East River Electric Power Cooperative
Document: Transmission Planning Criteria
Department: Engineering Services
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1. Objective

This document contains the planning criteria that East River (ER) uses to ensure that the ER transmission system is adequate to reliably deliver power to its associated member distribution cooperatives and other systems connected to ER's transmission system.

This document and the criteria described below will be subject to change at any time at ER's discretion. Situations that could precipitate such a change could include, but are not limited to: new system conditions, operating procedures, customer requests, Southwest Power Pool (SPP) requirements, NERC requirements, or other regulatory requirements.

2. Voltage Criteria

a. The following voltage ranges are generally considered to be satisfactory for the conditions studied:
   i. Base Case (Normal Condition): 0.95 to 1.05 per unit.
   ii. Contingency Cases (Emergency Condition): 0.90 to 1.10 per unit.
   iii. Additional facilities are generally assumed to be required if the voltage dropped below either the "Base Case" or "Contingency Case" conditions being studied.

3. Thermal Limits Criteria

a. Transmission line ratings are based on the maximum conductor temperature that maintains acceptable ground clearance requirements as specified by the National Electric Safety Code (NESC) standards in effect at the time the line was built. In general these temperatures include 50°C, 75°C or 100°C.

b. The emergency rating is equal to the normal rating for all transmission lines.

4. Transformer Loading Criteria

a. Transformers are considered overloaded when their loading exceed the highest continuous rating of the transformer:
   i. Base Case Condition (Normal Rating): 100% of "Base" nameplate rating.
   ii. Contingency Case Condition (Emergency Rating): 100% of "Highest Nameplate Rating" as specified on the nameplate for a period of 30 minutes or less.

5. MW-Mile Criteria

a. Each sectionalizing zone should meet the requirements noted below. If the requirements are not met, a plan will be developed to mitigate the issue:
   i. The MW-mile loading less than 2000.
   ii. The MW loading less than 30.