PI ESRI in Peak's Control Room
NASPI 2015

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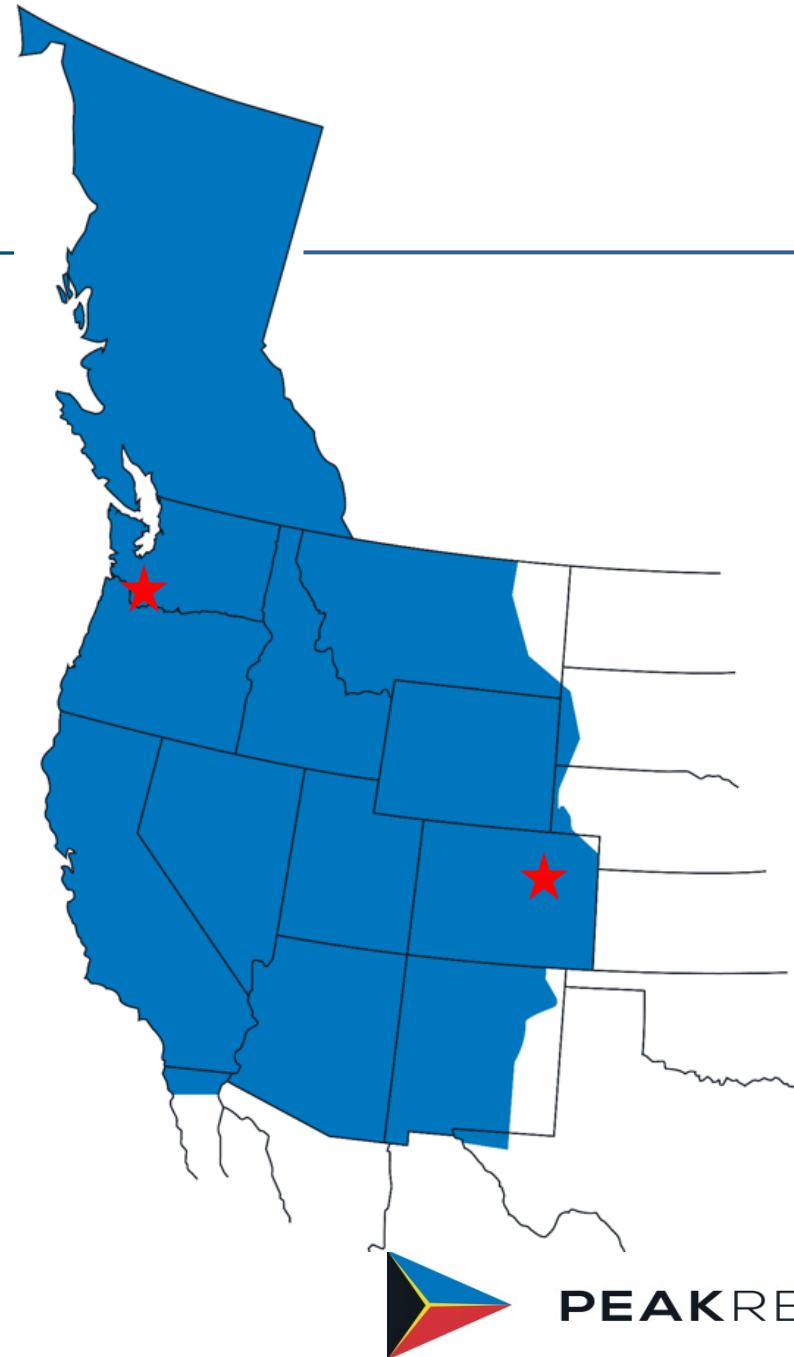
PEAKRELIABILITY
assuring the wide area view

Topics

- Introduction
- Problem definition
- Concepts
- Technology
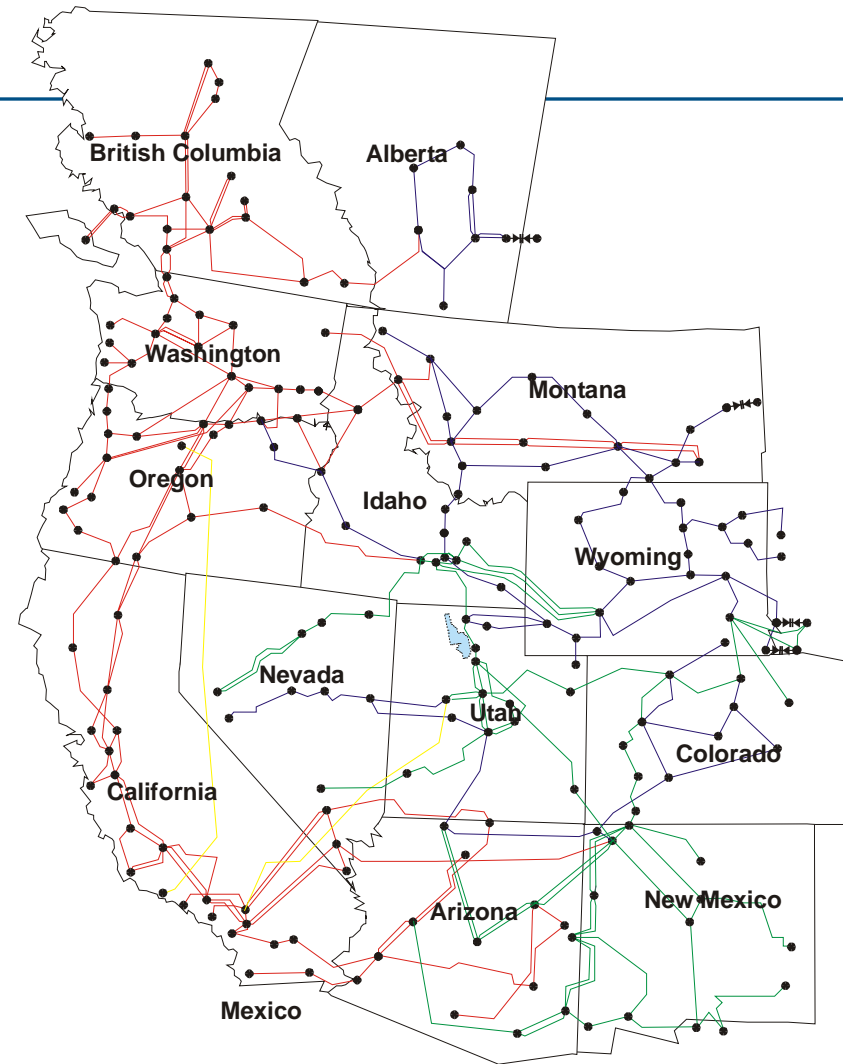- Conclusion

PEAKRELIABILITY

Introduction

- **Founded:** Jan 1, 2014
  - WECC RC est. Jan 1, 2009
  - CMRC, PNRC, RDRC prior
- **Employees:** 151
- **Members:** 129
- **Offices:**
  - Vancouver, WA - HQ
  - Loveland, CO
- **Registered Functions**
  - Reliability Coordinator (RC)
  - Interchange Authority (IA)

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Introduction

- 14 Western States, 1 Canadian Province, and Northern Baja California, Mexico
  - 78 million people
- 170,000 MW peak load
- 38 Balancing Authorities (BAs)
- 56 Transmission Operators (TOPs)
- DC Ties to Eastern Interconnection

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Problem Definition

- Platform integration
- PMU data -> information -> Situational Awareness
- PMU availability/quality
- PMU logs & alarms

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Problem Definition

Flood of data

Inadequate screens

Data interaction

Lack of visualization strategy

Lack of alarming strategy

Results in:
Lots of screens not focused on business
Not enough information
Nuisance and stale alarms
No human factor design

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Concepts

1. Trends, charts, numbers, and/or tables
2. Ease of interpretation
3. Dashboard/overview displays
4. Accessing more detail
5. Color / contrast / highlighting
6. Alarms
7. Relationship between data
8. Contouring
9. Geographic overviews/map

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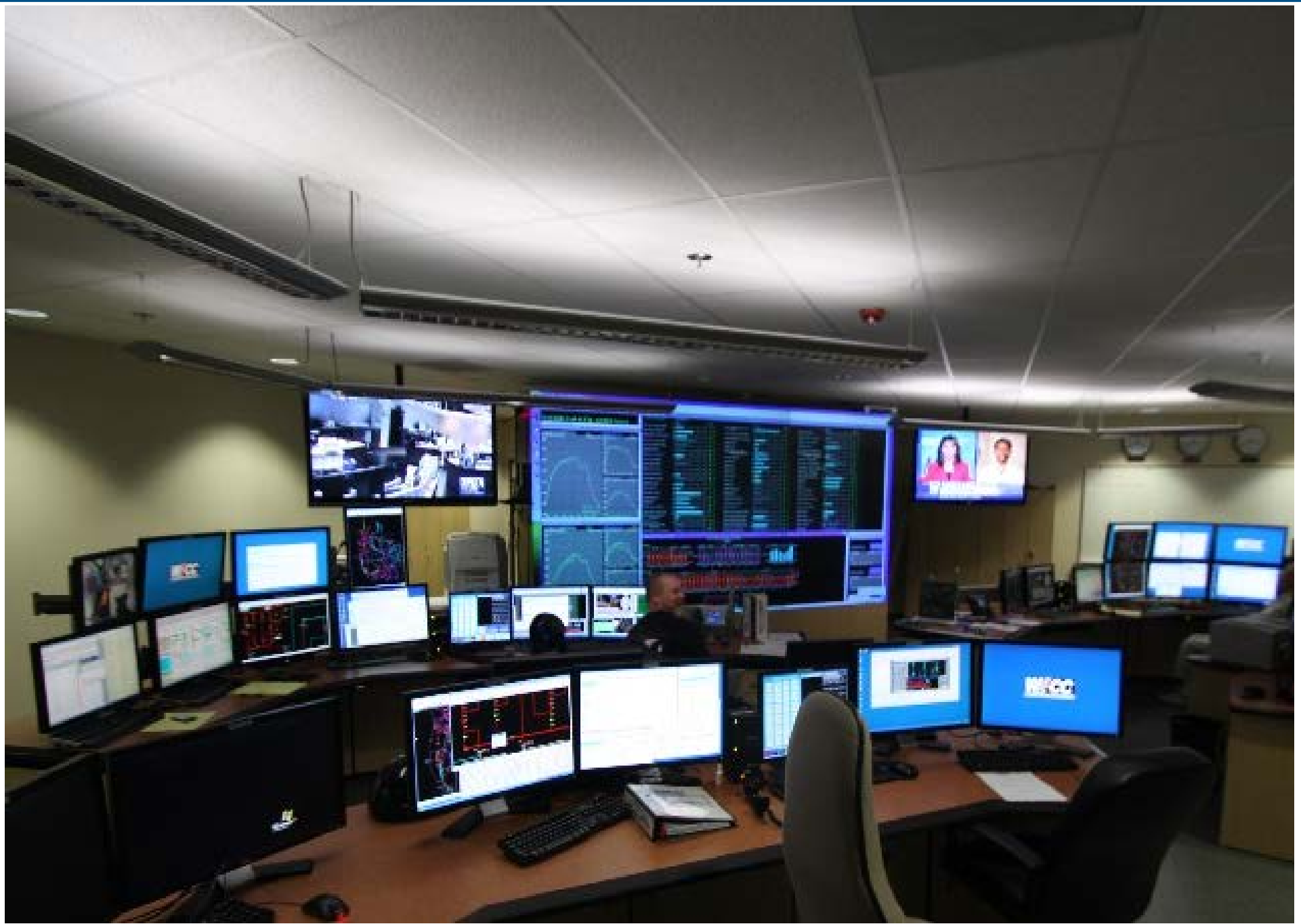
Concepts

- The goal dynamically changes
- Focus on presenting "critical" data in perspective
  - Information, not data
- Adequate level of detail

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Concepts (Peak specific)

- Upcoming system insights
- Voltage Stability Analysis
- Transient Stability Analysis
- E-Tagging / curtailments
- IROL
- Platform & dashboard oriented project
- No alarm management within project

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Technology

- Peak's use cases
  - Operational Assessment Overview
  - Frequency components (ACE/DCS/etc)
  - Restoration overlays
  - Remedial Action Schemes
  - Phase shifting impacts

- Proof of concept

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Technology

- Currently a mixture of tools used in the control room
  - EMS – Web FG Displays (Overviews / Alarms / Advanced apps)
  - PI ProcessBook – AGC /ACE / Other
  - Other applications/displays
  - Cable News
  - Security cameras
  - NOAA website

- Ease of access to real time and historical data

- Technology will meet both current needs and future growth

- Ability to mix geospatial, tabular, graphs in single display

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Demo 1

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Technology

- PRSP – CRS Tasks
  - Proof of concept
  - Manage operations dashboard
  - Manage GIS data
  - Develop GIS map
  - PI/PI-AF work
  - Quality assurance
  - Implement & support

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Demo 2

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Conclusion

- Leverage PRSP grant
- Turn data into information
- Scalable system critical for wide area view
- Value in enterprise platform

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