

Modeling and Validation Subcommittee

Meeting Minutes
Virtual

Day 1 – January 28, 2026

3–5 p.m. MST

1. Welcome, Call to Order

Song Wang, Modeling and Validation Subcommittee (MVS) chair, called the meeting to order at 3:04 p.m. MST January 28, 2026. A quorum was present to conduct business. A list of attendees is attached as Exhibit A.

2. Review WECC Antitrust Policy

Doug Tucker, senior engineer, read aloud the WECC Antitrust Policy statement. The policy can be found on wecc.org.

3. Approve Agenda

S. Wang introduced the proposed meeting agenda.

On a motion by Robert Jackson, Burns & McDonnell (1898 and Co.), the MVS approved the agenda.

4. Review and Approve Previous Meeting Minutes

S. Wang introduced the minutes of the meeting on September 10–12, 2025.

On a motion by Jackson Daly, Idaho Power Company, the MVS approved the minutes of the meeting on September 10–12, 2025.

5. Review Previous Action Items

Maya Brimhall, administrative coordinator, reviewed action items carried over from the MVS meeting on September 12, 2025. Action items that are not closed and will be carried forward can be found on wecc.org.

6. Review Unapproved Dynamic Models in Master Dynamics File

D. Tucker reviewed the Unapproved Dynamic Model List and encouraged MVS members to look at the list for any models that are listed for their area and submit any corrections to WECC.

7. MVS Vice Chair

S. Wang introduced Songzhe Zhu, Qualus, LLC, as the nominated MVS vice chair.

On a motion by Ebrahim Rahimi, California Independent System Operator, the MVS approved S. Zhu's MVS vice chair appointment.

8. WECC MVS Model Approval Procedure

S. Wang introduced the proposed WECC MVS Model Approval Procedure document. Multiple MVS members expressed their desire to postpone the approval of the document to the next meeting.

D. Tucker introduced a motion to postpone the approval of the WECC MVS Model Approval Procedure to the next MVS meeting.

On a motion by Doug Tucker and seconded by Pouyan Pourbeik, Power and Energy, Analysis, Consulting and Education, PLLC, the MVS approved postponing the WECC MVS Model Approval Procedure document approval item.

9. Mod-033 Update

The following Mod-033 updates were made:

- N. Hatton presented Licheng Jin's, California Independent System Operator, RC West updates.
- D. Tucker shared SPP updates.

10. Prioritizing the Next Set of Model Development

The MVS prioritized the following set of model development:

- VHVDC_A1
- VHVDC2
- Large Load
 - EV Charging Model
 - Data Center
 - Electrolyzer model
- VHVDC3-Offshore Wind
- Advanced Pump Storage Model
- SVSMO4 Model
- Multi-terminal VSC-HVDC

IBR Controls – REEC_E was removed from the model development list since it was approved in the September 2025 MVS meeting.

11. Adjourn Day 1

S. Wang adjourned Day 1 without objection at 5 p.m. MST.

Day 2 – January 29, 2026

9 a.m.–5 p.m. MST

12. Renewable Energy Modeling

The following Renewable Energy Modeling updates were made:

- P. Pourbeik provided REPC_E model updates.
- S. Zhu introduced the IBR Model and Validation Guideline document.

On a motion by Pouyan Pourbeik, the MVS approved the IBR Model and Validation Guideline.

- S. Zhu led a discussion on REPC_D Endorsement and Legacy REPC_B Treatment. She introduced the REPC_B for retirement. The MVS established a timeline to officially retire the model by August 1, 2026; D. Tucker and S. Wang will draft and distribute a letter explaining the REPC_B retirement, outlining next steps, and requesting comments on the REPC_D model to bring back for discussion at the next MVS meeting.

On a motion by Pouyan Pourbeik, the MVS approved the REPC_B Model Retirement.

- Meng Yue, BNL, presented a joint granular forecasting and optimization framework for weather-aware grid operations.
- S. Wang led a discussion concerning the MVS's role in electromagnetic transient (EMT) models and studies. There were no significant updates.

13. Active Transmission System Modeling Update

The following active transmission system modeling updates were made:

- P. Pourbeik led an overview of the following active transmission system model specifications:
 - VHVDC2
 - VHVDC3
 - SVSM04
- Wei Du and Quan Nguyen, PNNL, updated the MVS on the standard library HVDC and MTDC model development.

On a motion by Robert Jackson, the MVS approved the VHVDC_A1 model specification.

14. Load Modeling

The following load modeling updates were made:

- Nick Hatton, senior engineer, provided an update on the modular-based composite load model implementation in WECC base cases.
- Dmitry Kosterev, BPA, presented the NERC data center load modeling technical reference.

- S. Wang discussed modeling data centers using the CMLD guideline.
- Jamie Weber, PowerWorld Corporation, presented on the PERC1 model development.
- Andreas Schmitt, BPA, and S. Wang updated the MVS on the following aspects of the load modeling work plan:
 - Transitioning the load model to a modular-based structure
 - Parameter calibration
 - Testing/verification, including equipment testing and model performance verification based on system events or other methods
 - WECC load model composition data
 - System-wide simulation
 - EV and data center control and protection
 - Supporting NERC emerging load plans

15. Adjourn Day 2

S. Wang adjourned Day 2 without objection at 4:32 p.m. MST.

Day 3 – January 30, 2026

9 a.m.–noon MST

16. Power Plant Modeling

The following power plant modeling updates were made:

- Jonathan Denman, Nimbus Power Engineers, presented a GENQEC field review.
- Greg Brooks, USACE–Walla Walla District, introduced the GENQEJ model and addressed concerns about the model. Xiaokang Xu, S&C Electric Company, made a motion to postpone the GENQEJ model approval and Fangfang Du, PacifiCorp, seconded the motion. The MVS participated in debate concerning the model’s postponement. Members who favored delaying approval of the GENQEJ model expressed the following concerns:
 1. GENQEJ model does not have a complete model specification for transparency and traceability.
 2. There are outstanding technical issues relating to model formulation and performance.
 3. Responses to previously raised technical issues were not received in sufficient time for committee review prior to the meeting.

MVS members indicated that addressing these items would improve clarity regarding the appropriate application of the model and support confidence in its use for system studies.

J. Weber introduced a secondary motion to end the debate, and P. Pourbeik seconded the motion. The MVS, by consensus, approved to end debate and move into the postponement vote. The MVS voted to reject the postponement and move forward with the GENQEJ model approval item. Prior to the GENQEJ model approval vote, S. Wang clarified whether the approval was intended to be contingent upon completion of a formal model specification; J. Weber indicated that the approval was not contingent, and the motion was not amended.

On a motion by Xiaokang Xu and seconded by Fangfang Du, The MVS rejected the GENQEJ model approval item postponement.

On a motion by James Weber and seconded by Pouyan Pourbeik, the MVS approved the GENQEJ model.

- Mike Basler, Basler Electric Company, presented the BASOEL2 model.

17. Program Updates

The following program updates were made:

- Ramin Vakili, GEV, provided PSLF program updates.
- Jay Senthil, PTI, provided PSSE program updates.
- Jamie Weber, PowerWorld Corporation, provided PowerWorld program updates.
- Jeff Bloemink, Powertech Labs, provided Powertech Labs TSAT program updates.

18. Public Comment

There were no comments made.

19. Review New Action Items

- Review and edit the WECC MVS Model Approval Procedure document to be approved in next MVS meeting
 - Contact members who have not provided comments
 - Assigned To: Nick Hatton
 - Due Date: February 28, 2026
 - Collect participant input and coordinate follow-up discussion, as needed
 - Assigned To: Doug Tucker
 - Due Date: February 28, 2026
 - Interested MVS members may provide additional comments via email
 - Assigned To: Interested MVS members
 - Due Date: February 28, 2026

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- Add IBR Control – REEC_E to the approved model list
 - Assigned To: Nick Hatton; Doug Tucker
 - Due Date: February 28, 2026
 - Draft and send letter explaining REPC_B retirement, next steps, and requesting comments
 - Assigned To: Doug Tucker; Song Wang
 - Due Date: February 6, 2026
 - Add GENQEJ to approved model list
 - Assigned To: Nick Hatton; Doug Tucker
 - Due Date: February 28, 2026
 - Add Songzhe Zhu as vice chair on MVS membership lists
 - Assigned To: Maya Brimhall
 - Due Date: February 6, 2026
 - Gather PERC1 model information to present at next MVS meeting
 - Assigned To: Nick Hatton
 - Due Date: May 8, 2026

20. Review Upcoming Meetings

May 6–8, 2026Salt Lake City, Utah

September 9–11, 2026..... Virtual

21. Adjourn

S. Wang adjourned the meeting without objection at 12:15 p.m. MST.



Exhibit A: Attendance List

Members in Attendance

Angel Aquino	PowerWorld Corporation
Hassan Baklou	San Diego Gas and Electric
Dirk Barton	Utility System Efficiencies, Inc.
Gregory Brooks.....	U.S. Army Corps of Engineers-Walla Walla District
Sean Brosig	US Army Corps of Engineers-Portland District
Emerson Butler.....	Puget Sound Energy, Inc.
Lakmal Chandrasekara.....	Turlock Irrigation District
Ken Che.....	Public Utility District No. 1 of Snohomish County
Christopher Corral.....	El Paso Electric Company
Jackson Daly	Idaho Power Company
Fangfang Du	PacifiCorp
Wei Du	Pacific Northwest National Laboratory
Roberto Favela	El Paso Electric Company
Carlos Flores Lopez	U.S. Army Corps of Engineers-Walla Walla District
Christopher Fuchs.....	California Independent System Operator
Cindy Fung.....	Alberta Electric System Operator
Miguel Garcia	Sacramento Municipal Utility District
Chris Gilden	Tri-State Generation and Transmission—Reliability
Robert Jackson	Burns & McDonnell (1898 and Co.)
Robert Jones	Seattle City Light
Slaven Kincic	Pacific Northwest National Laboratory
Yuriy Komlev.....	U.S. Bureau of Reclamation
Dmitry Kosterev.....	Bonneville Power Administration—Transmission
Richard Maguire.....	Electrical Consultants, Inc.
Mitchell Miller.....	NorthWestern Energy
Saurav Mohapatra.....	PowerWorld Corporation
Pouyan Pourbeik.....	Power and Energy, Analysis, Consulting and Education, PLLC
Sergey Pustovit	Bonneville Power Administration—Transmission
Ebrahim Rahimi	California Independent System Operator
Sohail Sayeed.....	Pacific Gas and Electric Company
Jayapalan (Jay) Senthil	Siemens Industry, Inc.
Xavier Sosa.....	Southern California Edison Company
Jin Tan	National Renewable Energy Laboratory
Anthony Taylor	Black Hills Corporation
Doug Tucker	WECC
Ramin Vakili.....	GE Vernova (GE Energy Consulting Group)
GuiHua Wang.....	British Columbia Hydro and Power Authority
Song Wang	Portland General Electric Company
Maggie Watkins.....	U.S. Army Corps of Engineers-Seattle District

James Weber PowerWorld Corporation
Trevor Werho Arizona Public Service Company
Xiaofei (Sophie) Xu Pacific Gas and Electric Company
Xiaokang Xu S&C Electric Company
Farhad Yahyaie..... Qualus, LLC
Steve Yang..... Bonneville Power Administration—Transmission
Songzhe Zhu..... Qualus, LLC

Members not in Attendance

Zachary Beus..... Puget Sound Energy, Inc.
Jess Boatwright NorthWestern Energy
Dahlia Byles Public Service Company of New Mexico
Daniel Cervantes Los Angeles Department of Water and Power
Malati Chaudhary Public Service Company of New Mexico
Mengxi Chen..... GE Vernova (GE Energy Consulting Group)
Tuan Dang Public Utility District No. 1 of Snohomish County
Chris Effiong..... Western Area Power Administration
Joseph Gillette Utility System Efficiencies, Inc.
Bo Gong Salt River Project
Allison Hidalgo U.S. Bureau of Reclamation
Licheng Jin California Independent System Operator
Seong Tae Kim PacifiCorp
Parag Mitra..... Electric Power Research Institute
Thura Nwe Pacific Gas and Electric Company
Michael (Logan) Pokallus..... Western Area Power Administration
Deepak Ramasubramanian Electric Power Research Institute
Ratanak So U.S. Army Corps of Engineers-Portland District
Spencer Tacke..... Auriga Corporation
Muhammad Tayyab Western Area Power Administration
Chifong Thomas..... Thomas Grid Advisor
Jeffery Watkins NV Energy
Ratanan Yoopat..... Bonneville Power Administration
Yu Zhang..... Pacific Gas and Electric Company

Others in Attendance

Muthanna Abusbeaa..... Electric Reliability Council of Texas
Mithil Acharya EPE Consulting
Chris Albrecht..... WECC
Eric Bahr..... NorthWestern Energy
Sheraz Baig..... Powertech Labs, Inc.
Mike Basler Basler Electric
Maya Brimhall..... WECC



Yaojie Cai	Powertech Labs, Inc.
Jared Campbell	Electrical Consultants, Inc.
Troy Coleman	Puget Sound Energy, Inc.
Jonathan Denman	Nimbus Power Engineers, LLC
William Dull	U.S. Army Corps of Engineers-Walla Walla District
Xiaoyuan Fan	Eaton Research Labs
Tony Faris	Bonneville Power Administration
Andrew Glencross	U.S. Army Corps of Engineers
Jorge Gutierrez	Imperial Irrigation District
Jim Hadley	Black Hills Corporation
Nick Hatton	WECC
Brianna Haug	Southwest Power Pool
Eric Heredia	Bonneville Power Administration
Saman Hoshyarzadeh	Powertech Labs, Inc.
Henry Jansen	Basler Electric
Stephen Jenkins	Public Service Company of New Mexico
Brandon Johnson	Westwood Professional Services
Prasuna Katta	Public Service Company of New Mexico
Gordon Kawaley	Bonneville Power Administration—Transmission
Kiyong Kim	Basler Electric
Ilhan Kocar	DIgSILENT North America
Jacob Lagrange	Southwest Power Pool
Bernie Lesieutre	University of Wisconsin-Madison
Peiyan Li	Powertech Labs, Inc.
Sam Li	British Columbia Hydro and Power Authority
James MacPherson	Alpha Omega Power
Taylor McClain	GridSME
C.D. McLean	California Energy Commission
Elliott Mitchell-Colgan	Bonneville Power Administration
Ali Moeini	Hydro-Québec
Sheik Mohiuddin	Pacific Northwest National Laboratory
Ashley Ng	Powertech Labs, Inc.
Quan Nguyen	Pacific Northwest National Laboratory
Sumit Pant	BHE Renewables
Mohit Patel	GridSME
Shawn Patterson	U.S. Bureau of Reclamation
Raul Perez	NextEra Energy
Juan Placid	JJ Power & Energy, Inc.
Kenny Poon	British Columbia Hydro and Power Authority
Randy Rhinier	Basler Electric
Benjamin Rodriguez	El Paso Electric Company
Brett Ross	Pacific Northwest National Laboratory

Andreas Schmitt.....	Bonneville Power Administration
Christopher Stauffer	Mitsubishi Electric Power Products, Inc.
Ekamjot Tahim	Powertech Labs, Inc.
Stephanie Tomasik	University of Tennessee, Knoxville
Rodrigo Trevizan	Sandia National Laboratories
Safayet Ullah	Electric Reliability Council of Texas
John Undrill.....	Independent Subject Matter Expert
Andres Valdepena Delgado.....	Idaho Power Company
Jerod Vandehey	Public Utility District No. 1 of Cowlitz County
Jerry Vang.....	Mitsubishi Electric Power Products, Inc.
Sai Gopal Vennelaganti	Tesla, Inc.
Jeff Wai.....	British Columbia Hydro and Power Authority
Quincy Wang.....	British Columbia Hydro and Power Authority
Michael Xia	Powertech Labs, Inc.
Fuhong Xie.....	Public Service Company of New Mexico
Armando Yanez Peralta.....	Salt River Project
Meng Yue.....	Brookhaven National Laboratory
Mingxuan Zhao	Polytechnique Montréal
George Zhou.....	S&C Electric Company
Scott Zuloaga	Electric Reliability Council of Texas