MSC Opinion on Transmission Expansion Evaluation Methodology

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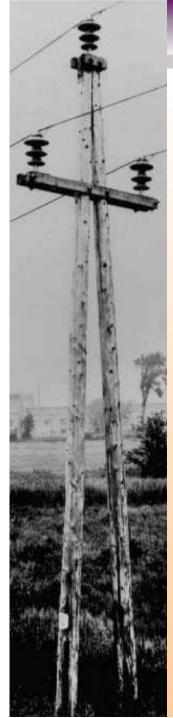
Five Principles of TEAM Methodology

- 1. Benefits framework
- 2. Network representation
- 3. Modeling market prices (including market power)
- 4. Uncertainty
- 5. Resource (demand/generation) substitution

MSC opinion comments on:

- implementation of the principles
- issues raised by stakeholders

Updated by BH 23 May 04



1. Benefits Framework

- a. Quantifies benefits to market participants
 - By type
 - By location

b. Appropriate economic criterion

- > Decided by relevant regulatory authority
- Depends on who is assumed to own facility
 - if by consumers, ratepayer test
 - if all market participants, then cost savings
- Will affect results (income shifts >> net cost savings)



2. Network Representation

- a. Rebuttable presumption: full network modeling ("parallel flows"/Kirchhoff's voltage law)
- b. Simpler representation ("zonal"/ "transshipment") permits more scenarios
 - But should demonstrate that results are not distorted



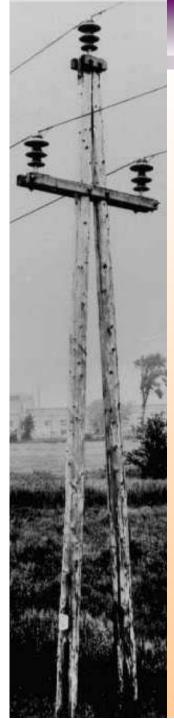
3. Market Prices

a. Interactions

- Transmission affects market power
- Market power affects transmission benefits

b. Market power difficult to predict

- Econometric, game theory approaches
 - No single approach is correct
- > Need to consider range of possibilities



4. Uncertainty

a. Focus on extreme conditions

- > Hydro, demand, fuel, entry
- View transmission as "insurance"

b. Examination of variety of views on extreme events

So method should easily accommodate different assumptions



5. Resource Substitution

a. Tradeoffs:

- Transmission affects demandside/supply resource mix & location
- Transmission can substitute
- b. Should explicitly consider how market investments respond to transmission choices