



Cape & Islands Electric Supply

Cape Wind Project Impact

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Presented by Charlie Salamone

Discussion Overview

- Cape & Island Electric Use
- Existing Generation and Transmission Supply System
- Impact Assessments for New Resource Interconnections
- Standards of Review for New Interconnections
- Interconnection Review Schedule

Cape & Islands Electric Use

- Cape summer peak loads have grown by over 100 MW since 1997 (growth rate of over 5% per year)
 - 1997 Summer Peak : 342 MW
 - 2002 Summer Peak : 446 MW
- Total peak load supplied by the Cape transmission system includes:
 - 42 MW for supply to Martha's Vineyard
 - 34 MW for supply to Nantucket
 - 404 MW for supply to Cape mainland
- Average load on the system is over 230 MW and total energy delivered by the Cape transmission system is approximately 2.0 GWH

Existing Transmission System

- Existing transmission system operates at 115 kV and 345 kV voltages
- Two 345 kV lines crossing the Cape Cod canal each are capable of carrying 1000 MW of load
- Two 115 kV lines crossing the canal each are capable of carrying 225 MW of load
- The Canal generating plant can deliver 1100 MW of capacity to the system
- The Pilgrim generating plant can deliver 660 MW of capacity to the system

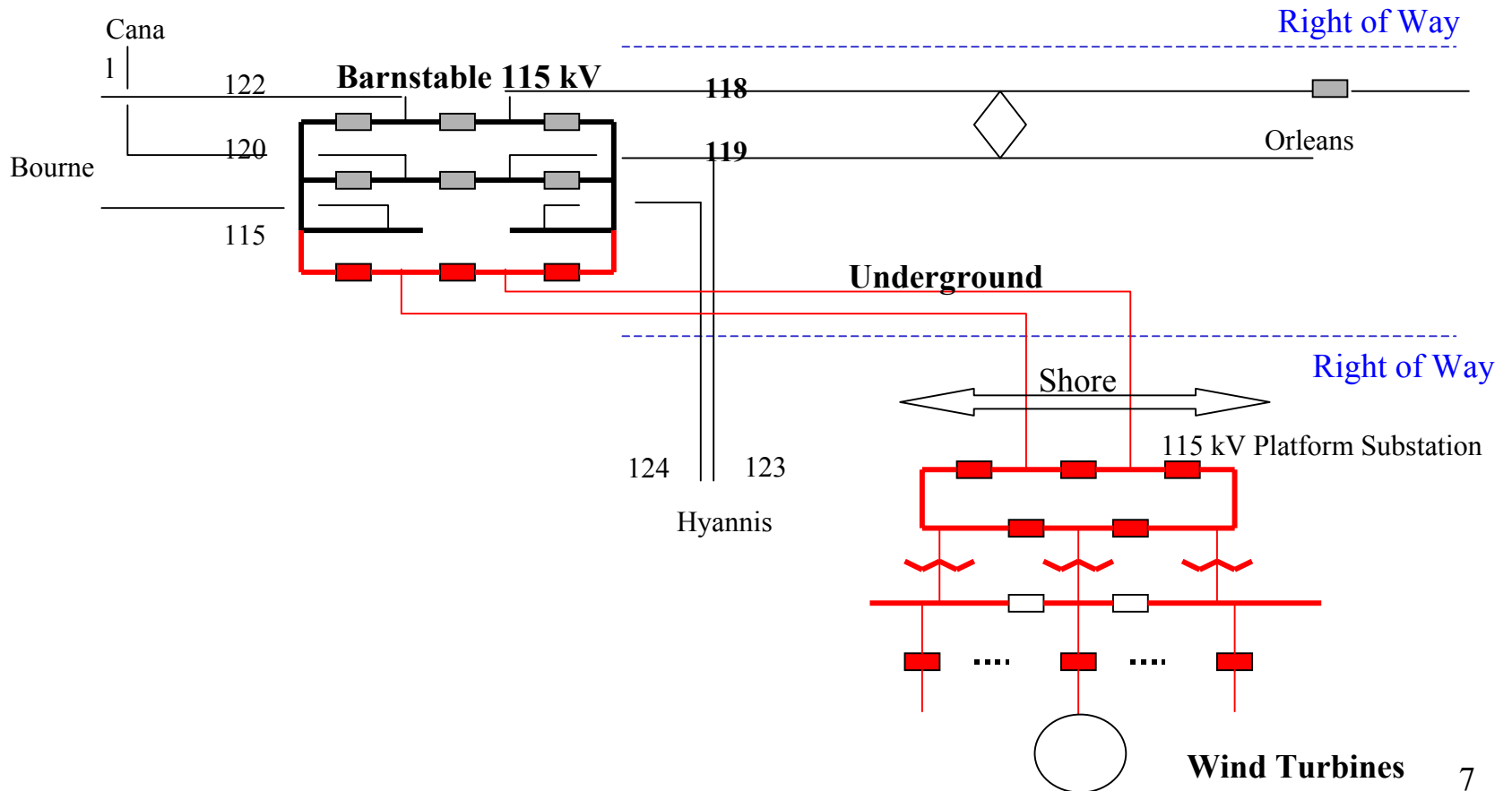


Impact Assessments for New Resource Interconnections

- Federal regulations obligate us to interconnect a generator as long as all impacts to the transmission system are mitigated
- NSTAR follows pre-established rules and works in concert with ISO-New England in assessing the impacts of the generator
- A complete analysis of the operational, steady state as well as second-by-second electrical impact of the plant and its interconnection are thoroughly studied

Proposed Interconnection

FIGURE 1 – Cape Wind Interconnection Alternative 1



Standard of Review

- Standards that must be met include:
 - Northeast Power Coordinating Council Reliability Standards
 - New England Power Pool Reliability Standards
 - NSTAR Reliability Standards
 - ISO Minimum Interconnection Standard
- Reviewing bodies include:
 - DTE / Siting Board
 - ISO New England
 - Transmission Task Force (NE Transmission & Generation owners)
 - Stability Task Force (NE Transmission & Generation owners)
 - NEPOOL Reliability Committee
 - FERC

Interconnection Review Schedule

- Study efforts are currently under way
- Detailed simulation models are under development for use in system impact studies
- Study work will take from 6 to 8 months to complete
- Review process will take from 2 to 3 months to complete
- Final approval of the interconnection by NEPOOL and ISO-NE would be possible in about 1 year

Electric System Impacts

- Positive Impacts
 - Additional system resource
 - Fuel diversity
 - Cape transmission system voltage support
- Potential Concerns
 - Dynamic response
 - Protection system coordination