

NASPI Control Room Solutions Task Team Monthly Meeting

**Presenters: Mike Cassiadoro & Jim Kleitsch
August 16, 2017**



Agenda

- I. Introductions
- II. Review Status of CRSTT Work Products
 - Focus Area Documents
 - Video Event Files
 - Use Case Documents
- III. Discuss strategy for completing use case papers
- IV. Provide tour of new NASPI website
- V. Discuss goals for Sept. 2017 NASPI WG Mtg. for NASPI face to face meeting
- VI. Adjourn

Focus Area Documents

- 1. System Islanding Detection and Blackstart Restoration –Posted in June 2015**
 - (Kleitsch –ATC, Cassiadoro –TRS)
- 2. Using Synchrophasor Data for Voltage Stability Assessment –Posted in Nov. 2015**
 - (Farantatos –EPRI, Vaiman –V&R Energy)
- 3. Using Synchrophasor Data for Phase Angle Monitoring –Posted in May 2016**
 - (Cassiadoro –TRS, Nuthalapati -ERCOT)
- 4. Enhanced State Estimation Survey –Preliminary responses received, more analysis needed.**
 - (Vaiman –V&R Energy, Kleitsch –ATC)
- 5. Oscillation Detection**
 - (Nuthalapati –Peak, Dyer –EPG, Blevins and Rjagopalan –ERCOT, Patel -EPRI)
- 6. Determining Disturbance Locations**
 - (Dyer –EPG, Zweigle –SEL Inc., Cassiadoro –TRS)
- 7. Using Synchrophasor Data to Monitor Reactive Power Balancing**
 - (Cassiadoro -TRS, SCE –A.J, Peak RC –Zhang, Vaiman –V&R Energy)

Video Event Files

- Objective: continue to expand video library of events to demonstrate the value of synchrophasor data when analyzing disturbances

Control Room Solutions Task Team

Contacts

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Our mission

The NASPI Control Room Solution Task Team's mission is to work collectively with other NASPI task teams to advance the use of real-time synchrophasor applications for the purpose of improving control room operations and grid reliability. This team will utilize its experience and regional diversity to provide advice, direction, support and guidance to NASPI stakeholders and other organizations involved in the development and implementation of real-time synchrophasor applications.

Videos

Title	Description
Video 13	Illustration 4 of Phase Angle Alarming Using Synchrophasor Data
Video 12	Illustration 3 of Phase Angle Alarming Using Synchrophasor Data
Video 11	Illustration 2 of Phase Angle Alarming Using Synchrophasor Data
Video 10	Illustration 1 of Phase Angle Alarming Using Synchrophasor Data
Video 9	Please be patient with the download, the video is very large. This video captures the actual synchronization of a large generator to the electric grid. The windows in the visualization tool capture frequency, output power, voltage angle, and voltage magnitude of the generator and at a reference point on the electric grid.

Meetings

CRSTT Conference Call
Apr 19 2017

Meeting Archive

[Control Room Solutions Task Team Conference Call](#)
Feb 15 2017

[Cancelled - Control Room Solutions Task Team Conference Call](#)
Jan 25 2017

[Control Room Solutions Task Team Conference Call](#)
Nov 16 2016

[Control Room Solutions Task Team Conference Call](#)
Sep 21 2016

[Control Room Solutions Task Team Conference Call](#)
Aug 17 2016

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Use Case Documents

Event ID	Event	Event Category	Entities Involved	Event Description	Extended Description in Related NASPI Technical Paper	Safety Impact	Reliability Impact	Budgetary Impact
TE02	Failing potential transformer	Transmission Equipment	ATC	Abnormal voltage signature found while reviewing PMU data led to discovery of a failing potential transformer which was subsequently isolated and replaced.	p.38	The utility avoided safety risk to personnel that might have been in close proximity to the PT during its failure.		Utility avoided costs associated with customer minutes of interruption that would have resulted from the potential transformer's failure had the condition not been identified and a mobile transformer placed in service to facilitate the outages necessary for its replacement.
TE03	Loose connections in potential circuits	Transmission Equipment	OG&E	Fluctuations observed in positive sequence voltage data collected from PMUs led to discovery of a loose fuse connection in a CCVT safety switch. PMU data has been used in a similar fashion to reveal faulty terminations, animal-damaged conductor and contact corrosion.	p.40			Utility avoided costs associated with equipment damage and customer minutes of interruption that might have resulted had the issues not been addressed.
TE04	Failing voltage transformer	Transmission Equipment	Dominion	Sporadic voltage dips and fluctuations observed on a 500 kV line led to discovery of a failing CCVT which was subsequently isolated prior to its imminent failure.	p.42	The utility avoided safety risk to personnel that might have been in close proximity to the CCVT during its imminent failure.		Utility avoided costs associated with equipment damage that might have resulted from the CCVT's failure.
TE05	Identifying 69 kV arrester failure	Transmission Equipment	ATC	The details of a 69kV customer impact event were identified within two minutes by control room engineers reviewing PMU data. The fault could not be observed with SCADA data.	p.44		Utility able to identify and isolate the failed lightning arrester shortly after relay operation occurred.	

- **Develop 1-2 page summary docs to educate end users.**
- **Expand effort to other use cases once format has been agreed upon.**

NASPI Website Tour

CRSTT completed use cases:

<https://www.naspi.org/crstt>

Documents

Title	Description
Use Case: GEN-03 – Automatic Voltage Regulator (AVR) Malfunction	NYISO System Operators observed transient voltage oscillations in Supervisory Control and Data Acquisition (SCADA) data. The oscillations lasted for three minutes and appeared on many of the western New York 345 kV busses.
Use Case: GEN-05 – Nuclear Plant Voltage Oscillations	In 2011, the Dominion System Operator requested a nuclear power plant to reduce its terminal voltage by 3 kV during light load conditions.
PMU versus SCADA Video Events Summary	
EPG Synchrophasor Data File Format (.CSV)	
EPG's Template	

NASPI Work Group Meeting – CRSTT Breakout Session

Call participants to discuss agenda for CRSTT breakout session at September 26-27, Springfield, MA, 2017 NASPI Work Group meeting.

CRSTT – Primary Contacts

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Next NASPI WG Meeting: September 26-27, 2017 in Springfield, MA. If you plan on attending please [register](#) for the early bird discount.