

Risks of Cable System Upgrading

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Failures on System Upgrading

25kV System Installed

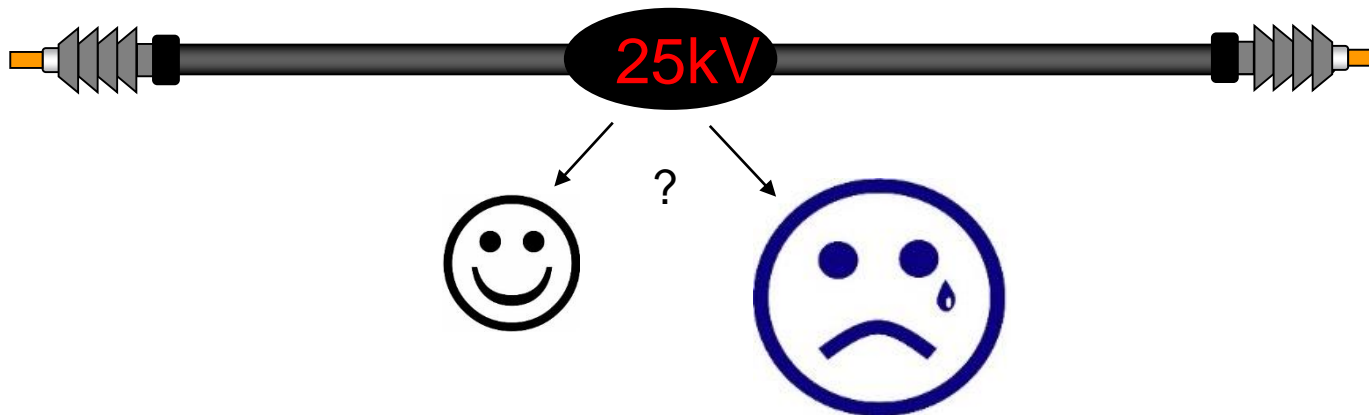


Operated as 5kV System



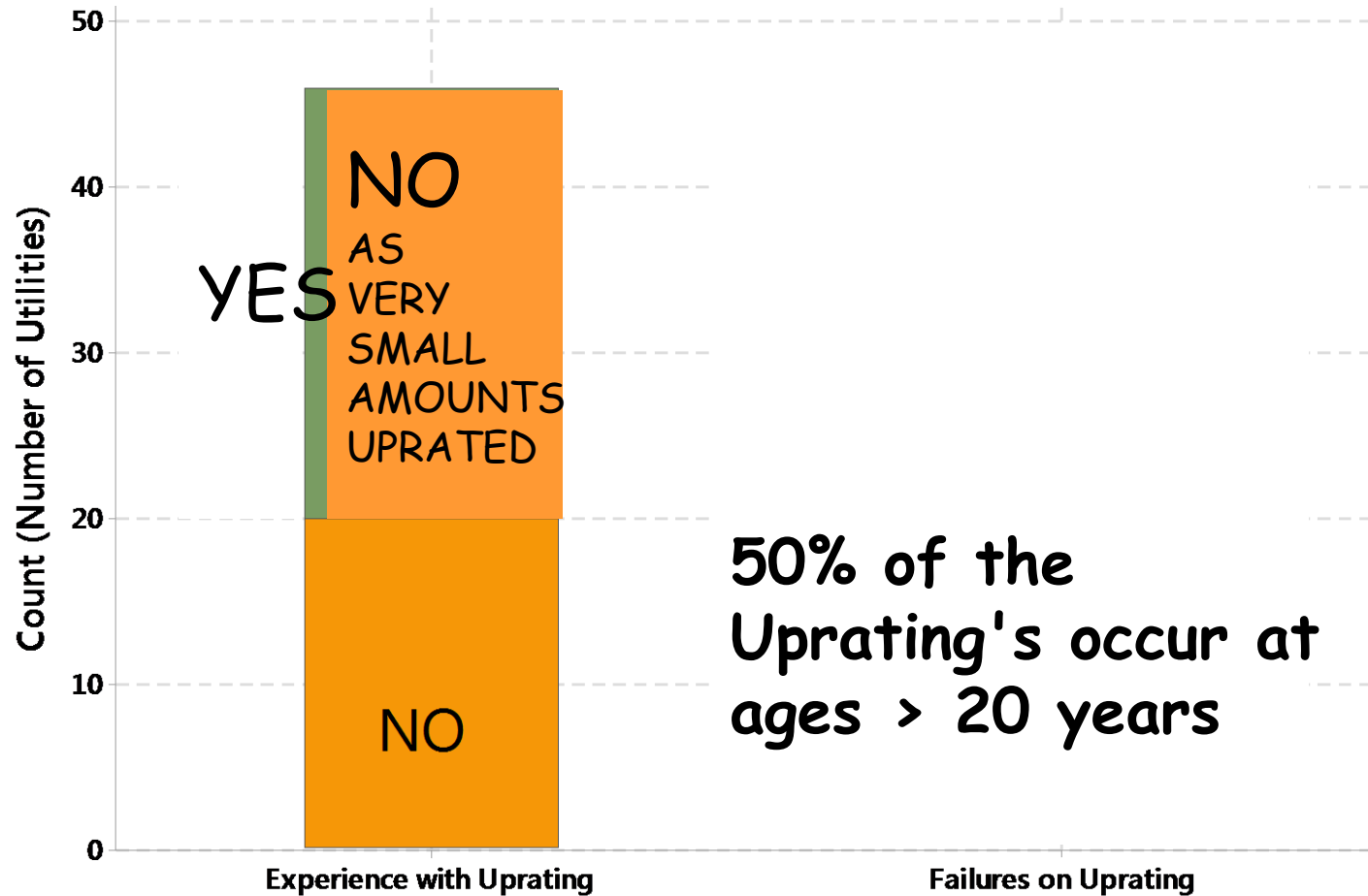
Δt

Upgraded from 5kV System to 25kV System

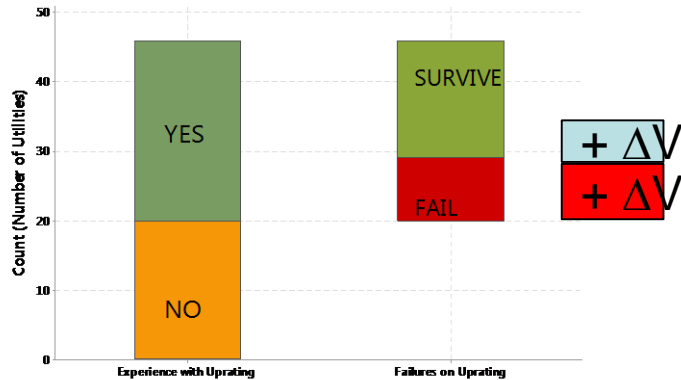


ΔV
(Upgrading Voltage)
= 25 - 5
= 20 kV

Responses



How Big Were the Updatings?



Most common upgrading voltage is 10kV .

Since there is a mixture of good and bad experience, we can estimate likelihood of good experience

15kV System Installed



Operated as 5kV System

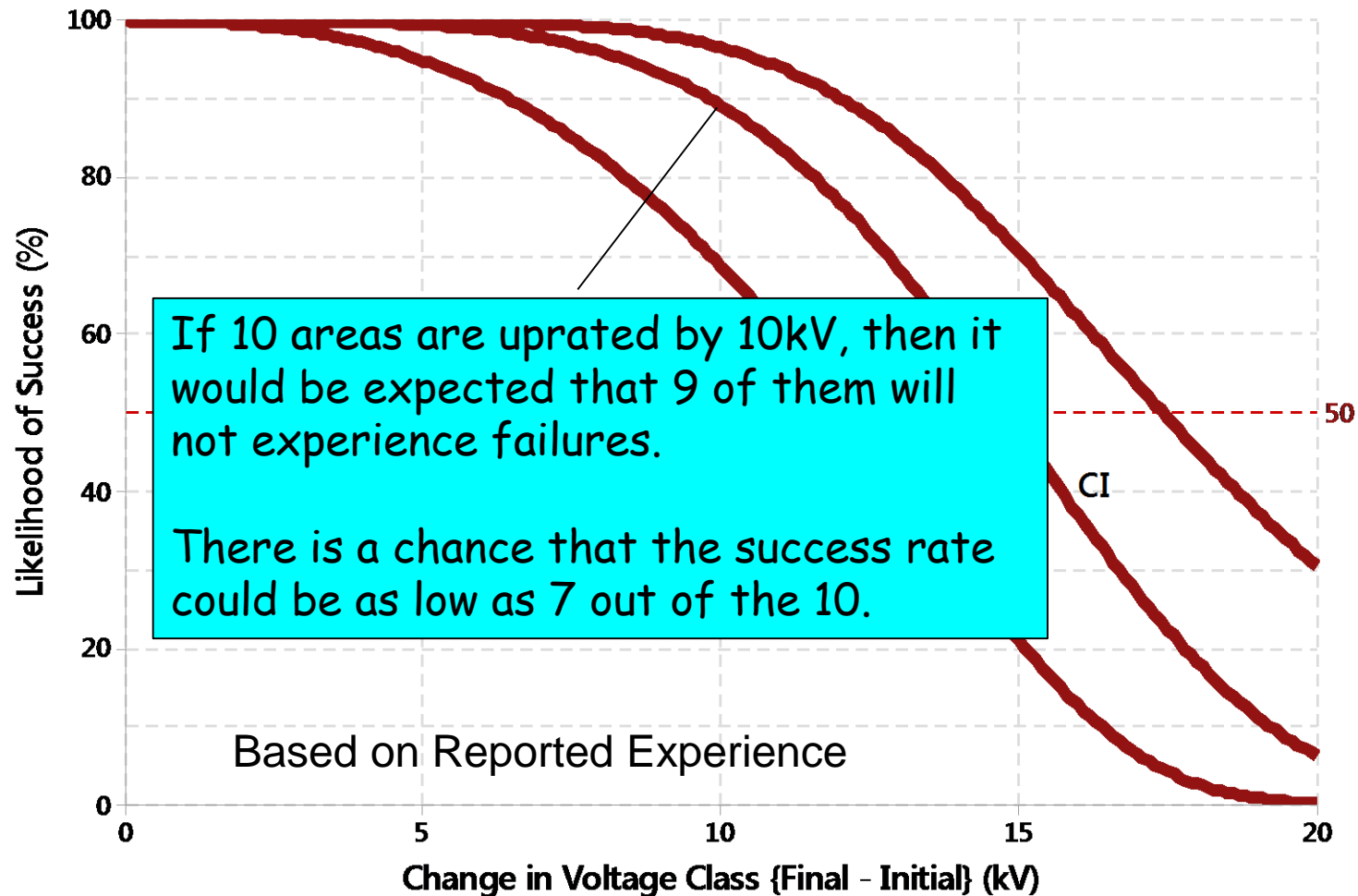


Upgraded from 5kV System to 15kV System



$$\begin{aligned} \Delta V & \text{ (Upgrading Voltage)} \\ & = 15 - 5 \\ & = 10 \text{ kV} \end{aligned}$$

How Likely Will it be "Incident Free"?



In Conclusion

- Upgrading is
 - a niche activity
 - undertaken by many more utilities than previously thought
 - most utilities upgrade without issues



- On average, upgrading is undertaken by age 20.
- It is likely that the success of upgrading will depend upon the magnitude of the upgrading increment; 10kV is the most common - anticipated to be 90% successful.