Service Performance and Total Cable System Cost

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The “Total Cost” of Ownership
• Is important
• Difficult to estimate
We can do a good job on “First Costs”
We would like to know more about “Operational Costs”
**Approach**

- Focus on extruded cable systems installed since 2000
- Components failing in service, excluding third party damage
- Consider HV (69 – 150 kV) & EHV (230 – 400 kV)
- Obtain disbursement of component failures
- Estimate most likely failure rate and most likely range
What has Failed?

Collated in 2014
Estimates of Component Rates

- Reported HV lengths >4 times EHV lengths
- Collated in 2014
Lifetime costs with Service Data

Example Project - Medium Sized

- Repair
- Installation
- Accessories
- Cable

Costs (% of Initial)

Initial 0-4 yrs 4-20yrs 20-40yrs
Conclusions

- Total Costs matter

- Service Data are required to make reasonable estimates of the Operational Costs

- There is no “one figure” for
  - Failure rates
  - Initial Costs – project dependent
  - Operational Costs – project & repair method dependent

- Next step is Scenario Modeling to understand the reasonable ranges