



ISO New England Inc.'s  
Regional Transmission Expansion Plan (RTEP)  
**Transmission Study Protocol**

*Note: This outline represents the general manner in which transmission studies are performed. Separate analyses addressing NEPOOL and sub-area resource adequacy and congestion (part of the RTEP process-see next page) are not outlined here.*

- Step 1: Determination of Study Scope – ISO-NE with TEAC**
- Annual regional load forecast process (CELT Report), including demand levels, distributed resources, and demand response
  - Known/expected generation additions and retirements
  - Known/expected transmission system additions and retirements
  - Sensitivity cases for transfer limits, generator dispatch scenarios, demand levels, etc. agreed upon at TEAC meetings
- Step 2: Verify modeling within PTI PSS/E Load Flow Model – ISO-NE and Transmission owners**
- Step 3: Perform system simulation – ISO-NE**
- Single and double line contingencies (failures)
  - Stuck circuit breakers
  - Unexpected generator outages
- Step 4: Assess system performance – ISO-NE**
- Voltage – assess adequacy of system voltage under each scenario
  - Thermal – assess potential for overloading of transmission lines
  - Short Circuit – assess potential for overstressed circuit breakers
  - Stability – assess ability of system to recover from ‘shocks’ and avoid cascading outages
- Step 5: Present preliminary results to TEAC for their input – ISO-NE**
- Step 6: Evaluate impact of market responses on transmission system – ISO-NE with TEAC**
- Step 7: Select best solutions – ISO-NE with TEAC**
- Step 8: Implement solutions – Transmission owners and market participants**

Please see the RTEP Process Flow diagram following.



# ISO New England Inc.'s Regional Transmission Expansion Plan (RTEP) Process Flow

The RTEP collaborative process is intended to solicit market responses to identified needs. The process of moving forward with specific upgrades is pursued if inadequate market responses develop to address the reliability and economic needs identified. Due to the uncertainties associated with market responses and the long lead-time to develop major upgrades, it is necessary to plan for required system improvements prior to the required in service dates. If alternative market solutions surface in the meantime, then the upgrade plan may need to be altered. In short, the RTEP process by its very nature is ongoing and iterative.

