Final Notes OC Approved – June 3, 2015

OPERATING COMMITTEE
April 1, 2015 – 10:00 AM – 5:00 PM
NWPP Offices – 7505 N.E. Ambassador Place, Suite R –- Portland, Oregon
Portland/Vancouver Room

The meeting agenda and attendance list are attached as Attachments #1 and #2, respectively.

1. **Introductions, Arrangements, and Agenda Changes** — Greg Travis (IPCO), Chair

   Jerry Rust announced that a quorum was established with 22 of 27 members represented.

2. **Accept Meeting Notes – January 7, 2015** — Don Badley, NWPP

   The Operating Committee (OC) accepted the January 7, 2015 meeting notes with one abstention.

   Raj Hundal raised a question about recording votes and including this information in the meeting notes. This led to a discussion of voting procedures and, specifically, Roll Call votes.
   Raj recommended that every vote be a Roll Call vote.

3. **Action Items from January 7, 2015 Meeting – Status Review** — Don Badley, NWPP

   - Don Badley will distribute Energy Emergency Plan prior to April 2015 OC meeting with request to review for content, participation, and decide on need for simulation. *Agenda Item 7.*
   - Mike MacDougall, Jim Farrar, and Scott Kinney will ask the MC group to provide the OC with information about who (real-time operations, merchant, operations planning, etc.) will use these tools and an estimate of the cost for care and feeding of the tools. *Add agenda item to next OC to ask question about where the MC tools should reside. Agenda Item 8.*
   - Don Badley will solicit for additional changes to the map with a request to receive changes back by end of February. *Agenda Item 9.*
   - Don Badley will distribute the URL to locate and access NERC's Reliability Guidelines. *Complete.*
   - NWPP Staff will remove Firm For The Hour policy from NWPP documents and website. *Complete.*
   - NWPP Staff will come prepared with proposed 2016 meetings dates taking in consideration the known activities for 2016 for both WECC and NERC. *The OC to come prepared to address future meeting dates in 2016, and should there be quarterly meetings, semi-annual meetings, etc. Agenda Item 16.*

4. **NWPP Corporation Update** — Jerry Rust, NWPP

   a. Forecast of Expenditures for 2014-15 – Status report
   Current expenditures are underrunning the estimates by about $13k.

   b. 2015-2016 Forecast of Expenditures – Approval

Jerry Rust used a PowerPoint presentation to explain the expenditures forecasted bot the 2015-16 Operating Year; refer to Attachment #3. Jerry commented that this forecast results in a 13% reduction in OC expenditures. Adding that no member is expected to see an increase for expenditures related to OC activities.

Keith Morisette motioned to approve the Forecast of Expenditures for 2015-16 and Derek Denniston seconded the motion. The motion carried, unanimously.

c. E-learning – Update

Jerry Rust stated that the NWPP Corporation has delivered about 3300 continuing education hours (CEH) to members of the NWPP.

Action item: Staff will provide a list of current e-learning training courses, those in the process of being produced, and those that will be coming in from other organizations.

5. Current Operations All

ChaRee DiFabio highlighted the upcoming NWPP-APDA System Dispatcher meeting in Spokane, on May 13-15, 2015. The agenda includes 24 CEH being offered. All pertinent meeting information can be found at: http://cascadiacreative.com/apda_spokane/welcome

Don Badley commented that NERC will conduct a 1.5-hour webinar on April 7 entitled "Generator Governor Frequency Response Advisory". The OC discussed BAL-003-1 and how the frequency response requirements could be satisfied through a reserve sharing group. Greg Travis encouraged those present to get involved in the frequency response discussions taking place through various industry forums.

6. Northwest Operational Planning Study Group (NOPSG) Report Dana Reedy, NWPP

The Northwest Operational Planning Study Group met on March 31 to discuss the Summer 2015 path ratings. Dana Reedy reviewed the ratings using Excel spreadsheets for Spring and Summer; refer to Attachments #4a and #4b.

7. NWPP Emergency Energy Plan (EEP) Simulation – Approval Item Jerry Rust, NWPP

The NWPP Emergency Energy Plan (EEP) was distributed prior to the meeting with an appeal for comments or revisions. None were received. While there was not a request to conduct a stand alone simulation exercise, Kathee Downey suggested one being done during the System Dispatchers meeting in Spokane. Jerry Rust volunteered to work with Don Badley to acquire role playing participants. Johanna Bell said that she has a list of emergency contacts for several States and it may be advantageous to involve regulatory bodies involved.

Action Item: NWPP staff to conduct a system-wide EEP simulation from NWPP System Dispatchers Meeting in Spokane. Jerry will work with Don Badley to acquire role playing participants. And, Don Badley will get a list of emergency contacts for NW States from Johanna Bell.

8. MC Initiative – Discussion - *where should the MC tools reside?* Scott Kinney, AVA

Scott Kinney gave an update on the MC Initiative. The OC had expected Scott to bring back a proposal related to future support and maintenance of the MC tools but recent decisions by the MC Executives to take an incremental approach to the Initiative have delayed discussion on some issues. Scott provided an update on where Phase 4 of the MC initiative is headed (remainder of 2015) and discussed possible administrative structures which may still involve the NWPP but probably won't be specific to the OC. Clark County, PAC, and GCPD are no longer funding Phase 4. A Phase 3 contract extension includes the tools, so those entities are still participating in the Phase 3 tools initiative.

A vendor service agreement (VSA) exists with PeakRC for the tools. It is a specific multiparty agreement with PeakRC and each MC participant. It includes data confidentiality.

A market operator has not been selected from the RFP. A FERC Petition for a Declaratory Order has been drafted, and the decision to file will be made by June 2015. The Regional Flow Forecast (RFF) and Resource Monitoring and Deliverability tools have been funded through December 2015 through the Phase 3 work order extension and are scoped in the vendor services agreement with a $1.1M budget. These tools are going live on PeakRC site soon. The intent is to make RFF visible to merchant entities and potentially the general public.

Scott plans to keep the OC informed of the MC effort going forward.

9. Electronic Version of NWPP Transmission System Maps Don Badley, NWPP

Don Badley announced that the NWPP Transmission System Map is now posted on the secured NWPP Website in AutoCad and PDF formats. Any updates to these maps should be provided to Don.

Eddie Elizeh asked if it was still necessary to print the phrase "for official use only" on the NWPP Transmission System Maps. After a short discussion, the OC decided to carry this item over to the June OC meeting.

Action Item: NWPP OC will address any concerns and or issues regarding confidentiality of the Pacific Northwest Transmission System map at the June OC meeting. Purpose of is to make a decision about distribution policy related to the map and to discuss the "for Official Use Only" label.

10. NWPP Agreement – Direction regarding Options 1, 2, and 3 Greg Travis, OC Chair

The OC discussed the following three options related to the NWPP Agreement.

Option1: Put further consideration of revising the NWPP Agreement on hold for now.

Option 2: Work to encourage membership support for the Work Team's proposed revisions on the basis that, even though there are not sweeping governance changes, the proposed revisions provide a better, more

flexible platform for the further evolution of the NWPP as future consensus dictates.

Option 3: Retain the basic structure of the proposed revision but add new language providing for an executive committee.

Following a discussion of the options, the OC decided there were not enough changes to make it worthwhile for executives to spend time on, at this time. It was decided that Option 1 is now off the table. Jerry Rust appealed to the OC to go back to their executives and discuss the agreement with them to know what they want in the Agreement. Currently, it is evident that confusion exists between what the OC wants and what some executives want.

A few meetings ago, the NWPP Agreement workgroup was appointed to guide the committees through the revision process. John Appel is a member of that group but he is stepping down, so Eddie Elizeh volunteered to take his place. The workgroup will meet again along with those whose managements are interested in Option 3 for some type of "executive committee" structure. Raj Hundal volunteered to meet with the group.

11. NERC Update Jerry Rust, NWPP

Jerry Rust used a PowerPoint presentation to provide an update on NERC activities; refer to Attachment #5.

Action Item: NWPP staff will find out how one goes about joining GridEx III.

12. WECC Update

a. WECC OC Meeting – Highlights
Nothing reported.

b. NERC/WECC Seasonal Assessments Don Badley, NWPP
Don Badley explained that WECC, again, left the NWPP Staff out of the loop associated with the Seasonal Assessment. This means that BAs will have to respond to WECC's request by sending their replies directly to Salt Lake.

As agreed at last year's NWPP annual membership meeting, the NWPP staff will continue to assemble and post seasonal assessments. This year's Summer Assessment for the NWPP area will be posted by April 3rd.

Action Item: NWPP staff will follow-up with NERC regarding Seasonal Assessments to avoid duplicate efforts.

13. Peak Reliability RC – Update Tony Burt, Peak Reliability

Tony Burt gave an update on PeakRC activities, the items covered include the following:

- COS 5 upgrade – a new version of Peak's Coordinated Outage System was moved into production in February. Implementation has gone well for the most part. Still ironing out issues as they arise.
- Data request changes for outage data took effect. Outage Data requested four business days out to give Peak three days to run studies.

- Gas/Electric coordination – in February, all major pipeline transmission folks met with the RC to get publicly available information on gas availability. Scott Downey is the contact liaison.
- Peak's Board of Directors approved a "Bridge" Data Sharing Policy, which will essentially extend the provisions of the current Universal Data Sharing Agreement (UDSA) for up to one year while a new UDSA is negotiated.
- The GridEx III contact to get added to the email communications is, Bill.Lawrence@nerc.net. NERC requests that they work with one Lead Planner per company. The registration website is currently being tested and is not yet operational.

Keith Morisette asked about the IRO-010 data request. Specifically, what is Peak's definition of Hourly Spinning Reserve?

John Appel asked about the WECC 1600 data request.

14. OC Goals Greg Travis, OC Chair

a. 2015-2016 – Development and approval
The OC requested staff to go through the OC meeting notes for 2014-15 and list all decision items on an Excel spreadsheet. This is to be ready for discussion at the next OC meeting.

b. 2014-2015 Operating Year – Review
Greg Travis reviewed and updated the disposition of OC goals for 2014-15.

15. Review of Action Items Decided at this Meeting Don Badley, NWPP

- Staff will provide a list of current e-learning training courses, those in the process of being produced, and those that will be coming in from other organizations.
- NWPP staff to conduct a system-wide EEP simulation from NWPP System Dispatchers Meeting in Spokane. Jerry will work with don to get participants.
- Don Badley will get a list of emergency contacts for NW States from Johanna Bell.
- NWPP OC will address any concerns and or issues regarding confidentiality of the Pacific Northwest Transmission System map at the June OC meeting. Purpose of is to make a decision about distribution policy related to the map and to discuss the "for Official Use Only" label.
- NWPP staff will find out how one goes about joining GridEx III.
- NWPP staff will follow-up with NERC regarding Seasonal Assessments to avoid duplicate efforts.
- Don Badley will peruse the OC meeting notes from January 2014 (to present) to create a list of all decision items for discussion at the next OC meeting. Purpose is to decide whether a "decision" chronicle should be constructed for the OC.

16. Enhanced Curtailment Calculator (ECC) and Reserve Sharing Raj Hundal, PWX

Raj Hundal gave a brief update on the development of Peak Reliability's Enhanced Curtailment Calculator and the possibility of an impact on reserve sharing group programs.

17. Future Meetings

a. Need for a Joint Meeting — Jerry Rust, NWPP

The OC decided they would like to meet with the Transmission Planning Committee and the Coordinating Group in October to address agreement issues and other items of interest.

b. Frequency of OC Meetings – Discussion — Greg Travis, OC Chair

c. OC Meeting Dates for 2016 – Proposed — ChaRee DiFabio, NWPP

- February 10 – Portland, OR
- May 11 – Portland, OR (Goal Planning)
- August 10 – Portland, OR
- October 13 – Portland, OR

d. OC Meeting Dates for 2015

- June 3, 2015 – Portland
- October 7, 2015 – Portland

ATTACHMENTS

NWPP OPERATING COMMITTEE MEETING

April 1, 2015

Draft Agenda
March 31, 2015

OPERATING COMMITTEE
April 1, 2015 – 10:00 AM – 5:00 PM
NWPP Offices – 7505 N.E. Ambassador Place, Suite R –- Portland, Oregon
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✓ *Action Item*

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4. **NWPP Corporation Update** — Jerry Rust, NWPP

a. Forecast of Expenditures for 2014-15 – Status report
✓ b. 2015-2016 Forecast of Expenditures – Approval
c. E-learning – Update

5. **Current Operations** — All

6. **Northwest Operational Planning Study Group (NOPSG) Report** — Dana Reedy, NWPP

✓ 7. **NWPP Emergency Energy Plan (EEP) Simulation – Approval Item** — Rust

Action Item: Does the OC want a simulation exercise? It is on the Dispatchers Meeting Agenda for May 13, 2015.

8. **MC Initiative – Discussion -** *where should the MC tools reside?* — Scott Kinney, AVA

Draft Agenda
March 31, 2015

✓ *Action Item*

9 Electronic Version of NWPP Transmission System Maps — Badley

10. NWPP Agreement – Direction regarding Options 1, 2, and 3 — Travis

11. NERC Update — Rust

a. NERC OC Meeting – Highlights
b. Lessons Learned

13. WECC Update

a. WECC OC Meeting – Highlights — Rust
b. NERC Seasonal Assessments — Badley

13. Peak Reliability RC – Update — Tony Burt, Peak Reliability

14. OC Goals — Travis

a. 2015-2016 – Development and approval
b. 2014-2015 Operating Year – Review

15. Review of Action Items Decided at this Meeting — Badley

16. Future Meetings

✓ a. Need for a Joint Meeting — Rust
b. Frequency of OC Meetings – Discussion — Travis
c. OC Meeting Dates for 2016 – Proposed — ChaRee DiFabio, NWPP
d. OC Meeting Dates for 2015
   - June 3, 2015 – Portland
   - October 7, 2015 – Portland

ADJOURN

Attachment #3

Northwest Power Pool Meeting
April 1, 2015 - Portland
Attendance

Name	Organization	Phone	Email
Doug Hincks	Alberta Electric System Operator	403-803-7673	doug.hincks@aeso.ca
Rich Hydzik	Avista Corp	509 495 4005	rich.hydzik@avistacorp.com
Bryan Cox	Avista Corp	509-495-8305	bryan.cox@avistacorp.com
Mark Willis	Balancing Authority of Northern California	916-732-5451	mark.willis@smud.org
Edison Elizeh	Bonneville Power Administration	503-230-4105	egelizeh@bpa.gov
John Appel	Chelan County PUD	509-669-4586	john.appel@chelanpud.org
Jeff Heminger	Douglas County PUD	509-881-2228	jeffhe@dcpud.org
JJ Jamieson	Gridforce Energy Management LLC	503-970-8422	jj@Grid4ce.net
Greg Travis	Idaho Power Company	208-388-2702	gtravis@idahopower.com
Derek Denniston	NaturEner Power Watch and Wind Watch	415-786-3773	derek@naturener.us
Jay Campbell	NV Energy	775-834-3782	jcampbell@nvenergy.com
Kathee Downey	PacifiCorp	503-251-5163	kathryn.downey@pacificorp.com
Bob Frost	Portland General Electric Company	503-464-8916	robert.frost@pgn.com
Raj Hundal	Powerex	604-837-2500	raj.hundal@powerex.com
Denise Lietz	Puget Sound Energy	425-861-4860	denise.lietz@pse.com
Pawel Krupa	Seattle City Light	206-706-0240	pawel.krupa@seattle.gov
Keith Morisette	Tacoma Power	253-502-8830	kmoriset@ci.tacoma.wa.us
James Farrar	Turlock Irrigation District Water and Power	209-883-8210	jmfarrar@tid.org
Michael Tongue	Grant County P.U.D.	509-793-1458	mtongue@gcpud.org
Tony Burt	Peak Reliability	360-553-3026	tburt@peakrc.com
Kevin Harris	ColumbiaGrid	503-943- 9432	harris@columbiagrid.org
Teleconference			
CJ Ingersoll	Gridforce Energy Management LLC		
Craig Speidel	Western Area Power Administration - UGPR	605-882-7541	speidel@wapa.gov
Johanna Bell	Idaho Public Utilities Commission		
Asher Steed	B.C. Hydro and Electric Authority		
Michael McGowan	NorthWestern Energy		
NWPP Staff			
Jerry Rust	NWPP Corporation	503-445-1074	jerry@nwpp.org
ChaRee DiFabio	NWPP Corporation	503-445-1079	charee@nwpp.org
Don Badley	NWPP Corporation	503-445-1076	don@nwpp.org

NORTHWEST POWER POOL
Reliability through Cooperation

2015-2016 Forecast of Expenditures for the Operating Committee

All Northwest Power Pool Committees must approve their respective forecast of expenditures in accordance with the NWPP Agreement

Article IX: Finances

- Section 9.1.1 Forecast of OC Expenses: The NWPP staff shall prepare an annual NWPP budget forecast of OC expenses for presentation to the OC for the approval by the OC Members. The OC Members shall have final approval authority by two-thirds affirmative vote over the annual and supplemental NWPP budgets allocable to OC Members.

Northwest Power Pool General Services Agreement
Section 2. Annual Budget Forecast and Support Services

Section 2.1 Development and Approval of Annual Budget Forecast. Not less than 60 days before the start of each fiscal year, the NWPP Corporation will prepare and present to those Pool Committees and Groups whose approval is required under the Northwest Power Pool Agreement an Annual Budget Forecast. An Annual Budget Forecast will be deemed approved for purposes of this Agreement if (but only if) it is approved in accordance with the voting procedures specified in the Northwest Power Pool Agreement for the Pool Committee and Group approval of Annual Budget Forecast.

OC Forecast of Expenditures July 1, 2014 to June 30, 2015 vs. Estimate *(9 Months actual + 3 Months est.)*

	2014-2015	Estimated	Change
OC Budget	$1,335,689	$1,322,300	–$13,389
CEH Adders	$ 126,500	$ 126,500	
Total	$ 1,462,189	$1,448,800	– $13,389

Estimated annual expenditure as compared to budget ~ 99%

NERC CEH Training

- NERC CEH training hours provided over July1, 2014 to June 30, 2015 (as of April 1, 2015)
  - *Face-to-Face ~ 1,800 CEH*
  - *On-Line E-Learning ~ 1,500 CEH*

OC Forecast of Expenditures
July 1, 2015 to June 30, 2016

	2014-2015	2015-2016	% Change
OC Budget	$1,335,689	$1,166,016	–13%
CEH Adders	$ 126,500	$ 92,000	
Total	$1,462,189	$1,258,016	–13%

OC Forecast of Expenditures
July 1, 2015 to June 30, 2016

- 53% of the budget is salaries of FTEs
- 26% of the budget is associated with employee overheads such as health insurance, pension, and others
- 6% of the budget is associated with office expense
  - 85% of the budget is associated with employees and office
- ~15% of the budget is variable (meetings and meeting expenses

Forecast of Expenditures
July 1, 2015 to June 30, 2016

- The percentage change for any one member of the NWPP from the July 1, 2014 to June 30, 2105 Forecast of Expenditure as compared to the July 1, 2015 to June 30, 2016 Forecast of Expenditure ranges:
  - **–13.97% (decrease) to a 0.82% (increase)**

OC Forecast of Expenditures
July 1, 2015 to June 30, 2016

Motion for approval

The OC portion of the Northwest Power Pool corporate forecast of expenditures for the period July 1, 2015 to June 30, 2016 of $1,258,016.

Any questions before we get started with 2015-2016.

Rumors

Contrary to Rumors

Don will not be retiring for at least another two years, and

Jerry is planning to work two if not five more years.

NOPSG 2015 Spring Season Path System Operating Limits (NOPSG January 22, 2015)

Path Description	WECC PATH NO.	WECC Path Catalog Rating MW	Path Limitation	2015 Spring SOL (MW)	2014-15 Winter SOL (MW)	2014 Summer SOL (MW)	2014 Spring SOL (MW)
		1000 E-W	Transient stability	450-1000 E-W	450-1000 E-W*	450-1000 E-W*	450-1000 E-W
Alberta - British Columbia	1	1200 W-E	Transient stability	600-1200 W-E	600-1200 W-E*	600-1200 W-E*	600-1200 W-E
		3150 N-S	Transient stability	3150 N-S	3150 N-S*	3150 N-S*	3150 N-S
Northwest - Canada	3	3000 S-N	Thermal	1300-3000 S-N	850-2750 S-N	2000-3000 S-N	1300-3000 S-N
West of Hatwai	6	4277 E-W	Thermal	4275 E-W	4250 E-W	4275 E-W	4275 E-W
			Pre-contingency Voltage				
		2200 E-W	Performance	2200 E-W	2200 E-W*	2200 E-W	2200 E-W
Montana - Northwest	8	1350 W-E	Thermal	**1200-1350 W-E***	1321-1350 W-E	1156-1245 W-E	1285-1350 W-E
		2400 E-W	Thermal	2175 E-W***	2400 E-W*	2355 E-W	2355 E-W
Idaho - Northwest	14	1200 W-E	Thermal	1200 W-E	1200 W-E	1200 W-E	1200 W-E
		500 N-S	Thermal	478 N-S	478 N-S	478 N-S	478 N-S
Sierra - Idaho	16	360 S-N	Thermal	262 S-N	262 S-N	262 S-N	262 S-N
Borah West	17	2557 E-W	Thermal	2557 E-W	2557 E-W	2557 E-W	2557 E-W
		383 N-S	Voltage Change	383 N-S***	337 (383) N-S*	337 N-S	337 N-S
Montana - Idaho	18	256 S-N	Thermal	256 S-N	256 S-N	256 S-N	256 S-N
			Voltage Change				
Bridger West	19	2400 E-W	& Thermal	2400 E-W	2400 E-W*	2400 E-W	2400 E-W
			Voltage Change				
		1600 N-S	& Thermal	1600 N-S	1600 N-S*	1600 N-S*	1600 N-S
Path C	20	1250 S-N	Thermal	955-1250 S-N	900-1250 S-N*	900-1250 S-N*	955-1250 S-N
		160 E-W	Thermal	105 E-W	50-105 E-W	50-105 E-W	105 E-W
Sierra - PG&E	24	160 W-E	Thermal	100 W-E	100 W-E	100 W-E	100 W-E
		440 E-W	Voltage Change	355 E-W	355 E-W*	355 E-W*	355 E-W*
Sierra - Utah	32	235 W-E	Voltage Change	235 W-E	235 W-E	235 W-E*	235 W-E*
			Voltage Change				
Brownlee East	55	1915 W-E	& Thermal	1915 W-E	1915 W-E	1915 W-E	1915 W-E
PDCI	65	3100 N-S		3100 N-S**	2000 N-S*	3100 N-S**	3100 N-S**
			Voltage stability &				
		3100 S-N	transient stability	2200 S-N	2000 S-N	2200 S-N	2200 S-N
COI + NW - Sierra	66	4800 N-S		4800 N-S**	4800 N-S*	4800 N-S**	4800 N-S**
			Voltage stability &				
		3675 S-N	transient stability	3675 S-N	3675 S-N	3675 S-N	3675 S-N
North of John Day	73	(NR) 8400 N-S	Voltage stabilty	8000 N-S**	7200 N-S*	8000 N-S**	8000 N-S**
		1500 E-W	Thermal	1500 E-W	1500 E-W*	1500 E-W	1500 E-W
			Thermal & Reactive				
Hemingway - Summer Lake	75	550 W-E	margin	550 W-E	550 W-E	550 W-E	550 W-E
		300 N-S	Voltage Change	300 N-S	300 N-S	300 N-S	300 N-S
Northwest - Sierra	76	300 S-N	Voltage Change	300 S-N	300 S-N	270 S-N*	300 S-N
		(NR) 600 N-S	Thermal	600 N-S	600 N-S	600 N-S	600 N-S
Montana - Southeast	80	(NR) 600 S-N (HL)	Transient stability	455-600 S-N	416-600 S-N	390-600 S-N (HL)	455-600 S-N
		(NR) 600 S-N (LL)	Transient stability	278-600 S-N	503-600 S-N	488-600 S-N (LL)	278-600 S-N
Montana Alberta Tie Line	83	325 N-S	Thermal	10-325 N-S	325 N-S*	127-325 N-S*	10-325 N-S*
		300 S-N	Thermal	300 S-N	300 S-N*	300 S-N*	300 S-N*

Notes

'*' - Indicates Studies Performed For the Operating Season. Numbers shown in **blue** indicate studies conducted for current operating season.

''** - Indicates Daily Studies Performed For the Operating Season

'***' - Indicates revised rating based on studies for summer 2015 (rev Mar 31, 2015)

Table entries with a range of numbers indicate a nomogram is used for the path

(NR) - Indicates Path Has Not Been Rated

Path Rating numbers highlighted in red indicate a new path rating

Numbers in parenthesis () are SOL limits that are subject to additional equipment installed & operating, or completion of the WECC 3-phase rating process. The following paths indicate required action: Path 18, Montana-Idaho N-S.

This document is a non-binding compilation of information shared through the NOPSG process. Formal submittal of the SOLs are the responsibility of the respective Transmission Operators. This document does not constitute a compliance submittal by any party.

NOPSG 2015 Summer Season Path System Operating Limits (NOPSG March 31, 2015)

Path Description	WECC PATH NO.	WECC Path Catalog Rating MW	Path Limitation	2015 Summer SOL (MW)	2015 Spring SOL (MW)	2014-15 Winter SOL (MW)	2014 Summer SOL (MW)
Alberta - British Columbia	1	1000 E-W 1200 W-E	Transient stability Transient stability	450-1000 E-W 600-1200 W-E	450-1000 E-W 600-1200 W-E	450-1000 E-W* 600-1200 W-E*	450-1000 E-W* 600-1200 W-E*
Northwest - Canada	3	3150 N-S 3000 S-N	Transient stability Thermal	3150 N-S 2000-3000 S-N	3150 N-S 1300-3000 S-N	3150 N-S* 850-2750 S-N	3150 N-S* 2000-3000 S-N
West of Hatwai	6	4277 E-W	Thermal	4275 E-W	4275 E-W	4250 E-W	4275 E-W
Montana - Northwest	8	2200 E-W 1350 W-E	Pre-contingency Voltage Performance Thermal	**2200 E-W*** **1100-1250 W-E***	2200 E-W 1200-1350 W-E*	2200 E-W* 1321-1350 W-E	2200 E-W 1156-1245 W-E
Idaho - Northwest	14	2400 E-W 1200 W-E	Thermal Thermal	**2175 E-W*** **1200 W-E***	2175 E-W*** 1200 W-E	2400 E-W* 1200 W-E	2355 E-W 1200 W-E
Sierra - Idaho	16	500 N-S 360 S-N	Thermal Thermal	478 N-S 262 S-N	478 N-S 262 S-N	478 N-S 262 S-N	478 N-S 262 S-N
Borah West	17	2557 E-W	Thermal	2557 E-W	2557 E-W	2557 E-W	2557 E-W
Montana - Idaho	18	383 N-S 256 S-N	Voltage Change Thermal	**383 N-S* **256 S-N	383 N-S*** 256 S-N	337 (383) N-S* 256 S-N	337 N-S 256 S-N
Bridger West	19	2400 E-W	Voltage Change & Thermal	2400 E-W	2400 E-W	2400 E-W*	2400 E-W
Path C	20	1600 N-S 1250 S-N	Voltage Change & Thermal Thermal	1600 N-S 900-1250 S-N	1600 N-S 955-1250 S-N	1600 N-S* 900-1250 S-N*	1600 N-S* 900-1250 S-N*
Sierra - PG&E	24	160 E-W 160 W-E	Thermal Thermal	50-105 E-W 100 W-E	105 E-W 100 W-E	50-105 E-W 100 W-E	50-105 E-W 100 W-E
Sierra - Utah	32	440 E-W 235 W-E	Voltage Change Voltage Change	355 E-W 235 W-E	355 E-W 235 W-E	355 E-W* 235 W-E	355 E-W* 235 W-E*
Brownlee East	55	1915 W-E	Voltage Change & Thermal	1915 W-E	1915 W-E	1915 W-E	1915 W-E
PDCI	65	3100 N-S 3100 S-N	Voltage stability & transient stability	3100 N-S** 2200 S-N	3100 N-S** 2200 S-N	2000 N-S* 2000 S-N	3100 N-S** 2200 S-N
COI + NW - Sierra	66	4800 N-S 3675 S-N	Voltage stability & transient stability (& thermal summer 2015)	4800 N-S** 3675 S-N	4800 N-S** 3675 S-N	4800 N-S* 3675 S-N	4800 N-S** 3675 S-N
North of John Day	73	(NR) 8400 N-S	Voltage stabilty	8000 N-S**	8000 N-S**	7200 N-S*	8000 N-S**
Hemingway - Summer Lake	75	1500 E-W 550 W-E	Thermal Thermal & Reactive margin	**1500 E-W*** **550 W-E***	1500 E-W 550 W-E	1500 E-W* 550 W-E	1500 E-W 550 W-E
Northwest - Sierra	76	300 N-S 300 S-N	Voltage Change Voltage Change	300 N-S 270 S-N	300 N-S 300 S-N	300 N-S 300 S-N	300 N-S 270 S-N*
Montana - Southeast	80	(NR) 600 N-S (NR) 600 S-N (HL) (NR) 600 S-N (LL)	Thermal Transient stability Transient stability	600 N-S 390-600 S-N (HL) 488-600 S-N (LL)	600 N-S 455-600 S-N 278-600 S-N	600 N-S 416-600 S-N 503-600 S-N	600 N-S 390-600 S-N (HL) 488-600 S-N (LL)
Montana Alberta Tie Line	83	325 N-S 300 S-N	Thermal Thermal	127-325 N-S 300 S-N	10-325 N-S 300 S-N	325 N-S* 300 S-N*	127-325 N-S* 300 S-N*

Notes

'*' - Indicates Studies Performed For the Operating Season. Numbers shown in **blue** indicate studies conducted for current operating season.

''** - Indicates Daily Studies Performed For the Operating Season

'***' - Indicates revised rating based on studies for summer 2015 (rev Mar 31, 2015)

Table entries with a range of numbers indicate a nomogram is used for the path

(NR) - Indicates Path Has Not Been Rated

Path Rating numbers highlighted in red indicate a new path rating

Numbers in parenthesis () are SOL limits that are subject to additional equipment installed & operating, or completion of the WECC 3-phase rating process. The following paths indicate required action:

This document is a non-binding compilation of information shared through the NOPSG process. Formal submittal of the SOLs are the responsibility of the respective Transmission Operators. This document does not constitute a compliance submittal by any party.

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NERC Operating Committee Activities Update
December 9-10, 2014 Meeting & March 10-11, 2015 Meeting

to ensure the reliability of the bulk power system

Current Activity Summary

Topics Discussed

- Reliability Guidelines
- Continuing Education Program
- Essential Reliability Services Task Force
- Adequate Level of Reliability (ALR) Metrics
- AC Substation Equipment Task Force
- Interconnection Frequency Response Obligations
- Lessons Learned Events
- US Department of Energy Research and Development Program
- Standards of Interest

Attendance at NERC OC Meetings

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WECC Members

- Jerry Rust, Northwest Power Pool
- John Powell, Tri-State Generation and Transmission Association
- Lloyd Linke, Western Area Power Administration – Upper Great Plains
- Don Watkins, Bonneville Power Administration
- Keith Carman, Tri-State Generation and Transmission Association
- Tony Nguyen, British Columbia Hydro & Power Authority
- Rich Hydzik, Avista Corporation
- Don Badley, Northwest Power Pool
- ChaRee DiFabio, Northwest Power Pool

Current Activity Summary

NERC NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

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Reliability Guidelines – Approved

- Revised – Generating Unit Operations during Complete Loss of Communications
  - Posted for 45-day comment period.
- Reliability Coordinators – Balancing Authorities – Transmission Operators Communication: Loss of Real-Time Reliability Tools Capability / Loss of Equipment Significantly Affecting ICCP Data for a 45-day comment period.

Continuing Education Program

- **Approved** Version 4.3 of the Continuing Education Program Administrative Manual

Essential Reliability Services (ERS) Task Force

- **Endorsed** initial draft of ERSTF Phase 2 document.

Current Activity Summary

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Adequate Level of Reliability (ALR) Metrics

- **Approved** discontinuance of ALR metrics 1-5 (Transmission System Voltage Profile) and 2-3 (Activation of Under Frequency Load Shedding)

AC Substation Equipment Task Force (ACSETF) Report

- **Endorsed** the ACSETF final report, subject to the ACSETF refining the recommendations into actionable recommendations with a business plan to help prioritize implementation of each recommendation

Interconnection Frequency Response Obligations

- Under BAL-003-1, the WECC Frequency Response Obligation is now 907 MW/0.1 Hz

Lessons Learned

- Southern Company report on Polar Vortex

GridEx III

GridEx III Expectations and ROI

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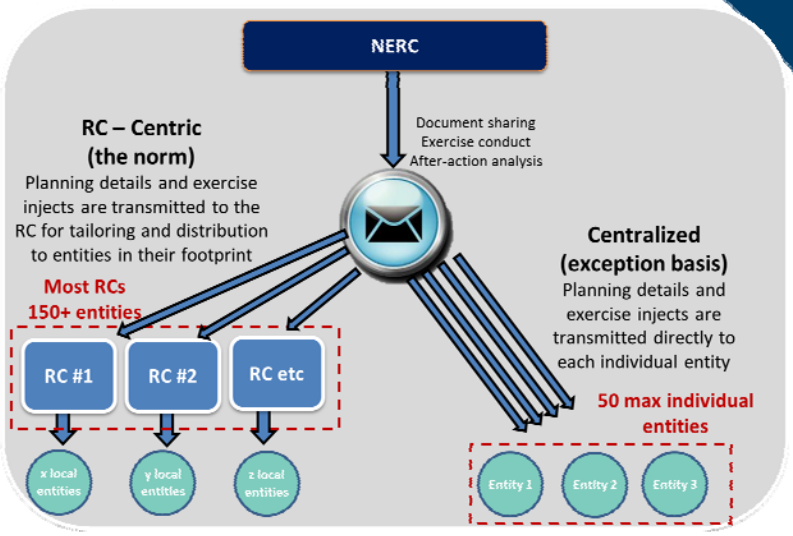
Designation	Expectations	Return on Investment
Your Organization		
Active Organization	• Participate in NERC planning conferences and training sessions • Engage in dynamic internal exercise play and external information sharing and coordination • Tailor/adapt scenario to suit organization objectives and play • Communicate externally to other exercise participants	• Close interaction with other BPS entities and relevant law enforcement and government agencies • Incident response training opportunity • Provide input to develop scenario and identify after action findings • Use exercise for requirements evidence
Observing Organization	• Limited resources/support from NERC • Receive baseline scenario injects • Tabletop or discuss scenario events internally • No interaction with Active Organizations	• Valuable internal training opportunity • Gain experience to participate in future exercises as an Active Organization
Your Organization's Participants		
Planner	• Participate in planning conferences • Designate and orient players and controllers • Customize injects for more realism • Provide after action feedback	• Opportunity to provide input on all planning materials • Provide input to develop scenario and identify after action findings • Observe player response and activities
Player	• Participate in orientation and training • Engage in 2 days of live exercise play and provide after action feedback to planners	• Realistic training opportunity with broad set of BPS entities • Build and strengthen relationships

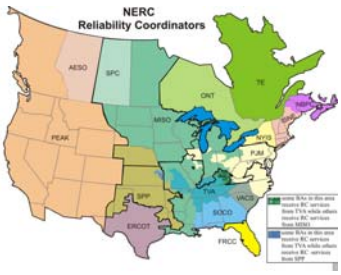
GridEx III and Reliability Coordinators



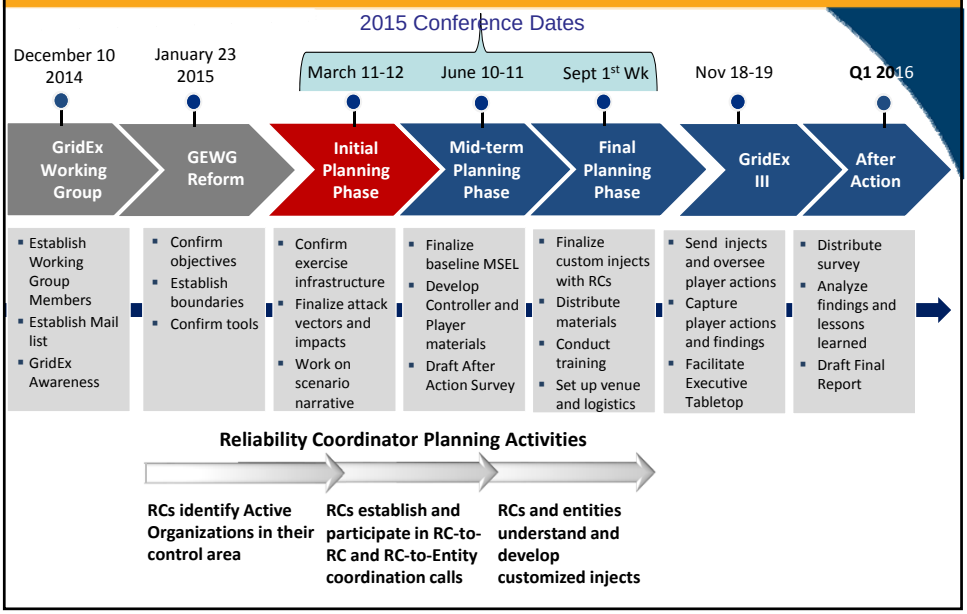
16 Reliability Coordinators

Code	Name
ERCOT	ERCOT ISO
FRCC	Florida Reliability Coordinating Council
HQT	HydroQuebec TransEnergie
ISNE	ISO New England Inc.
MISO	Midcontinent Independent System Operator
NBPC	New Brunswick Power Corporation
NYIS	New York Independent System Operator
ONT	Ontario - Independent Electricity System Operator
PJM	PJM Interconnection
SPC	SaskPower
SOCO	Southern Company Services, Inc.
SPP	Southwest Power Pool
TVA	Tennessee Valley Authority
VACS	VACAR-South
PEAK	Peak Reliability
AESO	Alberta Electric System Operator

The GEWG has SMEs from 12 RCs across the BES to support GridEx planning and conduct



GridEx III Timeline



DOE Research Activity

U.S. Department of Energy Research and Development Program

- DOE's Energy Infrastructure Modeling and Analysis (EIMA) Division within its Office of Electricity Delivery and Energy Reliability drives electric grid modernization by improving energy system reliability, security and resiliency. It was noted that the EIMA Division addresses dynamics, complexity, and uncertainty, through measurement, modeling, and risk assessment to improve energy infrastructure decision making. Two research projects were highlighted:

  1. Applying optimization, numerical computation and reliability assessment to the problem of integrated natural gas and electric power scheduling.
  2. Utilize spectral coherence analysis methods to investigate underlying oscillations in the power system and provide a means to detect them.

DOE Research Activity

NREL/GE Consulting Report Says Western Grid Can Weather Disturbances Under High Renewable Penetrations

- A new report finds that with good system planning, sound engineering practices, and commercially available technologies, the Western Interconnection can withstand the crucial first minute after grid disturbances with high penetrations of wind and solar on the grid.
  1. The report is titled *"The Western Wind and Solar Integration Study Phase 3 (WWSIS-3) — Frequency Response and Transient Stability."*
  2. The report is available at http://www.nrel.gov/docs/fy15osti/62906.pdf.

Current Standards Activity

Standards of Interest

- Standard BAL-001-2 – Awaiting FERC approval.
- Standard BAL-002-2 – ????
- Standard BAL-003-1 – In 2-year Implementation period.
- Standard BAL-004 – PRT recommended termination of BAL-004. SAR and white paper posted on March 17. Now soliciting for drafting team candidates.
- Standards BAL-005 and BAL-006 in process of being updated.
- Alignment of NERC Glossary of Terms and Definitions Used in the Rules of Procedure

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Questions