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**Technical Services Group**  
**Emerging Issues for Prime**  
**Contractors**

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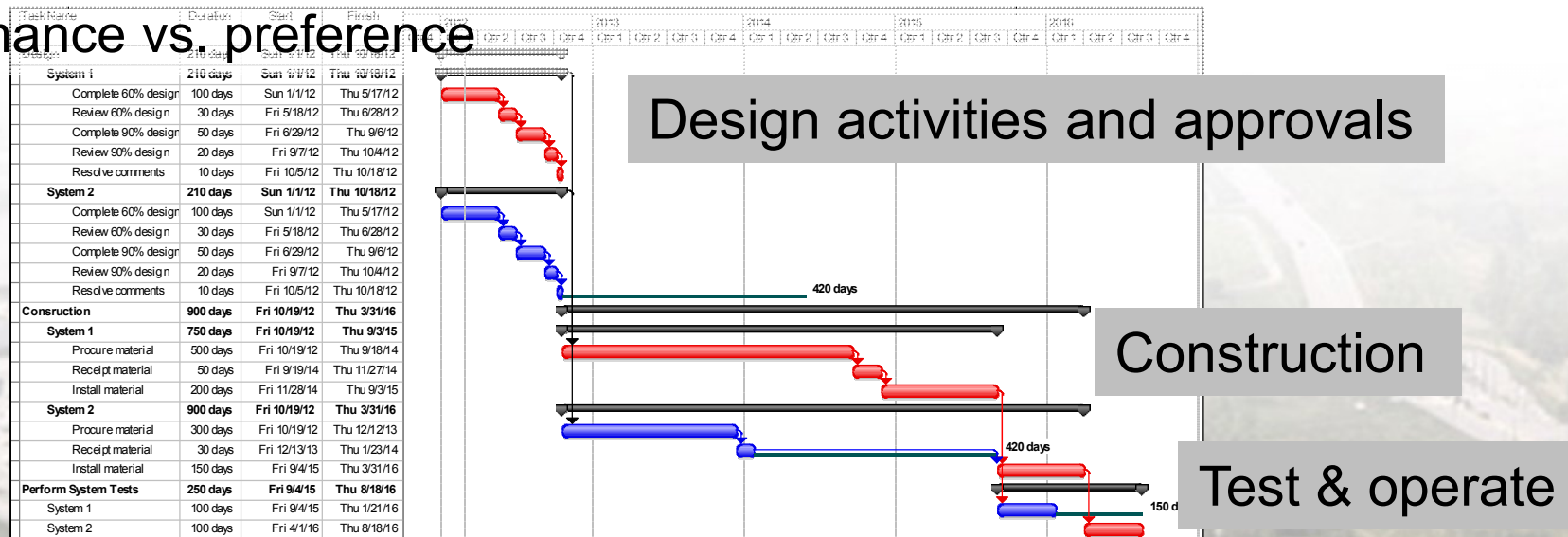
# Three emerging issues related to risk

- Safety's effect on project risk
- Project scope effect on risk
- Project size and effect on risk



# Design safety and effect on project risk

- Safety (design and execution) is one of the highest project risks
- Differing design opinions, left unresolved, delay completions that become part of the critical path
- Increasing activities on critical path increases project risk, and ultimately increases program risk
- Engineered controls and system design
  - Use of an adequate set of standards
- Performance vs. preference

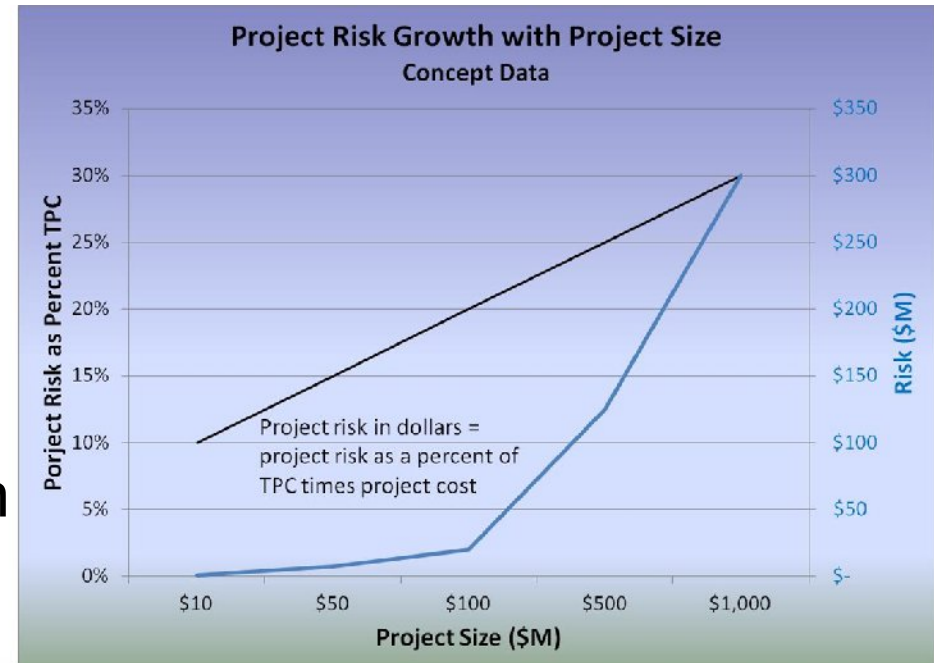


# Project scope and effect on risk

- Project scope must be clearly defined. If scope is not well defined or accurate then
  - Activities, durations, and resources (cost) potentially have large errors
  - Risk increases
  - Forecast values have large uncertainties
- Two types of errors common
  1. Scope following contract award is not as proposed
    - True-up required
    - Additional activities desired
    - System or equipment performance does not meet performance goals
  2. Client or regulator provides direction of “how” after baseline is established,
    - Activity durations are affected
    - Number of interfaces increases
    - Risk is recognized → Cost and schedule increase
- New computer models coupled with higher funding uncertainty provide a variant on this issue; a frequently *refined* scope.
- If these conditions exist with all DOE projects, program risk increases geometrically

# Project size and effect on risk

- As projects get larger, the MR and contingency requirements as a percent of TPC increase
  - New technologies
  - More interfaces
  - More reviews
- The result is that project risk in absolute terms increases geometrically



- Current efforts to reduce program risk by dividing projects into smaller scopes will increase program risk, not reduce it
  - The technologies are a function of the scope; that risk cannot be reduced
  - More projects → more reviews → more risk
  - More projects → more interfaces → more risk
  - The trend shown in the graphs extend to program risk as well; program risk increases geometrically