

Day 1—January 24, 2024
2:00 p.m. to 5:00 p.m.

1. Welcome, Call to Order

Song Wang, Modeling and Validation Subcommittee (MVS) Chair, called the meeting to order at 2:05 p.m. MT on January 24, 2024. A quorum was present to conduct business. A list of attendees is attached as Exhibit A.

2. Review WECC Antitrust Policy

Mr. Wang read aloud the WECC Antitrust Policy statement. The meeting agenda included a link to the posted policy.

3. Approve Agenda

Doug Tucker, Senior Engineer Reliability Assessments, introduced the proposed meeting agenda.

By consensus, the MVS approved the agenda.

4. Review and Approve Previous Meeting Minutes

Mr. Wang introduced the minutes from the meeting on November 11, 2023.

By consensus, the MVS approved the minutes from November 11, 2023.

5. Review Previous Action Items

Mr. Tucker reviewed action items carried over from the MVS meeting on November 11, 2023. Action items that are not closed and will be carried forward can be found [here](#).

6. Review Approved Dynamic Model List

Mr. Tucker reviewed the unapproved dynamic model list with the subcommittee.

The presentation is posted on the WECC website.

7. Review MVS Member List and Update

Mr. Tucker reviewed the MVS member list with the subcommittee.

MVS Meeting Minutes—January 24–26, 2024

8. MOD-033 Experience

Ben Hutchins, Western Power Pool, presented on the MOD-003 experience.

The presentation is posted on the WECC website.

9. Overview of NERC TPL-008 Reliability Standard (Under development)

Dmitry Kosterev, Bonneville Power Administration, presented on the overview on the NERC TPL-008 reliability standard.

The presentation is posted on the WECC website.

Day 2—January 25, 2024

9:00 a.m. to 12:00 p.m.

10. Renewable Energy Modeling

The MVS discussed the REGFM_B1 and voted to approve the REGFM_B1. Mr. Tucker and Mr. Wang will discuss how the MVS names models and what the models are supposed to represent during the May 2024 meeting. Mr. Kosterev discussed model acceptance tests for generation interconnection studies with the subcommittee. Pouyan Pourbeik, PEACE, presented an update on the latest RES models. The MVS discussed the REPC_D model and voted to approve the REPC_D model. Mr. Pourbeik will address the dispatch of hybrid plant models and active power in power flow distribution factors during the May 2024 meeting. Jinho Kim, Pacific Northwest National Laboratories, discussed modeling of grid-forming capability for type III wind turbine generators. The MVS discussed prioritizing the next set of model developments, offshore wind model developments, and discussed grid forming (GFM).

The presentations are posted on the WECC website.

On motion by Jamie Weber, the MVS approved the REGFM_B1 model.

On motion by Songzhe Zhu, the MVS approved the REPC_D model.

11. Active Transmission System Modeling Update

Mr. Pourbeik presented an overview on active transmission system modeling and provided summaries of the SVSMO4 activity, the Intermountain Power Project (IPP) DC line activity and the Transbay DC line activity for the subcommittee. Ammanuel Selassie, Los Angeles Department of Water and Power (LADWP), will touch base with LADWP after their meeting in March with vendor and/or Bonneville Power Administration. WECC will work with GE on the SCMOV model specification.

The presentation is posted on the WECC website.



12. Load Modeling

Stephen Jenkins, PNM, presented on data center load modeling. JP Skeath, NERC, updated the committee on the NERC load modeling effort. Mr. Kosterev, and Andreas Schmit, Bonneville Power Administration, lead a discussion on the load modeling work plan.

The presentations are posted on the WECC website.

Day 3—January 26, 2024

9:00 a.m. to 12:00 p.m.

13. Electric Vehicle Modeling Experience

John Skeath, NERC, presented the electric vehicle modeling experience.

The presentation is posted on the WECC website.

14. Power Plant Modeling

Quincy Wang, British Columbia Hydro and Power Authority (BCH), presented synchronous machine on-load saturation and Potier reactance.

Mengxi Chen, GE Verona (GE), presented GENQEC model benchmark.

Robert Jackson, Burns & McDonnell (BMCD), presented GENQEC Model Experience.

Slaven Kincic, Pacific Northwest National Laboratory (PNNL), presented the Possible Impact of Hydrological Data on Frequency Response.

The presentations are posted on the WECC website.

15. MOD-33 Update

Licheng Jin, California Independent System Operator (CAISO), presented a RC West MOD-33 update.

Mr. Tucker presented the Southwest Power Pool (SPP) update. SPP is working with CAISO to get the Puget Sound Energy, Inc. (PSE) information.

The presentations are posted on the WECC website.

16. Program Updates

Ms. Chen presented PSLF program updates. The GENQEC is fixed and is released. The REPC_D model will be released in February. The REM model is under development.

Jay Senthil, Siemens Energy, Inc. (SPTI), presented PSSE program updates.



MVS Meeting Minutes—January 24–26, 2024

Jamie Weber, PowerWorld, presented PowerWorld program updates.

Jeff Bloemink, Powertech Labs (PTL), presented Powertech Labs TSAT program updates.

The presentations are posted on the WECC website.

17. Public Comment

No comments were made.

18. Review New Action Items

- Discuss how we name models and what the model is supposed to represent during the May 2024 meeting.
 - Assigned To: Doug Tucker and Song Wang
 - Due Date: May 22, 2024
- Address dispatch of hybrid plant models and active power in power flow distribution factors during the May 2024 meeting
 - Assigned To: Pouyan Pourbeik
 - Due Date: May 22, 2024
- Touch base with LADWP after their meeting in March with vendor and/or Bonneville Power Administration
 - Assigned To: Amanuel Selassie
 - Due Date: May 22, 2024
- Work with GE on the SCMOV model specification.
 - Assigned To: WECC
 - Due Date: May 22, 2024

19. Upcoming Meetings

May 22–24, 2024 Salt Lake City

September 11–13, 2024 (TBD)..... Salt Lake City

20. Adjourn

Mr. Wang adjourned the meeting without objection at 12:00 p.m.



MVS Meeting Minutes—January 24–26, 2024

Exhibit A: Attendance List

Members in Attendance

Angel Aquino..... PowerWorld Corporation
Hassan Baklou..... San Diego Gas and Electric
Zachary Beus..... Puget Sound Energy, Inc.
Jess Boatwright.....NorthWestern Energy
Kevin Brooks..... Southern California Edison Company
Sean Brosig..... US Army Corps of Engineers
Emerson Butler..... Puget Sound Energy, Inc.
Daniel Cervantes..... Los Angeles Department of Water and Power
Ken Che..... Public Utility District No. 1 of Snohomish County
Mengxi Chen..... GE Verona (GE Energy Consulting Group)
Christopher Corral..... El Paso Electric Company
Tuan Dang..... Public Utility District No. 1 of Snohomish County
Wei Du..... Pacific Northwest National Laboratory
Chris Effiong..... Western Area Power Administration
Xiaoyuan Fan..... Pacific Northwest National Laboratory
Roberto Favela..... El Paso Electric Company
Christopher Fuchs..... California Independent System Operator
Chris Gilden..... Tri-State Generation and Transmission—Reliability
Joseph Gillette..... Utility System Efficiencies, Inc.
Bo Gong.....Salt River Project
Robert Jackson..... Burns & McDonnell (1898 and Co.)
Licheng Jin..... California Independent System Operator
Gordon Kawaley.....Bonneville Power Administration—Transmission
Lesley Kayser-Sprouse..... Hetch Hetchy Water and Power
James Keller.....Western Area Power Administration - Rocky Mountain Region
Seongtae Kim..... PacifiCorp



MVS Meeting Minutes—January 24–26, 2024

Slaven Kincic Pacific Northwest National Laboratory
Yuriy Komlev U.S. Bureau of Reclamation
Dmitry Kosterev Bonneville Power Administration—Transmission
May Le Public Utility District No. 2 of Grant County
Mitchell Miller NorthWestern Energy
Saurav Mohapatra PowerWorld Corporation
Pouyan Pourbeik Power and Energy, Analysis, Consulting and Education, PLLC
Nathan Powell Deseret Generation & Transmission Cooperative
Sergey Pustovit Bonneville Power Administration
Anthony Rendon Salt River Project
Micah Runner Black Hills Corporation
Amanuel Selassie Los Angeles Department of Water and Power
Jayapalan (Jay) Senthil Siemens Energy, Inc.
Hari Singh Public Service Company of Colorado (Xcel Energy)
Jonathan Stahlhut TransCo Energy, LLC
Spencer Tacke Auriga Corporation
Chifong Thomas Thomas Grid Advisor
Patrick Truong Sacramento Municipal Utility District
Doug Tucker WECC
Ramin Vakili GE Verona (GE Energy Consulting Group)
GuiHua Wang British Columbia Hydro and Power Authority
Song Wang Portland General Electric Company
Jeffery Watkins NV Energy
Maggie Watkins US Army Corps of Engineers
James Weber PowerWorld Corporation
Trevor Werho Arizona Public Service Company
Steve Yang Bonneville Power Administration—Transmission
Jimmy Zhang Alberta Electric System Operator



MVS Meeting Minutes—January 24–26, 2024

George Zhou..... S&C Electric Company
Songzhe Zhu..... GridBright, Inc.

Members not in Attendance

Joel Ankeny PacifiCorp
Ian Beil..... Portland General Electric Company
Lakmal Chandrasekara..... Turlock Irrigation District
Jim Ding British Columbia Hydro and Power Authority
Fangfang Du..... PacifiCorp
Jonathon Flores Los Angeles Department of Water and Power
Carlos FloresLopez..... US Army Corps of Engineers
Aaron Hancock Tucson Electric Power
Allison Hidalgo..... U.S. Bureau of Reclamation
Siraji (Sam) Hirsi Bonneville Power Administration
Robert Jones..... Seattle City Light
Milad Kahrobaee AES Corporation
Lesley Kayser-Sprouse..... Hetch Hetchy Water and Power
May Le..... Public Utility District No. 2 of Grant County
Ron Markham Pacific Gas and Electric Company
Parag Mitra Electric Power Research Institute
Amir Mohammednur..... Southern California Edison Company
Avinash Narava Tucson Electric Power
Mark Pigman..... Tacoma Power
Deepak Ramasubramanian Electric Power Research Institute
Daniel Ramirez..... Energy Strategies
Alistair Rennie..... Salt River Project
Benjamin Rodriguez..... El Paso Electric Company
David Roop..... Mitsubishi Electric Power Products, Inc.
Hari Singh..... Public Service Company of Colorado (Xcel Energy)



MVS Meeting Minutes—January 24–26, 2024

Alejandro Solis El Paso Electric Company
Khanh Thai Tacoma Power
Jade Thiemsuwan Sempra Renewables Services, Inc.
Chad Thomson..... Utility System Efficiencies, Inc.
Andres Valdepena Delgado Idaho Power Company
Dhayanesh Velusamy Burns & McDonnell (1898 and Co.)
Jeffery Watkins..... NV Energy
Scott Wilson..... Avista Corporation
Xiaofei (Sophie) Xu..... Pacific Gas and Electric Company
Xiaokang Xu S&C Electric Company
Janice Zewe..... Sacramento Municipal Utility District

Others in Attendance

Shounak Abhyankar..... ISO New England
Chris Albrecht WECC
Dirk Barton Public Service Company of New Mexico
Daja Bell WECC
Theo Brown Southwest Power Pool
Malati Chaudhary..... Public Service Company of New Mexico
Dennis Chesnakov Public Utility District No. 2 of Grant County
Rachel Clark Tri-State Generation & Transmission–Power Management Division
Christopher Corral El Paso Electric Company
Jackson Daly Idaho Power Company
Marina Dushenko San Diego Gas and Electric
Tony Faris Bonneville Power Administration
Bryan Friesen..... BC Hydro
Ivan Guerro Southern California Edison Company
Donna Hakeem El Paso Electric Company
Nick Hatton WECC



MVS Meeting Minutes—January 24–26, 2024

Fred Howell..... Powertech Labs, Inc.
Robert Jackson..... Burns & McDonnell (1898 and Co.)
Stephen Jenkins..... Public Service Company of New Mexico
Prasuna Katta..... Public Service Company of New Mexico
Dan Leanard..... Peregrine Engineering
Sam Li..... BC Hydro
Wei Li Powertech Labs, Inc.
Jose Macias Operation Technology
James Macpherson..... Avantis
Andrew McNaughton..... Public Service Company of New Mexico
Nima Miri Seattle City Light
Elliot Mitchell-Colgan Bonneville Power Administration—Transmission
Saurav Mohapatra PowerWorld Corporation
Quan Nguyen..... Pacific Northwest National Laboratory
Emily Parry..... Public Utility District No. 1 of Snohomish County
Jaun Placid JJ Power and Energy
Nathan Powell..... Deseret Generation & Transmission Cooperative
Amro Quedan Electric Reliability Council of Texas
Ebrahim Rahimi..... California Independent System Operator
Cory Rea..... Bonneville Power Administration
Ricardo Rodriguez..... El Paso Electric Company
Enrique Romero..... Puget Sound Energy, Inc.
Andreas Schmitt Bonneville Power Administration
Amanuel Selassie..... Los Angeles Department of Water and Power
Nitish Sharma..... National Grid USA Service Company
Gary Simonson..... PacifiCorp
Xavier Sosa Southern California Edison Company
Kannan Sreenivasachar..... ISO New England



MVS Meeting Minutes—January 24–26, 2024

Thakar Sushrut.....Electric Power Research Institute
Sushrut Thakar.....Electric Power Research Institute
Patrick Truong Sacramento Municipal Utility District
John Undrill..... Independent Subject Matter Expert
Jerod Vandehey..... Public Utility District No. 1 of Cowlitz County
Jerry Vang..... Mitsubishi Electric Power Products, Inc.
Bernd Weise..... California Energy Commission
Choi Wooyeongventus0666@gmail.com
Michael Xia Powertech Labs, Inc.
Yuguang Xiao.....BC Hydro
Jimmy Zhang.....Alberta Electric System Operator
Chelsea Zhu..... National Grid Renewables Development

