

# Power System Assessment & Transmission Planning



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Principal Power System Planning Engineer

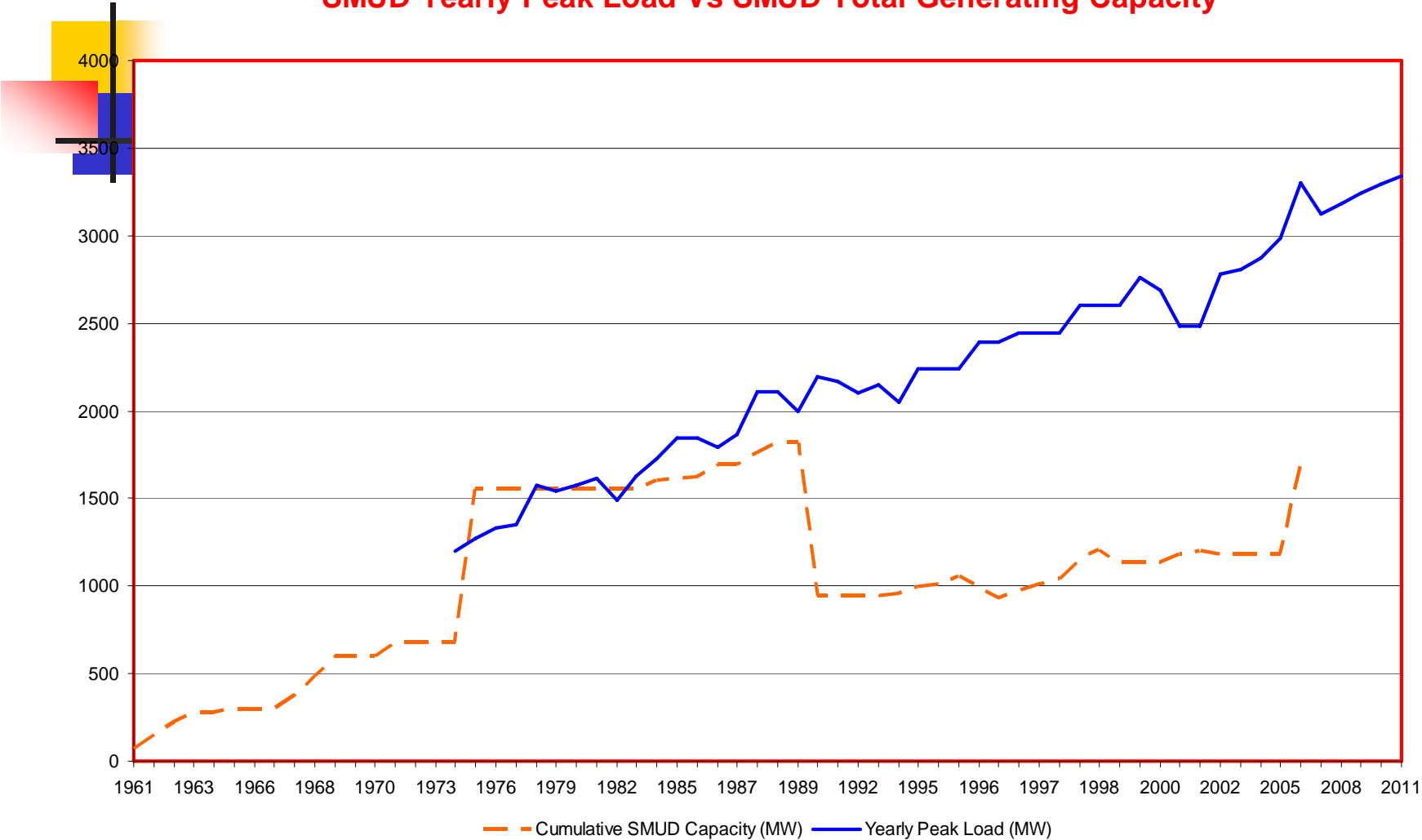


# Mission Statement:

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- Formulate plans and make recommendations to management for the installation of transmission facilities to meet electric power needs in a reliable, efficient, environmentally sound, and economic manner.
- Work closely with neighboring utilities to coordinate the development of the SMUD, WAPA, and PG&E transmission systems.

# SMUD Yearly Peak Load Vs SMUD Total Generating Capacity





# Resource Additions

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- Cosumnes Power Plant 2006
- Roseville Energy Park 2007
- O'Banion-Elverta Transmission 2009
- Iowa Hill Pumped Storage 2014

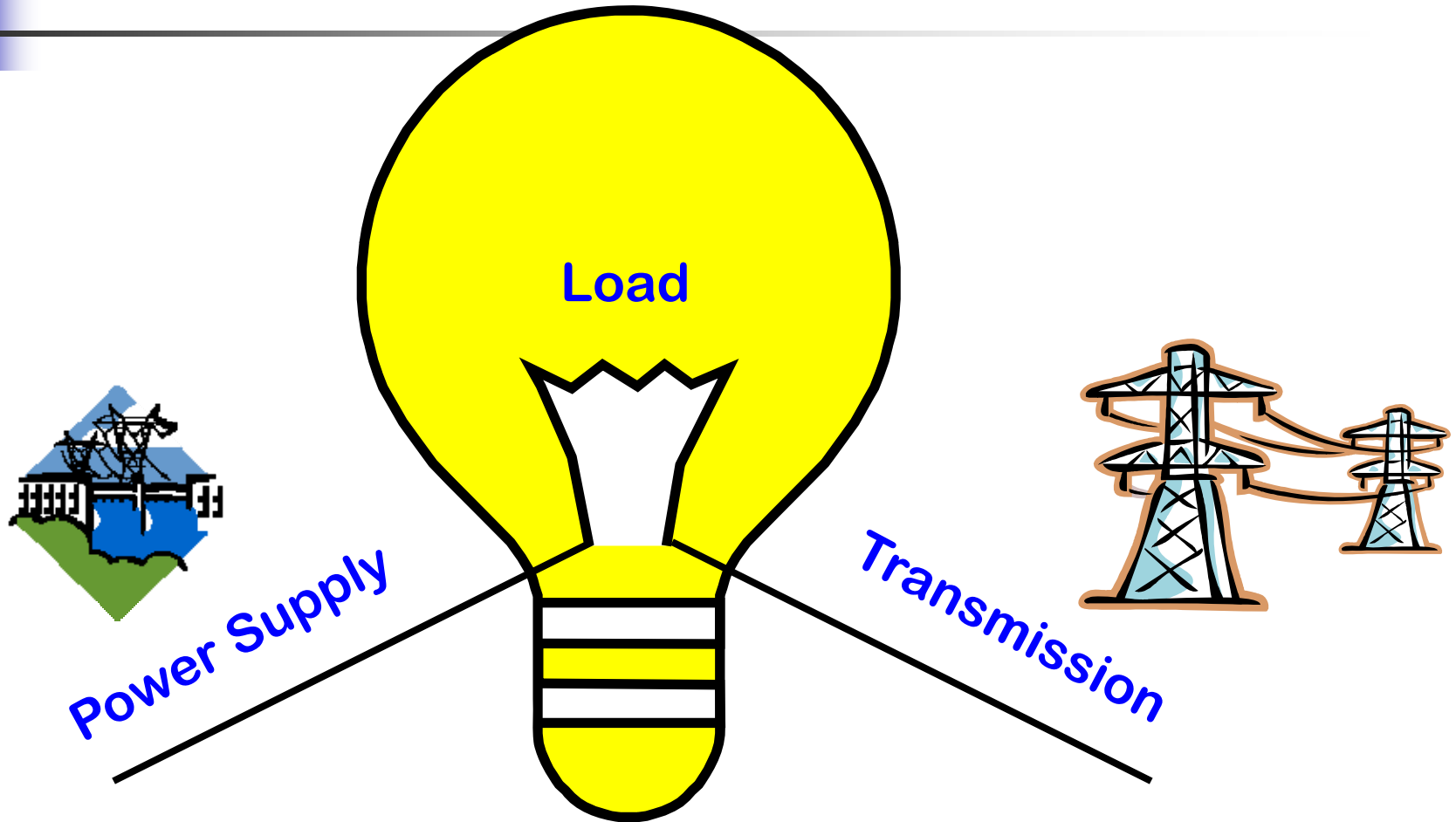


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# Core Value: Reliability



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# PSLF: Tools of the Trade

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## Post-Transient Analysis & Transient Analysis

- Single Contingency & Double Contingency
  - Thermal Loading Criteria
  - Voltage Criteria
  - Frequency Criteria
  - Stability Criteria

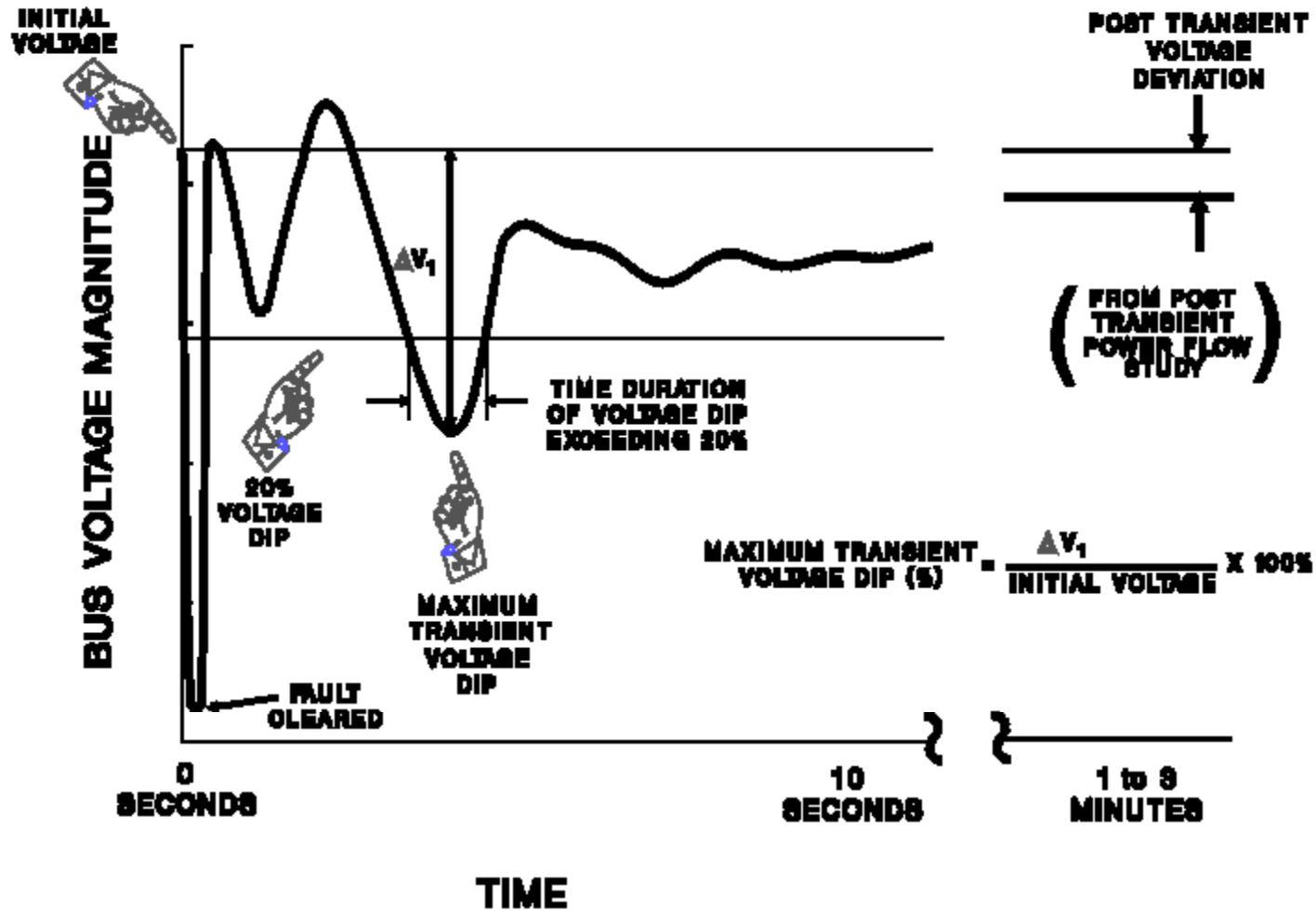


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# VOLTAGE PERFORMANCE PARAMETERS



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# PSLF: Tools of the Trade

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- Voltage Stability Analysis
  - Power-Voltage Curves
  - Q (MVAR)-Voltage Curves

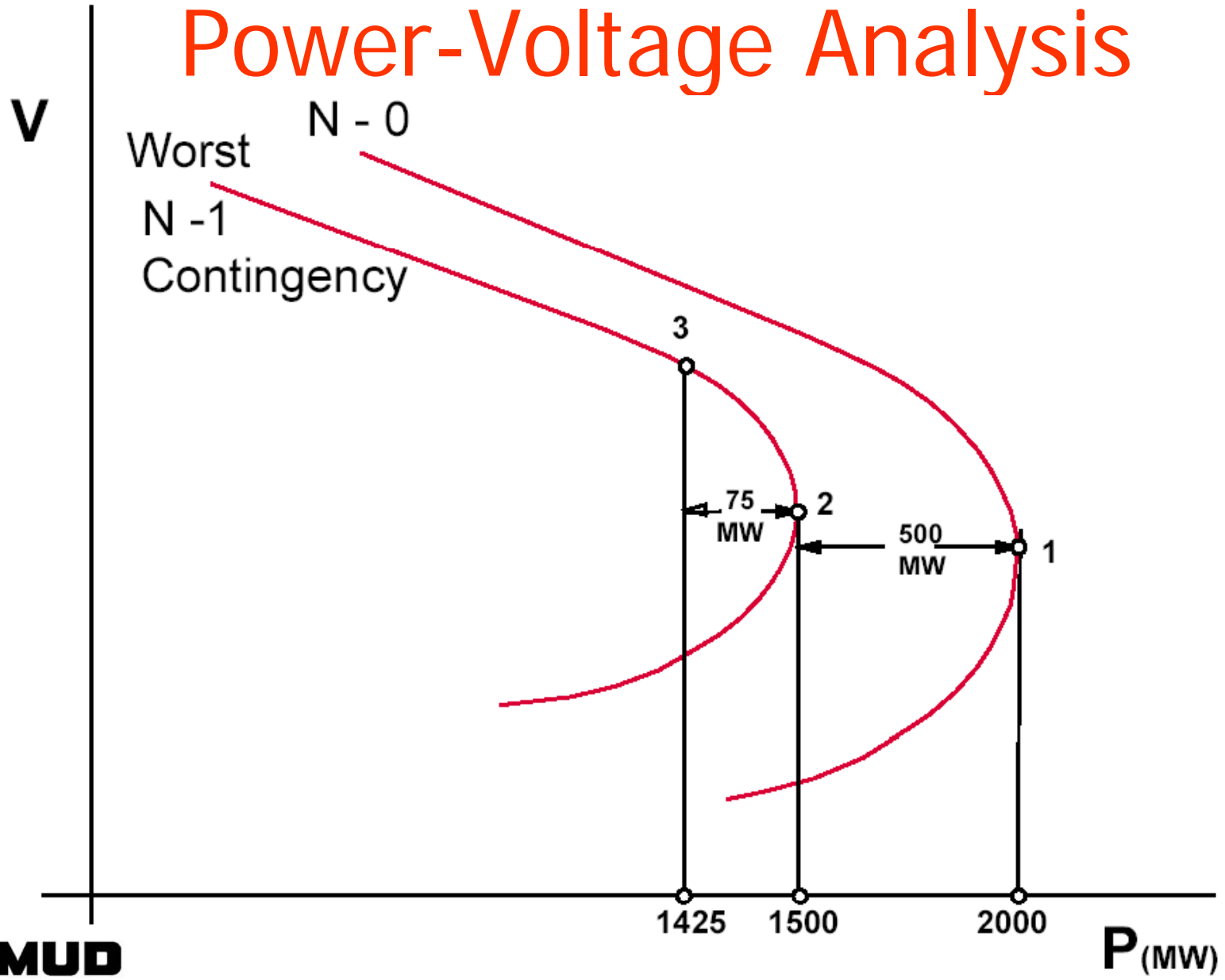
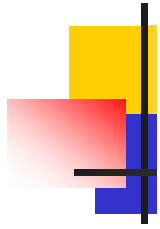


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# Power-Voltage Analysis



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# Transmission Reliability Plan

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- Five-Years
  - Case year 2 through 5
  - Forecasted Load
  - Preferred Options
- Ten year
  - Long Range Plan

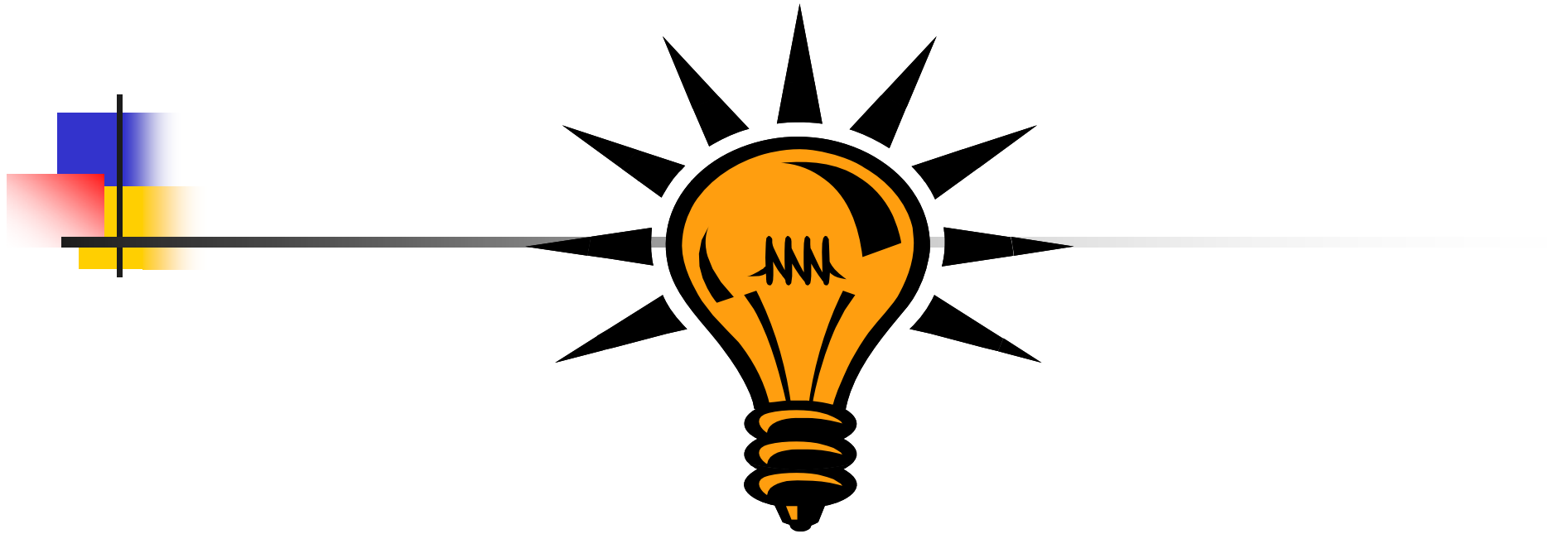


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# Discussion



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