

# Alaska Intertie Agreement



History

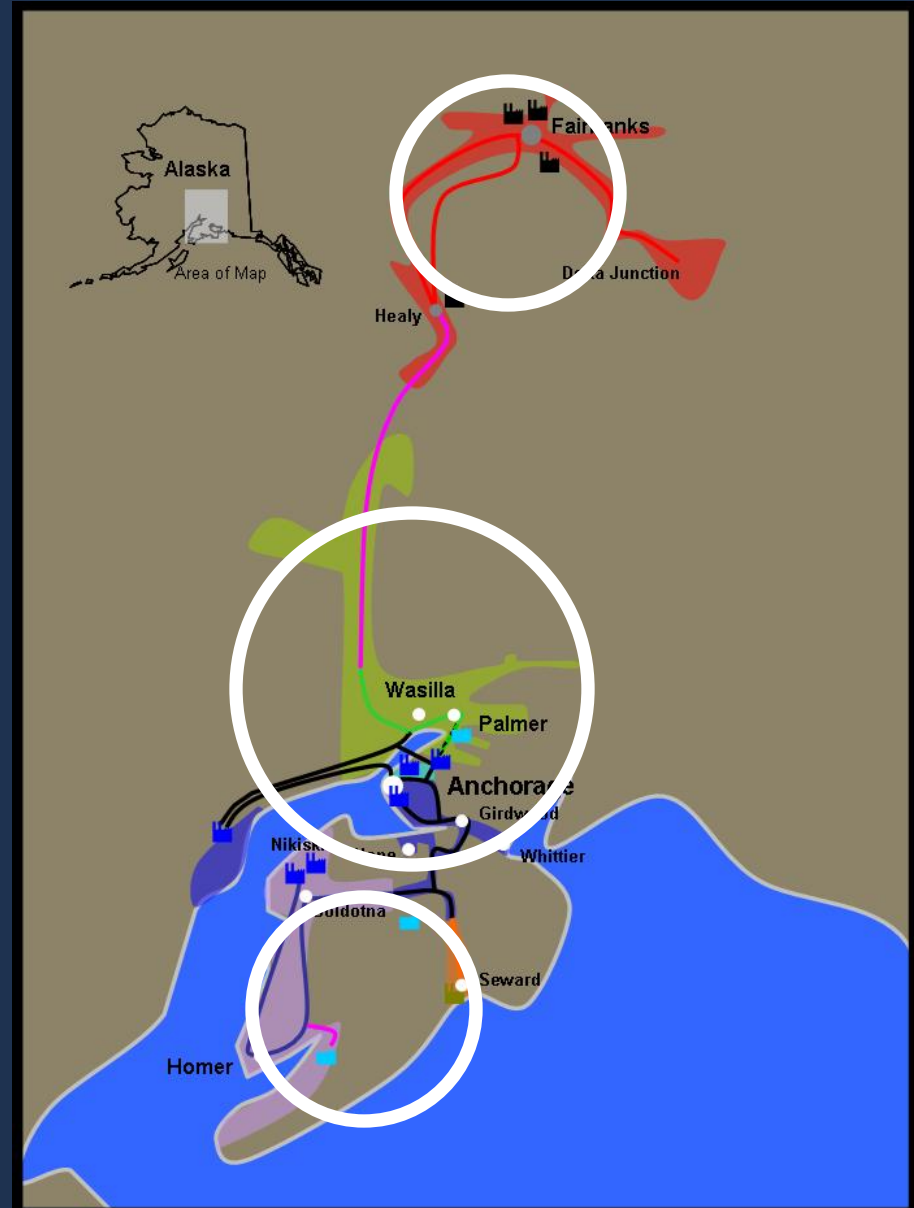
# History

- Original Agreement December 23<sup>rd</sup> 1985
- Participants
  - Chugach Electric Association, Inc.
  - Alaska Power Authority
  - Municipal Light and Power
  - Golden Valley Electric Association, Inc.
  - Fairbanks Municipal Utilities System
  - Alaska Electric Generation and Transmission (Matanuska and Homer Electric Associations)



# Railbelt

Three islands of supply and demand

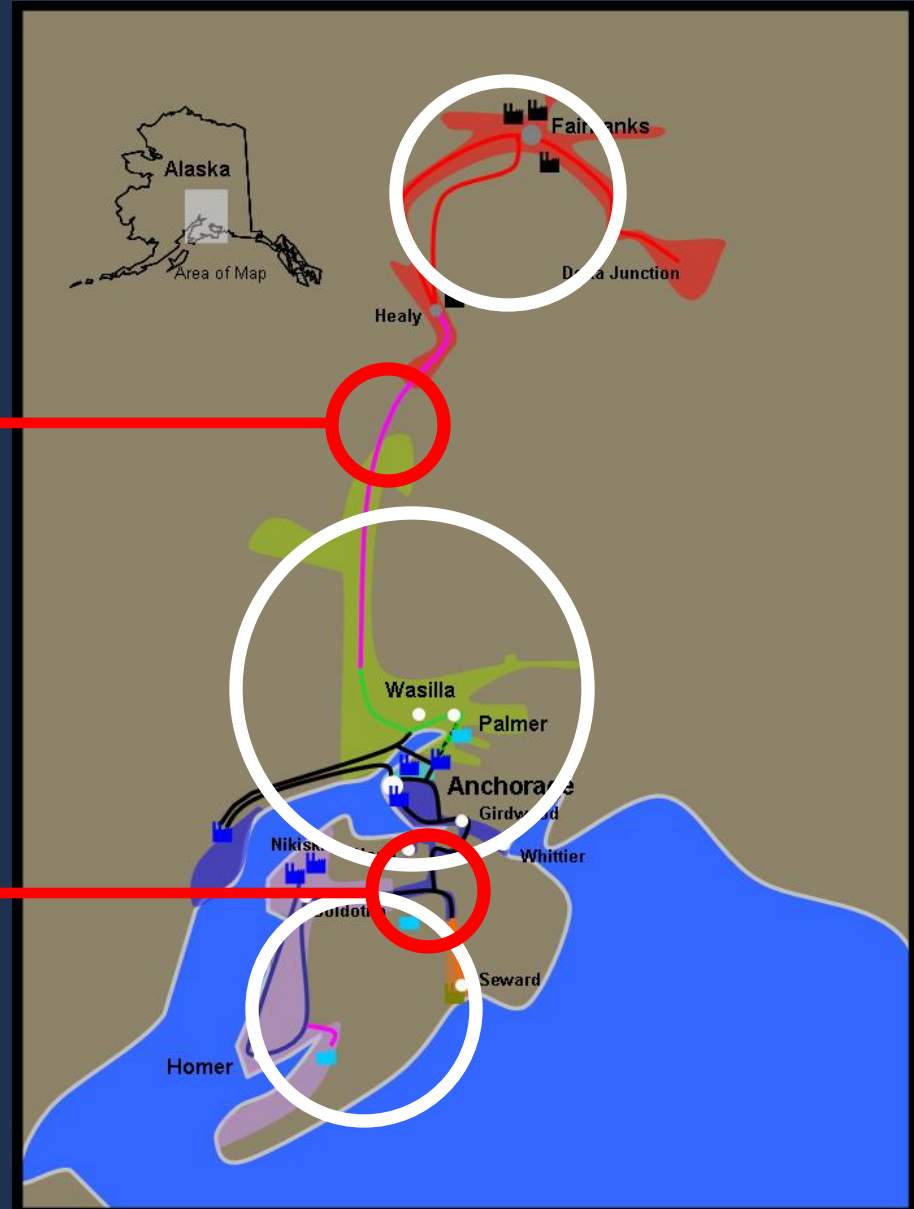


# Railbelt

## Limited Transmission Capability

Alaska Intertie  
138kV  
70 MW Capacity

Chugach  
Southern 115 kV  
75 MW Capacity



# System Operation

## How do we make it work?

**GVEA control area**

**Chugach control area**

**ML&P control area**

### OPERATING Rules

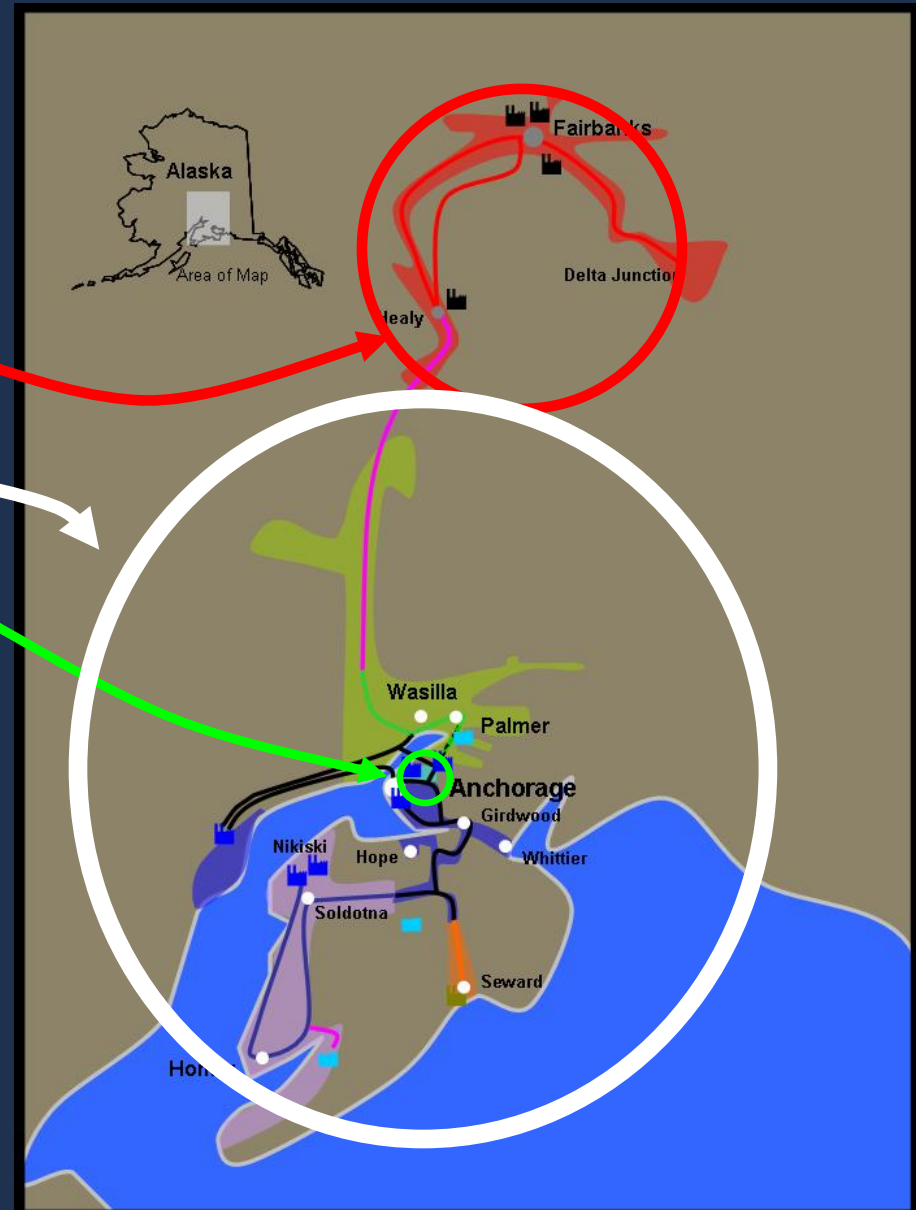
Systems Control

System Security

Emergency Operations

Operating Personnel

Operations Planning



# Tie Line Bias

- $ACE = (N_{Ia} - N_{Is}) - 10B(F_a - F_s) - I_{me}$
- $N_{Ia}$  = Algebraic sum of actual flows
- $N_{Is}$  = Algebraic sum of scheduled flows
- $B$  = Frequency bias setting (7.5 MW/.1Hz)
- $F_a$  = Actual frequency
- $F_s$  = Scheduled frequency
- $I_{me}$  = meter correction factor (very small)

# System Disturbance



# Generation Response

CEA Generation Summary			SYSTEM				SPIN				Last ED Time: 11:16:24 AM				
TIME: 11:16:24			Kenai Export: 51	FREQ: ANC: 59.986		Hydro Spin: 23.4		CEA SILOS: 0.0		Sched					
Tie Limit: 67			AGC: CONTROL		Kenai: 59.984		Thermal Spin: 6.8		Armed						
ISLAND TYPE: 1. NO ISLAND			ALARM: 11:16:24		ACE: -0.9		Total Spin: 44.3		Total SILOS: 14.0						
UNIT No.	UNIT NAME	CONTROL CONTROL	CONTROL MODE	OPER MODE	REGUL MODE	ACTUAL GEN	BLOCK	DES GEN	BASE POINT	ECON LO	ECON HI	REG LO	REG HI	ACTUAL LAMBDA	SPINNING RESERVE
1	Beluga 1	Rem	■ ECON	Normal	REG	14.2	↑	14.6	14.2	4	16	4	17.1	55.70	2.7
2	Beluga 2	Rem	■ ECON	Normal	REG	14.0	↑	14.6	14.2	4	16	4	17.1	55.56	3.1
3	Beluga 3	Rem	■ ECON	Normal	REG/ASSIST	56.0	Blk	56.0	56.0	4	55	4	57.2	46.13	0.0
4	Beluga 5	Rem	■ ECON	Normal	REG/ASSIST	56.1	Blk	56.1	56.1	4	54	4	56.3	49.61	0.0
5	Beluga 6	Loc	□ OFF/UNA	Normal	OFF	0.7	1	0.0	0.0	4	64	4	67.3	0.00	0.0
6	Beluga 7	Rem	■ ECON	Normal	ASSIST	65.4	Blk	65.4	65.4	2	64	2	68.0	34.16	0.0
7	Beluga 8	Rem	■ MANUAL	Normal	OFF	19.7		19.7	19.7	0	44	0	45.0	30.50	0.0
8	IGT 1	Rem	□ STANDBY	Normal	OFF	0.0		0.0	0.0	0	13	0	13.9	0.00	0.0
9	IGT 2	Rem	□ STANDBY	Normal	OFF	0.0		0.0	0.0	0	13	0	13.9	0.00	0.0
10	IGT 3	Rem	□ STANDBY	Normal	OFF	0.0		0.0	0.0	0	16	0	16.1	0.00	0.0
11	BLPP 2	Rem	□ STANDBY	Normal	OFF	-0.0		0.0	0.0	0	17	0	17.4	0.00	0.0
12	BLPP 3	Loc	□ OFF/UNA	Normal	OFF	-0.0		0.0	0.0	0	22	0	23.0	0.00	0.0
13	BLPP 4	Rem	□ STANDBY	Normal	OFF	-0.0		0.0	0.0	20	21	0	22.3	0.00	0.0
14	Cooper 1	Rem	■ FIXED	Normal	ASSIST	9.4		10.0	10.0	0	10	0	10.4	0.00	1.0
15	Cooper 2	Rem	■ FIXED	Normal	ASSIST	10.0		10.0	10.0	0	10	0	10.4	0.00	0.4
16	Bradley 1	Rem	■ FIXED	Normal	ASSIST	40.0		40.0	40.0	0	0	0	60.0	92.30	7.5
17	Bradley 2	Rem	■ FIXED	Normal	ASSIST	29.9		30.0	30.0	0	0	0	60.0	89.21	7.5
18	Nikiski 1	Rem	■ ECON	Normal	ASSIST	35.3	Blk	35.3	35.3	5	5	5	36.4	11.09	0.0
19		Loc	□ MANUAL	Normal	OFF			0.0	0.0	0	0	0	0.0	0.00	0.0
20		Loc	□ MANUAL	Normal	OFF			0.0	0.0	0	0	0	0.0	0.00	0.0

# What's Happening?

- October 16<sup>th</sup>, 2006 AEA notified participants of termination of Intertie agreement.
- Termination date October 16<sup>th</sup> 2010.



# Agreement Highlights

- Adoption of NERC based operating standards
- Reserve and system spin requirements
- Capacity Rights
- Operations and Maintenance
- Budgets
- Asset Administration



# New Agreement Issues

- Participants in new Agreement
  - Alaska Energy Authority
  - Chugach Electric Association
  - Municipal Light and Power
  - Matanuska Electric Association
  - Homer Electric Association
  - City of Seward
  - Golden Valley Electric Association
  - *Doyon Utilities*
- Minimum Intertie Transfer Capability Rights
- Replacement and Re-building Funds
- Adoption of updated operating rules
  - Reserves
  - Voltage control
  - Communications
  - Generation Control
  - System Protection and Security
- Updated Reserve and system spin requirements
- Enforcement issues surrounding system operations



# New Agreement Timeline

- July - Began meetings
- September
  - Adopt updated operating standards
  - Extension of termination and adoption of standards
- Continue work on new Agreement

# Tower 195

8/15/2010

