electric grid, safety, & compliance.**

# TESTING & MONITORING



Installed battery monitoring system – fully automated

Comparison of Battery Testing & Monitoring Manual VS Automated		
Testing/Monitoring	Manual Testing (Former Process)	Automated Testing (New Process)
<ul style="list-style-type: none"><li>• <b>Battery testing &amp; monitoring (4 &amp; 6 month intervals)</b></li></ul>	<ul style="list-style-type: none"><li>• <b>No real-time visibility</b></li><li>• <b>Inconsistent reporting methods</b></li><li>• <b>Site visits</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Real-time condition assessments</b></li><li>• <b>Testing/reporting consistency</b></li><li>• <b>No site visits</b></li></ul>

**Automated testing & monitoring of substation batteries is more efficient, effective, & safer than manual testing.**

# COST SAVINGS



- Automated battery testing & monitoring benefits:
  - ✓ Less truck rolls
  - ✓ Allows crews to focus on other maintenance
  - ✓ Improved compliance reporting & safety
  - ✓ Testing consistency
  - ✓ Proactive maintenance & improved reliability
- Future cost savings: automated electrolyte level monitoring

Manual Battery Testing Cost Analysis - Annual			
Method	# of Battery Sets	Total Labor Hours Saved	Total Average Cost Saved
Manual battery testing & monitoring	178	4,098	\$328,000

**Automating battery testing & monitoring saves labor hours that are currently used for other proactive maintenance.**



***Thank You***