

Approved: April 29, 2005
Date

Carl Dean Holmes

MINUTES OF THE HOUSE COMMITTEE ON UTILITIES.

The meeting was called to order by Chairman Carl D. Holmes at 9:06 a.m. on January 27, 2005 in Room 231-N of the Capitol.

All members were present except: Representative Vaughn Flora - Excused
Representative Bonnie Huy - Excused
Representative Melody Miller - Excused

Committee staff present: Mary Galligan, Legislative Research
Dennis Hodgins, Legislative Research
Mary Torrence, Revisor of Statutes
Jo Cook, Administrative Assistant

Conferees appearing before the committee: Larry Holloway, Kansas Corporation Commission, Topeka, KS
Tom Stuchlik, Westar Energy, Topeka, KS

Others attending: See Attached List

Chairman Holmes welcomed Larry Holloway, Chief of Energy Operations for the Kansas Corporation Commission, to the committee. Mr. Holloway provided a presentation on Transmission Regulation and the Southwest Power Pool (Attachment 1). He shared information on the history of the Kansas electric industry and the changes in policy made. Mr. Holloway also spoke of the current regulatory issues and the formation of the Regional Transmission Organization system. Additionally, the history of the Southwest Power Pool and its corporate structure was detailed. Mr. Holloway told the committee about the Commission's involvement with the Southwest Power Pool. Mr. Holloway responded to questions from the committee.

Thomas Stuchlik, Executive Director, Transmission Services, Westar Energy, shared a presentation on Transmission 101 - SPP Energy Imbalance Market (Attachment 2). Mr. Stuchlik told the committee about the basics in the transmission of electricity and the problems that occur in the power grid. He also addressed the three phases of SPP's energy market design. Mr. Stuchlik responded to questions from the committee.

The meeting adjourned at 10:30 a.m.

The next meeting is Friday, January 29, 2005 at 9:00 a.m.

HOUSE UTILITIES COMMITTEE GUEST LIST

DATE: January 27, 2005

NAME	REPRESENTING
Ed Rader	KFD
Larry Hollaway	KCC
Tom Day	KCC
Rachel Weil	Rep. McCrea-Mullen
Zach Coble	Rep. Slowatz
Tom Hartman	Sunflow Electric
Dave Holtman	KEC
MARK SCHREIBER	Westar Energy
Tom Stuchlik	" "
JOHN C. BOTTENBERG	WESTAR ENERGY
Jandra Braden	Great Plains / KEPL
Rebekah Gaston	Rep. Long

Transmission Regulation & the Southwest Power Pool

Larry Holloway

Chief of Energy Operations, KCC Staff



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Summary

- Industry Background
- Regulation of Electric Utilities
- Historical Wholesale Generation and Transmission Practices
- Changes in Transmission Regulation
- Formation of the Southwest Power Pool Regional Transmission Operator
– SPP RTO



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HOUSE UTILITIES

DATE: 1-27-05

ATTACHMENT |

Different Sectors of the Electric Business

- Generation
 - Production
- Distribution
 - Serves energy to electric consumers
- Transmission
 - Connects large generation to distribution

Generally, all three must operate in harmony to provide electric service



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Different Types of Electric Utilities in Kansas

- Investor Owned Utilities - 6
 - Own and operate transmission, generation and distribution
- Municipal Utilities - 119
 - Primarily provide distribution
 - 60 own some generation
- Rural Electric Cooperatives
 - 2 Generation and Transmission Operators
 - 29 primarily distribution cooperatives
 - Midwest also operates transmission



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Regulation of Kansas Electric Utilities

- Federal Energy Regulatory Commission
 - Transmission and wholesale power sales
 - Investor Owned Utilities and non-RUS funded cooperatives
- Kansas Corporation Commission
 - All aspects
 - Investor Owned Utilities
 - Generation and Transmission cooperatives
 - Some distribution cooperatives
 - All for purposes of sales for resale
 - Some municipal customers



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Regulation of Kansas Electric Utilities (cont)

- Cooperative Boards
 - Elected board regulates most aspects for deregulated electric cooperatives
- City Council or Elected Utility Boards
 - City Governments or elected boards regulate municipal utilities



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Kansas Electric Industry 25 Years Ago

- Transmission Owners (TOs)
 - Vertically Integrated Utilities
 - Generation and Transmission cooperatives
- Transmission Dependent Utilities (TDUs)
 - Distribution cooperatives
 - Municipal utilities
- Generally the same ownership and designations exist today.



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Kansas Electric Industry 25 Years Ago (cont)

- TOs Provided Wholesale Generation to TDUs
 - TOs owned and operated most major generating plants
 - TDUs were captive customers and purchased wholesale electricity from their transmission utilities
 - Wholesale electric rates were set by the FERC (IOUs) or by the KCC (G&T cooperatives)



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Kansas Electric Industry 25 Years Ago (cont)

- TOs Generally Practiced Least Cost Generation Dispatch
 - Cheapest generation used first
- TOs Bought and Sold Generation at Cost with a Small Margin
- TDUs Bought from TOs at a Regulated Cost of Service Price



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Kansas Electric Industry 25 Years Ago (cont)

- TOs Built and Operated Transmission
 - Primarily to connect their generation to their load
 - Interconnections primarily to share reserves and for co-owned generation
 - Reliability through voluntary regional cooperation
 - TOs responsible for transmission congestion on their own system – regardless of cause



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Electric Industry Policy Changes

- Public Utility Regulatory Policy Act of 1978 (PURPA)
 - Created generators that were not owned or operated by TOs or TDUs
 - Qualified Facilities
 - Avoided Cost
 - Purpose was to capture energy efficiency lost in industrial processes and promote renewable generation



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Electric Industry Policy Changes (cont)

- Problems with Implementing PURPA
 - Avoided Cost
 - Easy to define but hard to implement
 - Transmission access
 - Some generation is location dependent
 - TO was not required to build or provide transmission service



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Electric Industry Policy Changes (cont)

- Energy Policy Act of 1992 (EPACT)
 - Created Exempt Wholesale Generators (EWGs)
 - Encourage development of non-utility owned generation
 - Created transmission access complaint process at the FERC
 - Allow non-utility owned generation to obtain transmission service from TOs



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Electric Industry Policy Changes (cont)

- FERC Order 888
 - Required TOs to file open access transmission tariffs
 - Required TOs to provide non-discriminatory transmission access
 - Must provide transmission service to others equal to transmission service for TOs' own use
 - Defined Independent System Operators (ISOs)
 - Entities that oversee transmission usage and implement a regional transmission tariff



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Electric Industry Policy Changes (cont)

- Open Access Problems
 - Pancaked tariffs
 - Contract Path vs. actual power flows
- Regional Tariffs addressed some of the problems
 - Elimination of pancaked transmission tariffs
- ISOs addressed reliability
 - Security coordinators monitored usage of the transmission system
 - Need for authority to maintain reliability.



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Electric Industry Policy Changes (cont)

- FERC Order 2000
 - Increased Emphasis on “Regional System Operators” – RTOs
- FERC Standard Market Design
 - Locational Marginal Pricing
 - Financial transmission rights
 - Subsequent FERC proposal regarding regional state committees
 - FERC proposes delegating some authority to states



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Electric Industry Policy Changes (my opinion)

- Policy Changes Addressed Generation Ownership, Financing and Operation
 - The system 25 years ago worked well
 - It did a good job of dispatching generation and operating the system at a reasonable cost and maintaining reliability
 - But didn't always make the most efficient decisions when constructing generation
- The Challenge
 - Implement the new policies while trying to maintain the things done well in the past



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Regulatory Issues Today

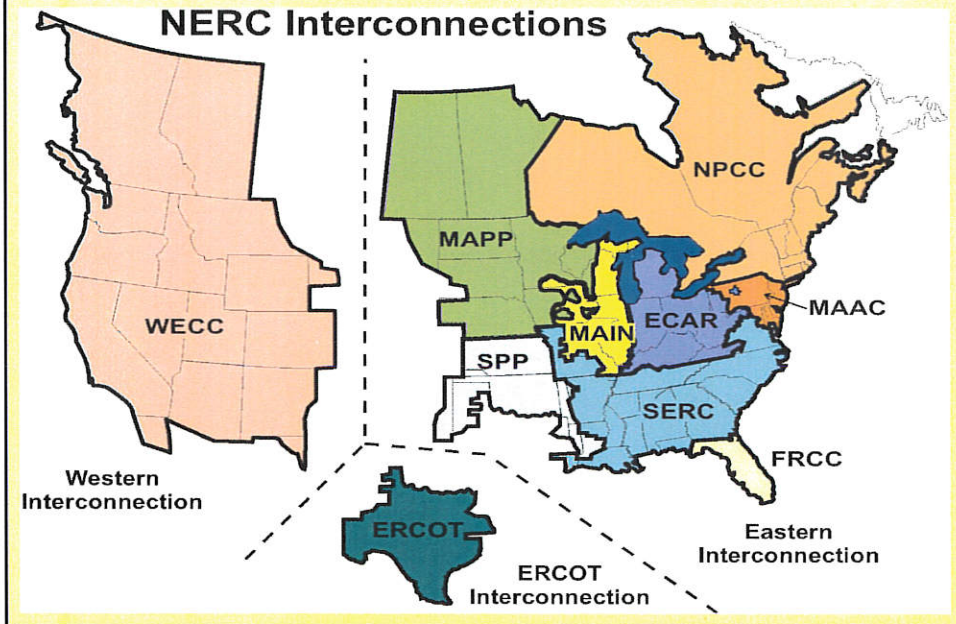
SPP RTO formation



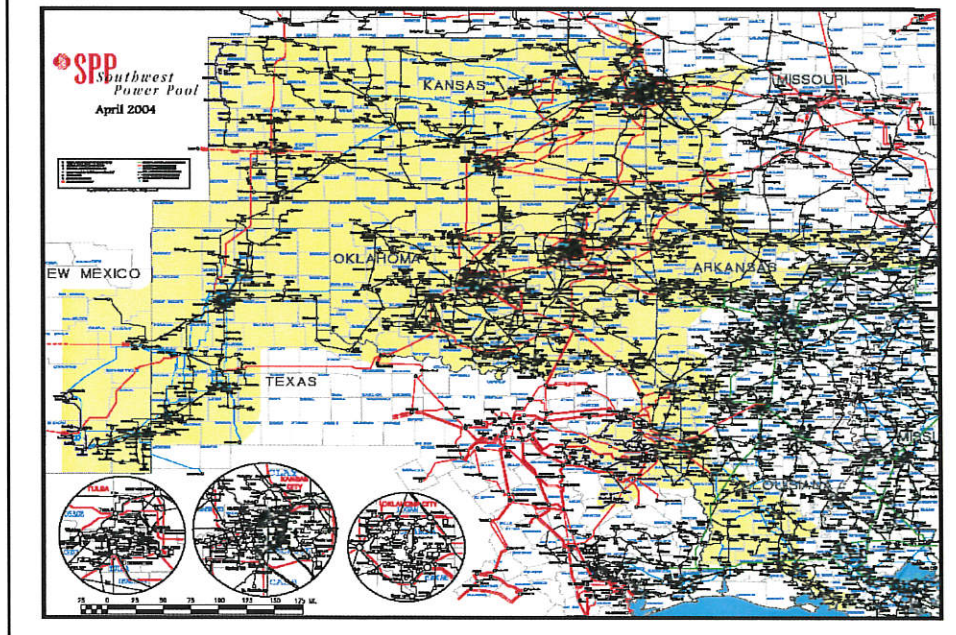
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3 Interconnections/ 10 NERC Regions



SPP Transmission Map



SPP Background

- 1941: Formed to serve defense needs
- 1968: NERC Regional Council
- 1980: Telecommunications network
- 1991: Operating Reserve Sharing
- 1994: Incorporated
- 1997: Security Coordination
- 1998: Tariff Administration
- 2001: Regional Scheduling



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SPP Region

- Members
48
- 2003 Non-Coincident System Peak
40,564 MW
- Generation Capacity
44,110 MW
- Service Area
270,000 sq. mi



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SPP Members

- 14 Investor-Owned Utilities
- 8 Cooperatives
- 7 Municipals
- 2 State Agencies
- 1 Federal Agency
- 3 Independent Power Marketers/ Wholesale Generation
- 13 Marketers



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SPP Region

- All or part of 8 states
- 270,000 square miles of service territory
- \$4.6 billion in transmission gross investment
- 36,800 pole miles of transmission lines
- 4.5 million customers served
- 39.7 gigawatts of peak demand



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SPP Administration

- Little Rock offices
- 125 employees, 142 approved
- \$38M operating, \$16M capital
- \$0.15/MWh transmission svc.
- 24x7 operation
- Full redundancy & backup site



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Current SPP Functions

- Reliability Assessment
- Security Coordination
- Tariff Administration



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Reliability Assessment

- Expected to operate satisfactorily
- Highly dependent upon coordination
- Congestion will worsen, curtailing transactions
- Few transmission additions are currently planned
- As markets develop, transmission will be operated in a different manner



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Security Coordination

- Monitor interconnected network
- Anticipate problems
- Take preemptive action
- Coordinate regional response
- Independent administration



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Tariff Administration

- Provide one-stop shopping
- Consistent rates, terms and conditions
- Regional focus
- Independent administration
- Process > 10,000 requests / month



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FERC Order 2000

- Intended to spur voluntary development of RTOs to promote efficiency, reliability & ensure non-discriminatory transmission service
- RTO primary functions include:
 - Security coordination
 - tariff administration and design
 - congestion management and parallel path flow
 - ancillary services
 - electronic provision of public information concerning transmission systems
 - market monitoring
 - market settlement



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RTO Applications

- Filed request 10/15/03
- Conditional order 2/10/04
- Board approves changes 4/27/04
- Compliance filing 5/3/04
- Comments due 5/24/04
- SPP answers 6/1/04
- FERC approval of SPP RTO 10/4/2004



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FERC Order 2000 Impact on SPP

- Insure access to a real-time balancing market
- Market monitoring
- Provider of last resort of ancillary services



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Market Implementation

- Phase 1
 - MAY - Proxy settlement
 - SEPT - Enhanced Security
 - MAY 04 - Real-time Imbalance Market
- Phase 2
 - Market-Based Congestion Management
- Phase 3
 - Ancillary Services Markets



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Transmission Expansion Funding

- Base Plan Expansion of SPP Transmission for Reliability
 - Many Workshop/Symposiums
 - Regional State Committee (RSC) proposal adopted
- RSC approved cost allocation plan approved by SPP board for FERC filing on January 25, 2005



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KCC Action on SPP RTO

- Participation in the RSC
 - Cost Benefit Task Force
 - Cost Allocation Working Group
- 2 public transmission workshops
 - June 21, 2004 and July 30, 2004
 - Presentations on KCC website
 - <http://www.kcc.state.ks.us/electric/index.htm>
- Generic Investigation
 - KCC Docket # 04-GIME-922-GIE



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ATTACHMENT 2

Westar Energy Presentation: Transmission 101 SPP Energy Imbalance Market

Presenters:

Thomas R. Stuchlik, Executive Director, Transmission Services

Jan 27, 2004

TOPICS

- I. Transmission 101

- II. Proposed Energy Markets in the SPP

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Part I: Transmission 101

PRO FORMA OPEN ACCESS TRANSMISSION TARIFF (OATT)

Non-discriminatory access to Transmission Grid by all qualified customers according to standard terms and conditions.

- Transmission and Ancillary Services rates, and terms and conditions must be approved by FERC.
- Retail Rates include an appropriate subset of the Transmission and Ancillary Services Rates; KCC approves Retail Rates.
- Standard Ancillary Services.
- Point-to-Point (PTP) Service and Network Integration Transmission Service (NITS).
- Open Access Same-time Information System (OASIS) — non-discriminatory access to transmission information by all qualified customers.
- Customers have right to complain and, FERC has right to audit for compliance and investigate for abuse.

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SPP OATT

SPP administers access to its regional grid on behalf of Transmission Owner (TO) members.

- PTP and NITS Service.
- Pro forma “terms & conditions.”
- Pro forma Ancillary Services.
- Provider of Last Resort (POLR).
- Describes ATC/AFC calculation, Transmission Planning, Customer-requested Transmission Upgrades, Revenue Distribution, Loss Compensation, etc.
- License Plate Transmission Rates.
- TO members include Federal and State Power Authorities, Municipals, and Cooperatives.

Available Transfer Capabilities (ATC)/Available Flowgate (AFC) Capabilities PROCESS

- SPP calculates ATC and AFC based on the following information provided by members and other transmission providers:
 - Resource Plan and Load Forecast(s).
 - Generation Outage Information.
 - Transmission Line/Equipment Outage Information.
 - Known transfer capabilities of Transmission Line/Equipment.
 - De-ratings.
 - Data provided by Interconnected Transmission Providers for flowgates in their systems.

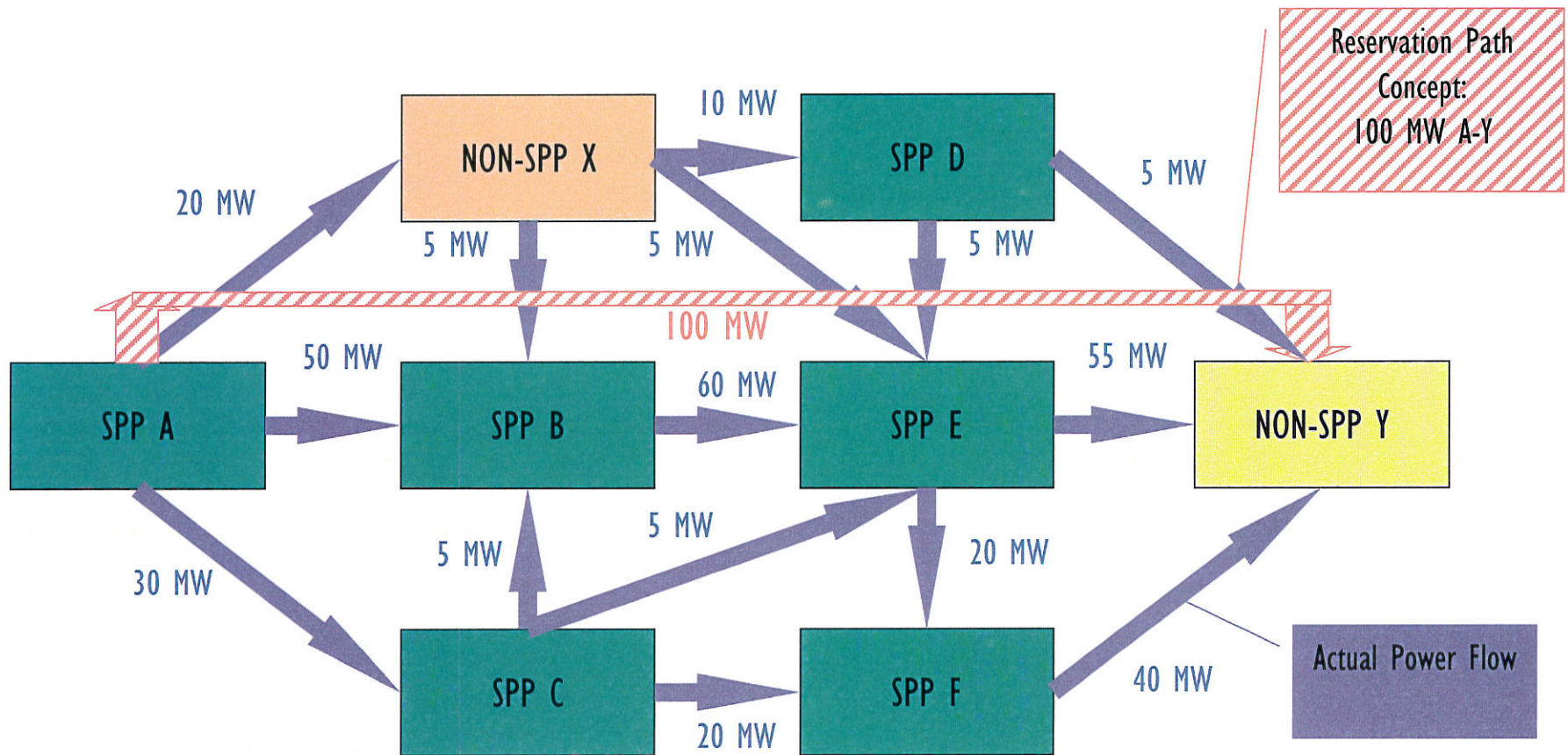
- SPP posts AFC values in its OASIS site.

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TRANSMISSION RIGHT PROCUREMENT PROCESS

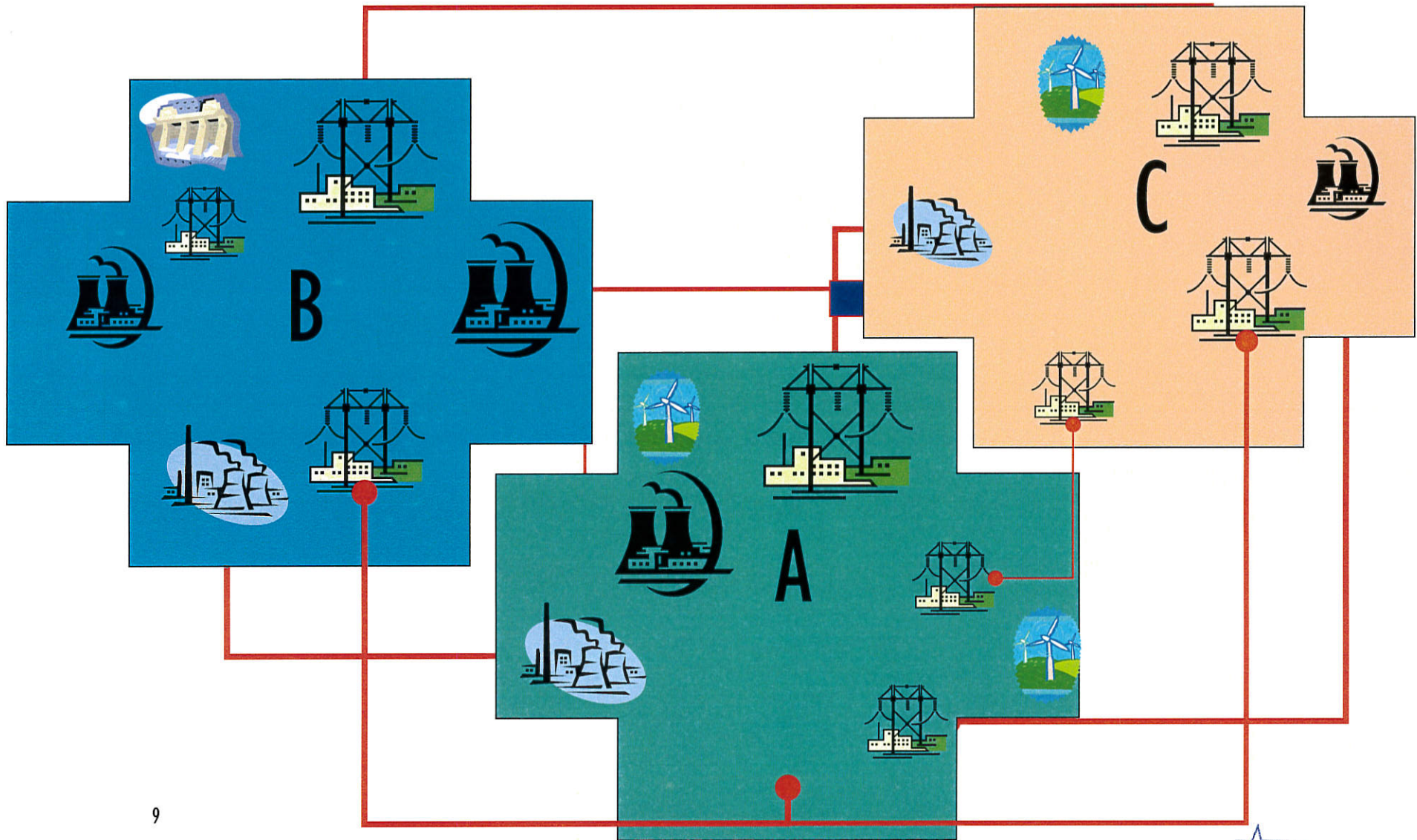
- Transmission Customers (TC) are required to qualify.
- Qualified TCs submit request for PTP service via OASIS, e.g., 50 MWs from KCPL-EES.
- SPP examines AFC on effected flowgates against request.
 - Examines both SPP and other Transmission Providers' flowgates.
- If adequate transmission capacity exists on evaluated flowgate(s), request is approved.
- Customer confirms approved request: a financially binding right to “move” power from KCPL to EES.
 - “Moving” power should be considered in terms of altering generation mix in KCPL and EES: Raising KCPL generation by 50 MW and lowering generation in EES by 50 MW.
- Customer submits tags against confirmed rights.
- SPP verifies tags against right and state of the Transmission grid, approves or denies tags.
- If a tag is approved, customer “moves” power from KCPL to EES.

RESERVATION PATH VS. POWER FLOW



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NETWORK & LOOP FLOWS



01-2

TRANSMISSION SERVICE

- Two basic types of Transmission Service under Pro Forma OATT:
 - Point to Point (PTP).
 - Network Integration (NITS).
- Bilateral Transmission and/or Energy Supply Agreements entered prior to implementation of Pro Forma Tariff (of TOs and SPP) are typically referred to as GFAs (Grandfathered Agreements).
 - Provided executed prior to mid-1996 (Order 888) or prior to SPP OATT implementation.
- Transmission Services under OATT are either Firm or Non-Firm.
- GFA priority may depend on contract language.

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TRANSMISSION SERVICE

- SPP NITS allows the NITS Customer the right to generate power from the Customer's Designated Network Resources (DNR, i.e., Generation Portfolio) for its Load(s) on Firm priority.
- SPP NITS allows the NITS Customer the ability to purchase economy power from any resources (Non-Designated Resources) anywhere within SPP to serve its Load(s) on Non-Firm Priority.
- Transmission Customers taking NITS service under a Transmission Owner's OATT (e.g., AEP OATT) have slightly different restrictions.

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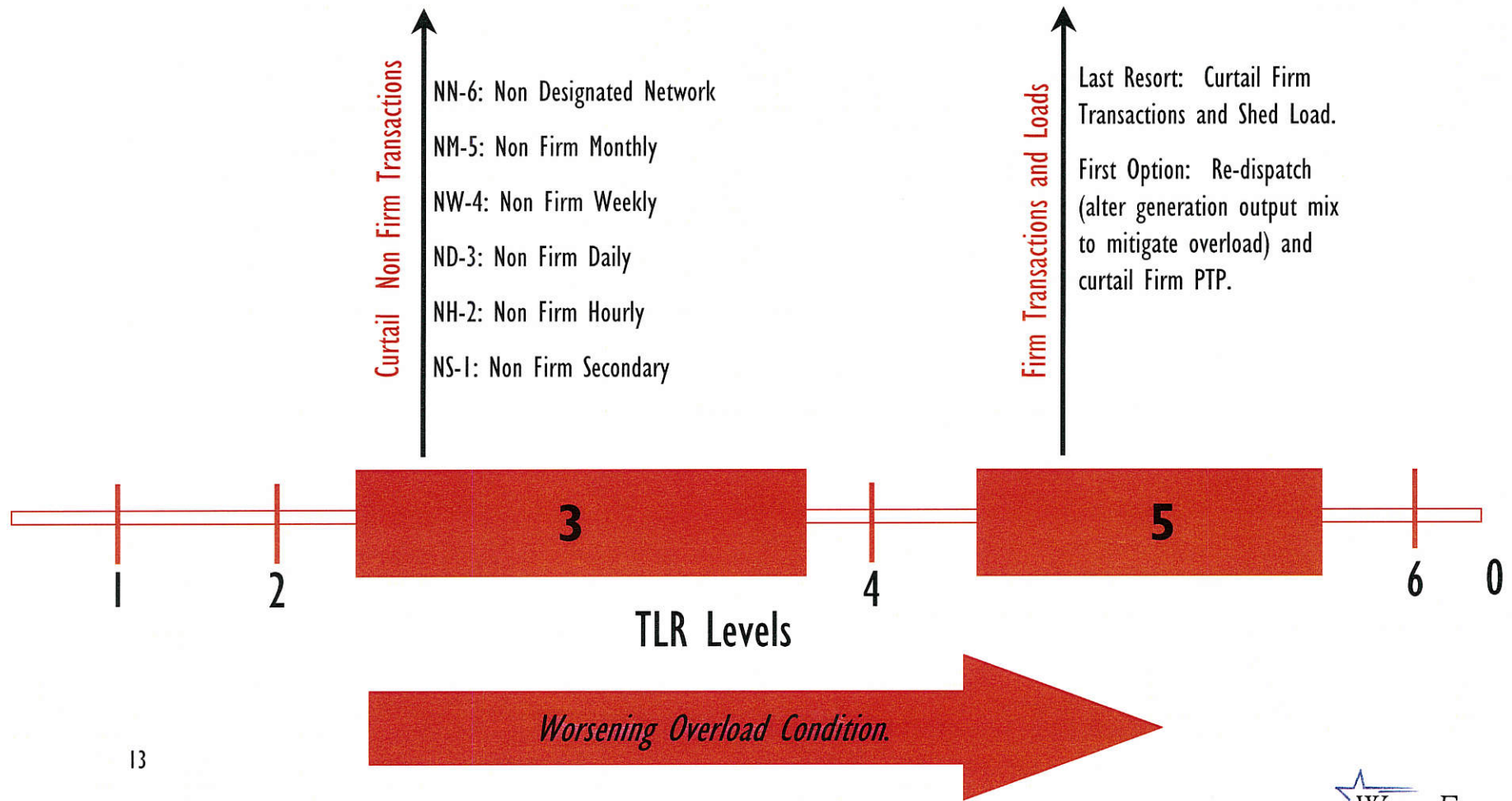
OVERLOAD RELIEF

- Transmission System can become overloaded (i.e., exceed safe operational limits) for a number of reasons:
 - Unexpected outage of Transmission Equipment and/or Generation Plant.
 - Equipment De-rating.
 - Poor AFC/ATC data coordination among neighboring Transmission Providers.
 - Weather conditions.
 - High volume of transactions.
- NERC defined Transmission Loading Relief (TLR) process is used to manage overload conditions.
 - A purely physical, reactive process of managing system problems.
 - NOT an economic management of system problems.
 - Standard Overload Management Tool for most of the U.S. (Areas that do not use any Market-Based Congestion Management Tool).

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TLR LEVELS & PRIORITY OF SERVICE

- System Operators curtail transaction in TLR situations according to the transaction's priority level.



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SEAMS ISSUES

- Simply stated, Seams Issues are created when connected Transmission Providers/Owners willfully or inadvertently affect their neighbor's operations.
- Seams Issues are unavoidable because of the highly interconnected nature of the transmission grid, and the physics of AC power flow.

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ANCILLARY SERVICES

- Schedule 1: Scheduling & Tariff Administration
- Schedule 2: Reactive Supply & Voltage Control
- Schedule 3: Regulation & Frequency Response
- Schedule 4: Energy Imbalance
- Schedule 5: Spinning Reserve
- Schedule 6: Supplemental (Non-Spinning) Reserve
- *Phase I (Energy Imbalance) Market will replace current Schedule 4*

9/1-2

ANCILLARY SERVICES

- **Schedule 1: Scheduling & Tariff Administration**
 - Supports Transmission Provider’s administrative costs, OASIS and Scheduling System maintenance costs
 - MWh scheduled for PTP Customers
 - Monthly Control Area peak used for Network Customers
 - 20 cent cap
 - SPP: Compliments membership assessments for capital projects.
 - Paid by Network and Point-to-Point Customers.
- **Schedule 2: Reactive Supply & Voltage Control**
 - Control Areas provide this service.
 - Cost-based rate filed with FERC.
 - Pass through to Control Area Operator.
 - Paid by Network and Point-to-Point Customers.

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ANCILLARY SERVICES

- **Schedule 3: Regulation & Frequency Response**
 - Control Areas' affiliate generators provide this service.
 - Cost-based rate filed with FERC.
 - Pass through to Control Area Operator.
 - Generators on Automatic Generation Control (AGC) continuously alter output to minimize Control Area's ACE.
 - LSE Options: self-provide, bilateral purchases, or purchase from SPP.
- **Schedule 4: Energy Imbalance**
 - Transmission Owner's affiliate generators provide this service.
 - Cost-based rate filed with FERC.
 - Typically: Incremental Cost of production + 10% or 90% of Decremental Cost.
 - Many Transmission Owners have a \$100 floor for supplying Imbalance Energy.
 - Pass through to Transmission Owner.
 - Paid by Network Customers and Load Serving Entities using PTP transactions.
- **Phase I (Energy Imbalance) Market will replace current Schedule 4.**

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ANCILLARY SERVICES

- Schedule 5: Spinning Reserve & Schedule 6: Supplemental Reserve
 - Transmission Owner’s affiliate generators provide this service.
 - Cost-based rate filed with FERC.
 - Reserve requirement(s) set by NERC and/or Regional Reliability Council Policies.
 - Pass through to Transmission Owner.
 - LSE Options: self-provide, bilateral purchases, or purchase from SPP.
- Provider of Last Resort (POLR) Function
 - Order 888 and 2000 requirement
 - Transmission Provider (SPP) must arrange for Ancillary Services 3-6 if not self supplied by Transmission Customer.
 - SPP procures from host Control Area
 - Host Transmission Owner’s filed rates
 - Pass-through

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Part II:
Proposed Energy Markets in the SPP

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THREE PHASES OF SPP ENERGY MARKETS DESIGN

- Phase I: Imbalance Energy Market
 - Increment I: Granular scheduling, load & resource meters, financially non-binding Imbalance Energy invoicing
 - Increment II: Resource/Ancillary Services Plans, Balancing function driven by SPP RTO_SS.¹
 - Increment III: Financially binding Imbalance Energy Market live.
- Phase II: Congestion Management based on: Day Ahead and Real-time Energy markets, and Financial Transmission Rights.
- Phase III: Ancillary Services market(s).

¹Regional Transmission Organization Scheduling System

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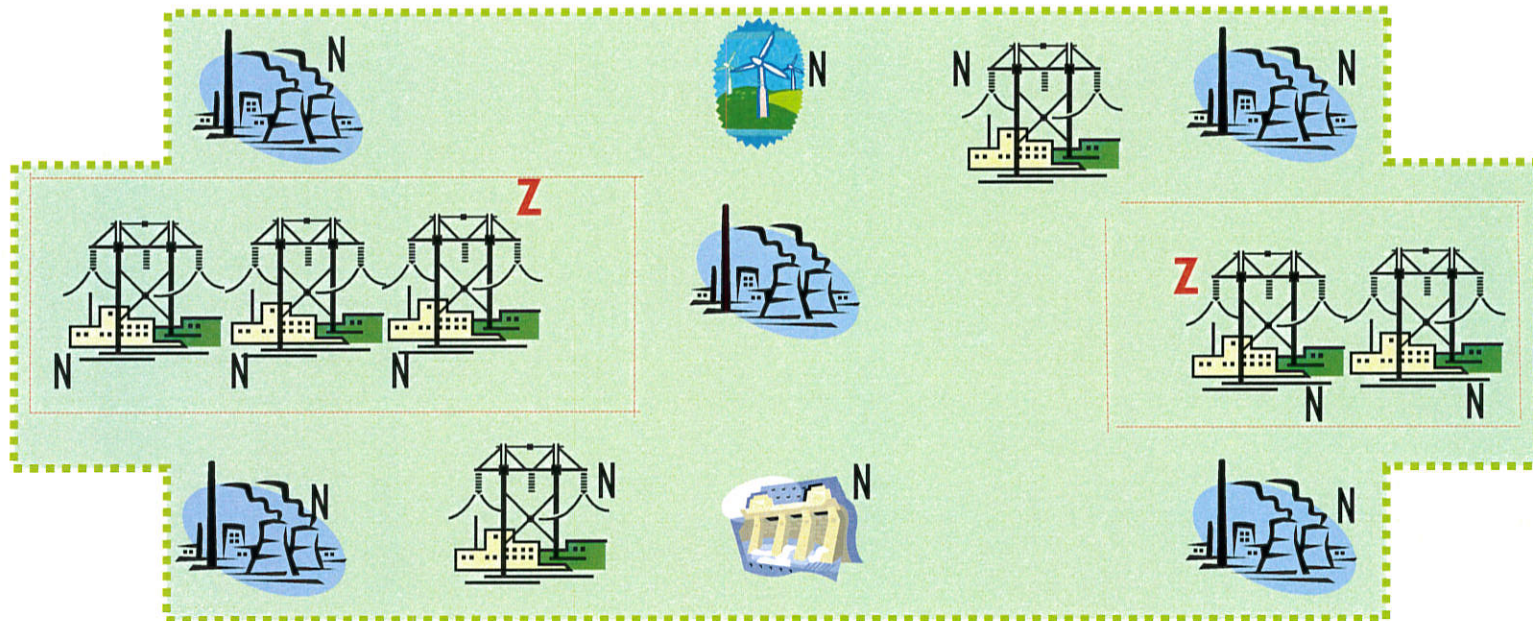
PHASE I: THE ENERGY IMBALANCE MARKET

High Level Technical Concepts

- NOT a Capacity Market.
- Real time, dispatched in 15 minute increment.
- Location specific (Zonal or Nodal) settlement for Load.
- Nodal Settlement for Resources.
- Security Constrained Economic Dispatch of Markets Bids/Offers only.
- Intra SPP Inadvertent Energy: Managed financially as Imbalance Energy.
- A combination of TLR and limited Generation Re-dispatch to be used to manage system overloads.
- Generator Owners perform unit commitment according to transmission rights.
- Generation dispatch performed by Owners and/or Control Area Operator and/or SPP.

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IMBALANCE MARKET: NODAL AND ZONAL PRICING



Price is Local Imbalance Price.

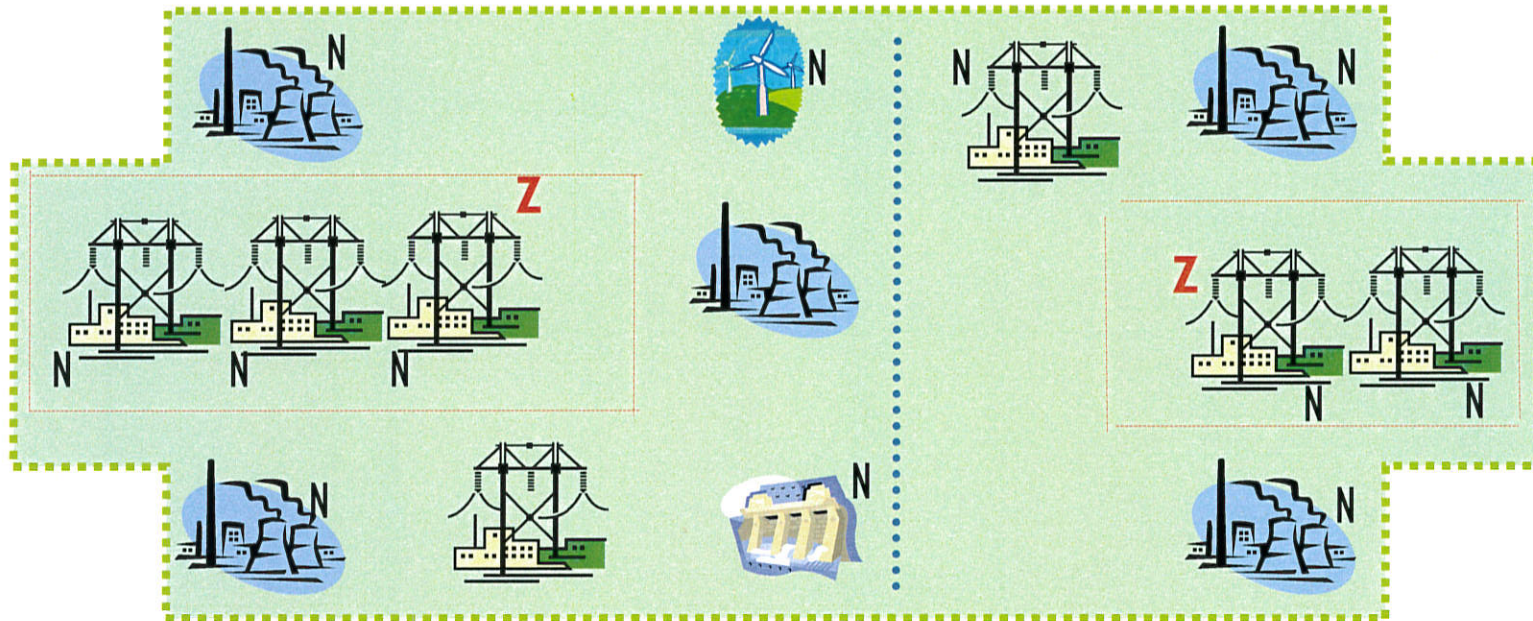
LIP of Resource: Cost of producing the next MW at the Resource Bus (according to offer to EIS market, if offered).

LIP of Load: Cost of serving (producing and delivering) the next MW at the load node bus (if nodal), or a calculated aggregate of the node LIPs for zones.

If there is no constraint in the system, the LIP across the entire footprint should be same (minor differential may result from transmission losses etc).

2-2

IMBALANCE MARKET: NODAL AND ZONAL PRICING



Assumption: Generation is relatively cheaper in Western part compared to Eastern part.

If a transmission constraint occurs between West and East:

TLR process will curtail transactions regardless of economics.

EIS market process will try to find the cheapest source of power to serve load in East when import of cheaper power from the West is longer viable (due to constraint).

Constraint will result in different prices in East and West.

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OTHER MARKET DEVELOPMENT RELATED ACTIVITES

- Feasibility of a Single SPP Control Area.
- Development of Market Monitoring and Mitigation Protocols.
- Development of a SPP-internal Market Monitoring Unit.
- Cost/Benefit Study.
- Market Participant Preparation.
- Software and Model development.