

Generator Simultaneous Tap Change

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nationalgrid

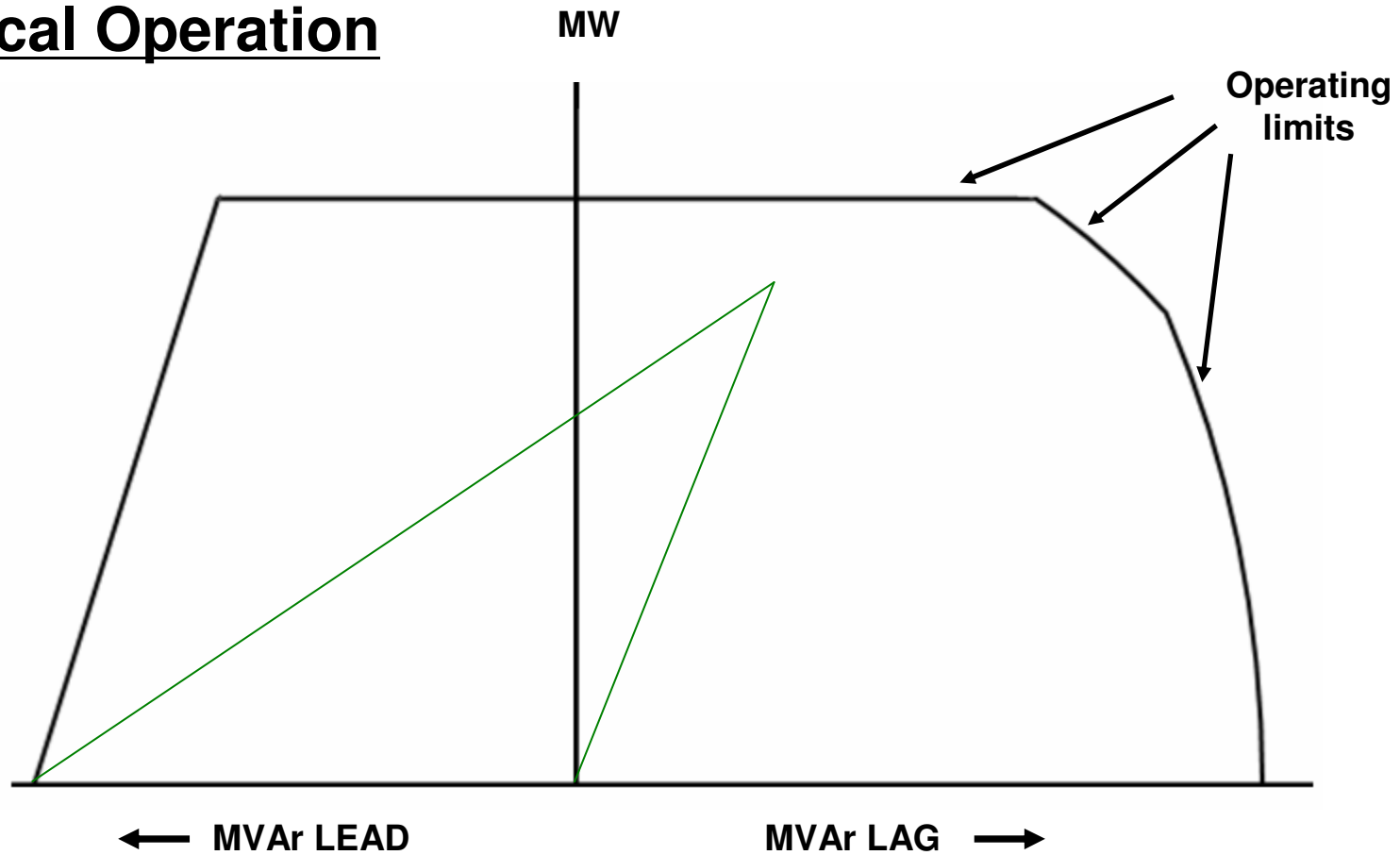
The power of action.™

Background

- ◆ Recent trials of generator target voltage have been successful
- ◆ Important to maintain readiness on other lesser-used techniques for voltage control
- ◆ Generator simultaneous tapping:
 - ◆ Used extensively in 1980s and 1990s
 - ◆ Last used winter 2000/2001
- ◆ Simultaneous tap change in Grid Code:
 - ◆ GD46 - Definition
 - ◆ BC2 Appendix 2 – Reactive power instructions

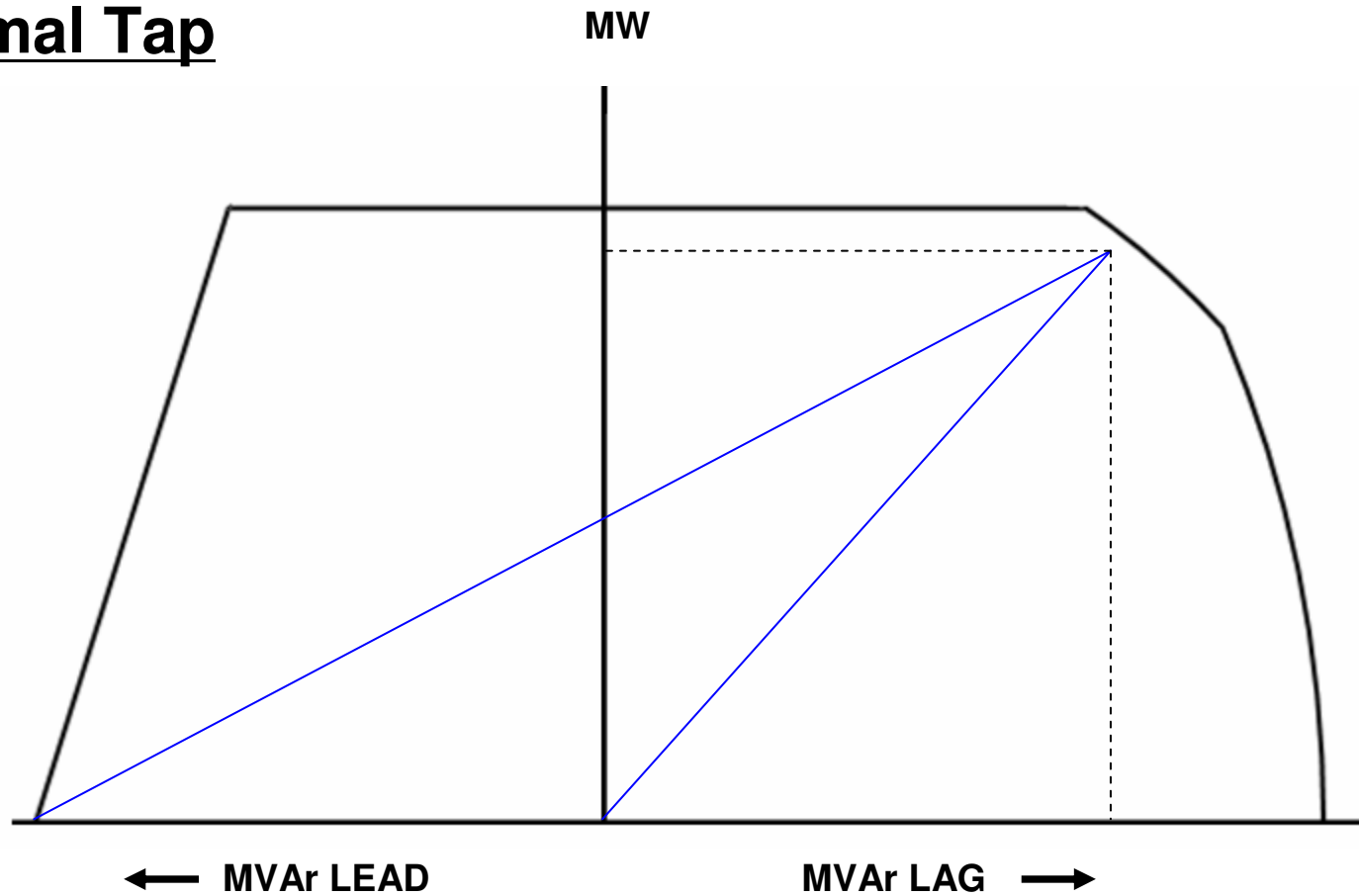
Theory

Typical Operation



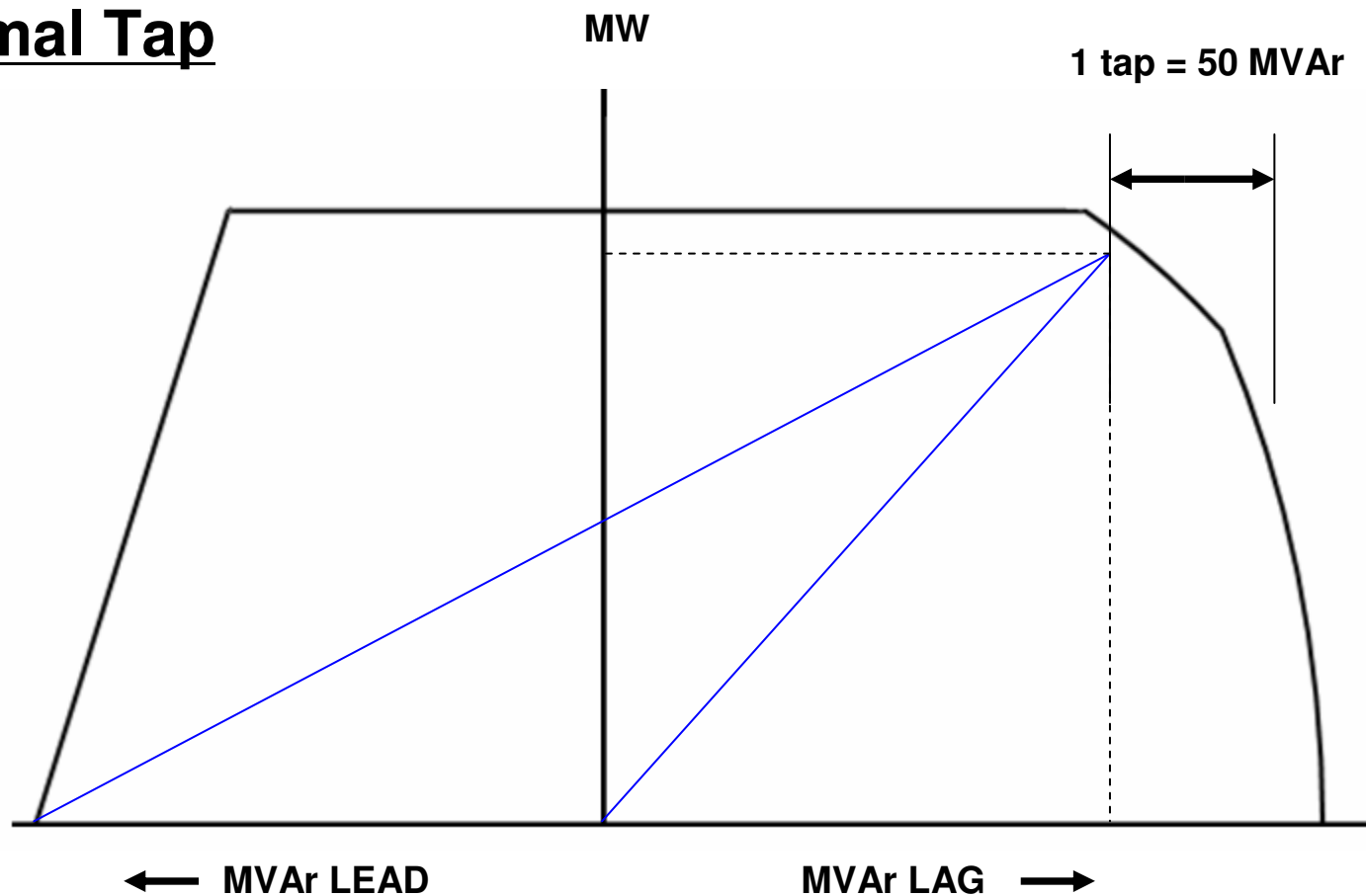
Theory

Normal Tap



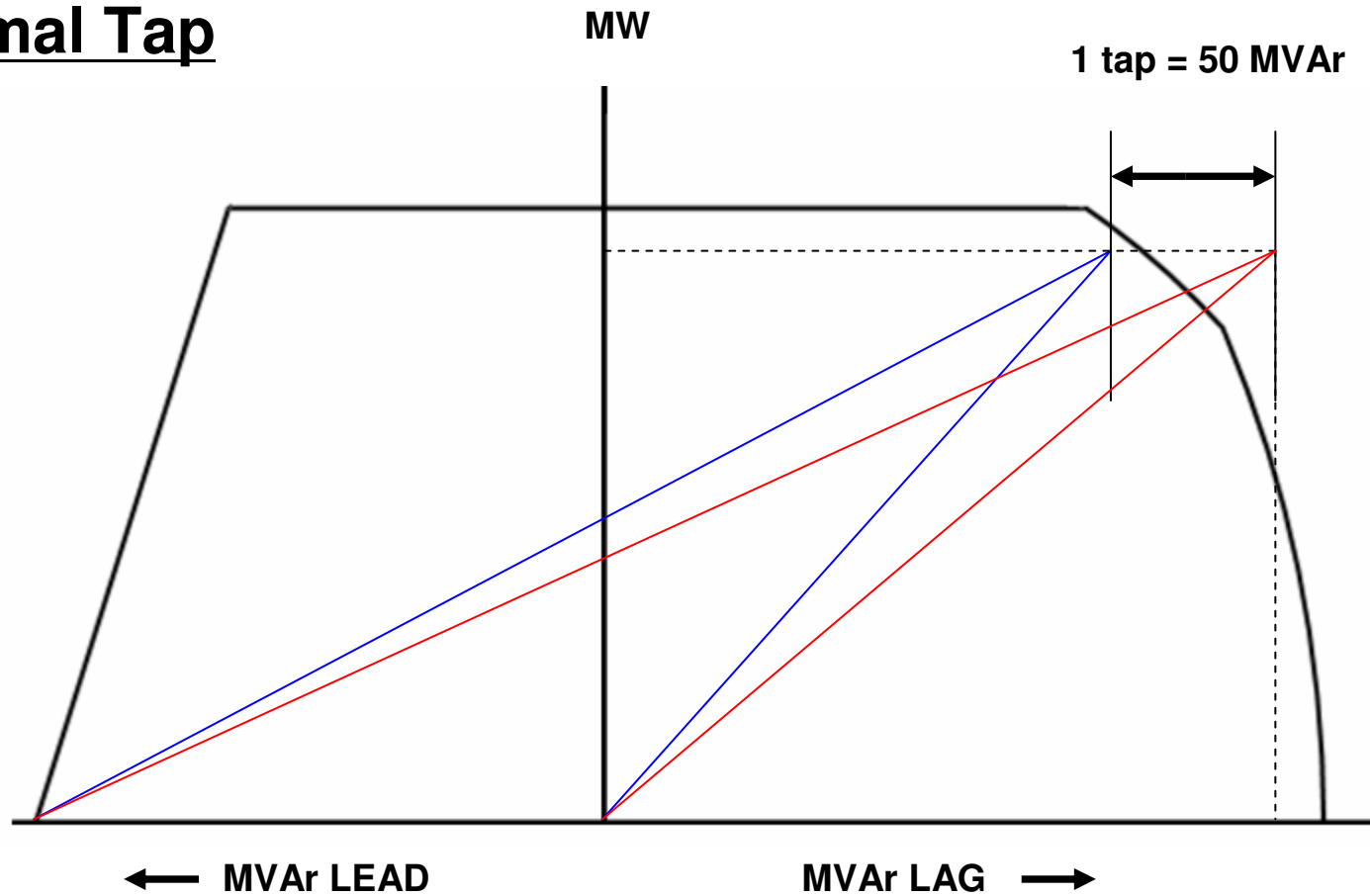
Theory

Normal Tap



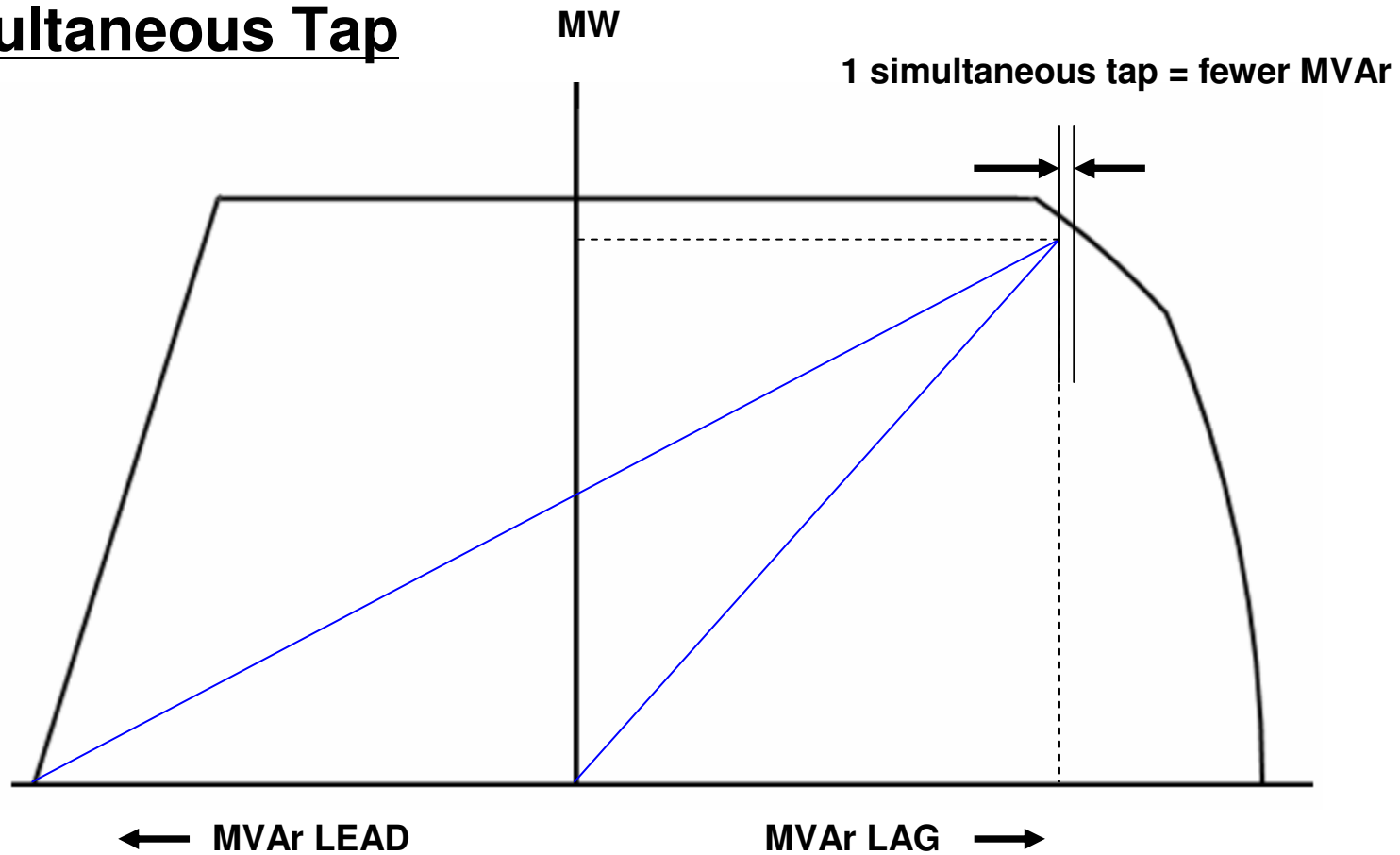
Theory

Normal Tap



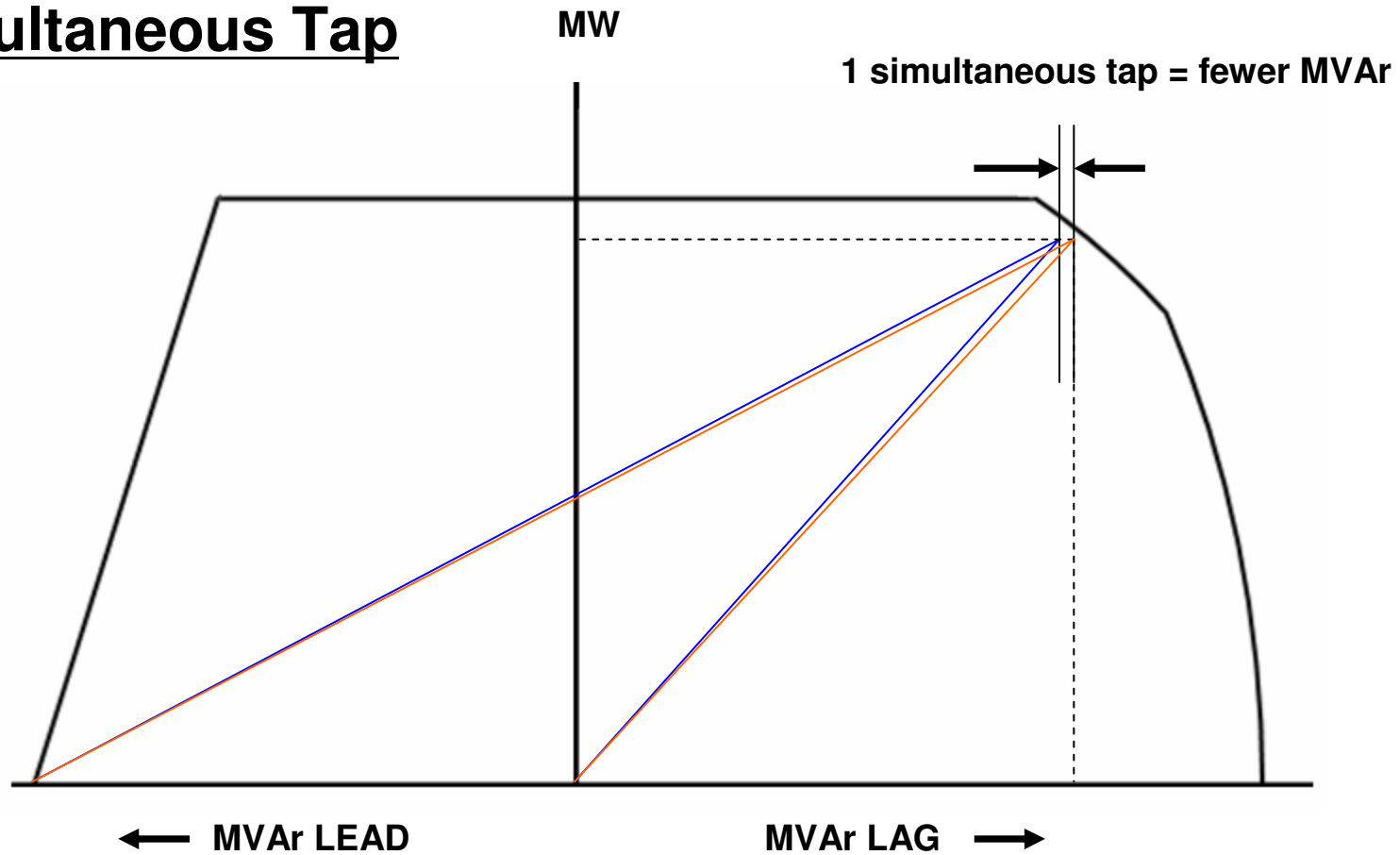
Theory

Simultaneous Tap



Theory

Simultaneous Tap



In Practice

Message from: National Grid Control

Message to: XXXX Power Station

At 1100 HRS today

On Generators 1, 2, 3 and 4

Tap 1 tap to increase system volts

Benefits

- ◆ Instantaneous change in system reactive power
- ◆ More impact on voltage profile
- ◆ More effective utilisation of generator reactive capability
- ◆ Improved system security

Further Work

- ◆ Generator simultaneous tap practice to be undertaken in near future
- ◆ Generator operational staff to be engaged on simultaneous tap change requirements
- ◆ National Grid investigating potential for using OBS (Operational Broadcasting System) to issue instructions for simultaneous tap change