



# RELIABILITY & SECURITY

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Oversight Monthly Update

September 19, 2024, 2:00 p.m. MT



# Reliability & Security Oversight Monthly Update

September 19, 2024

Travis English  
Senior Training and Outreach  
Specialist





# RELIABILITY IN THE WEST

A DISCUSSION SERIES







# **Enforcement** ***FUNDAMENTALS***



# RELIABILITY & SECURITY

Workshop - Portland, Oregon

October 29–30, 2024







# Grid *FUNDAMENTALS*

November 5-6, 2024





# Cold Weather Update

September 19, 2024

Curtis Crews  
Sr. Technical Advisor



# IBR Registration Initiative Update

September 19, 2024

Abby Fellingner

Sr. Registration & Certification Engineer, O&P

Mark Rogers

Sr. Technical Advisor, Registration &  
Certification





# Standards Update

September 19, 2024

Steve Rueckert  
Director of Standards

# Items Covered

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- Current WECC Activities
- Current NERC Activities



# WECC Standards Committee (WSC)

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- Standards Voting Segments (SVS) 2, 3, 5, 6, and 10 Terms ended last week
- All five representatives agreed to another two-year term
- Subsequently, Dana Cabbell (SCE) announced her retirement
  - This leaves SVS 3-Load Serving Entities, without a representative
  - WSC has sought nominees three times with no takers

# Current WECC Projects

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- WECC-0142 Retire BAL-002-WECC
  - Tall Hurdle-FERC may consider this lowering the bar
  - DT has identified good reason to move towards retirement
- WECC-0153 Interchange Consolidation Criterion
  - Consolidation of 11 WECC INT Criterion into a single document
  - Approved by the Ballot Pool (100%)
  - Approved by the Board.
    - Becomes effective October 1, 2024
- WECC-0155 PRC-006-WECC-CRT-4 UFLS Five Year Review
  - Three DT members approved by the WSC
  - Seeking additional DT members



# NERC Activities

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- NERC has 24 active or new projects
- Prioritized as high, medium, or low priority
  - Projects with FERC mandated completion dates or NERC BOT directed dates are prioritized as high
- Low and medium projects may not be addressed until 2025 or 2026
- See prioritization on the NERC Standards Under Development page at <https://www.nerc.com/pa/Stand/Pages/Standards-Under-Development.aspx>

# Recent NERC Ballots

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- Reliability Standards Development Plan (RSDP)
  - Ballot closed 9/20/24
  - Outlines projects for 2025-2027
- Project 2023-02 Analysis and Mitigation of BES Inverter-based Resource Performance Issues
  - Ballot closed 9/13/24
  - Received an 69.73% approval
  - WECC voted affirmative but provided comments for consideration



# Recent NERC Ballots

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- Project 2020-06 Verifications of Models and Data for Generators
  - Final ballot closed 9/12/24
  - Achieved 92.82% approval
  - WECC voted Affirmative
- Project 2023-07 Transmission Planning Performance Requirements for Extreme Weather
  - Ballot closed 8/22/24
  - Only achieved an 18.17% approval
  - WECC voted Negative with comments
  - DT meet last week in SLC
    - New version to be posted in Early October with shortened Ballot Window

# NERC Events

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- NERC SC meeting held on September 18, 2024
  - Three Action Items
    - Two Items sought supplemental DT member
    - One was to post TOP-003-7 and its implementation plan
  - Agenda packet available at:  
[Agenda-September SC 2024.pdf \(nerc.com\)](#)

# Upcoming NERC Events

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- Project 2022-02 Uniform Modeling Framework for IBR
  - Comment and Ballot opens October 1, 2024, and closes October 10, 2024
- Project 2021-03 Modifications to CIP-002
  - Comment and Ballot opens October 4, 2024, and closes October 15, 2024



# NERC Events

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- All NERC Projects
  - Please submit comments
  - Please Vote
    - If you vote no, you must submit comments or the vote will not count
- Your voice and opinion helps the drafting teams develop better products



# Standards Feedback

September 19, 2024

Donovan Crane

Sr. Engineer, Standards

# Standards Feedback

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- What do we want in a Standard?
- Acceptance Criteria of a Reliability Standard document
  - Reliability Based
  - Clear
  - Consistent
  - Measurable



# Standards Feedback

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- What does WECC consider for our comments/voting
  - Does this make the grid more reliable and secure?
    - How can we continue to be supportive?
  - What will make this clearer/measurable/consistent?
    - For WECC and Oversight
    - For Stakeholders



# New Generation – NERC Compliance & Registration Readiness

September 19, 2024

Ruchi Shah

Director, NERC Compliance,  
AES Clean Energy

# New Generation – NERC Compliance & Registration Readiness



Ruchi Shah  
Director NERC Compliance  
AES Clean Energy

9/19/2024





# Purpose

To provide an overview of AES's process to get new Generation Sites ready for NERC Registration.



# AES Clean Energy Overview

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Registered as GO/GOP under “AES US Renewables”

NERC Registered in all ERO Regions

100% IBR Generation: Wind, Solar PV, and Battery Energy Storage System

6,000 MW operational NERC Registered generation

3,000 MW planned NERC Registered generation through 2025

# Getting Ready for Registration of new Generation site.

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## Issue

Multiple RFIs from WECC for registering the new Generation site.

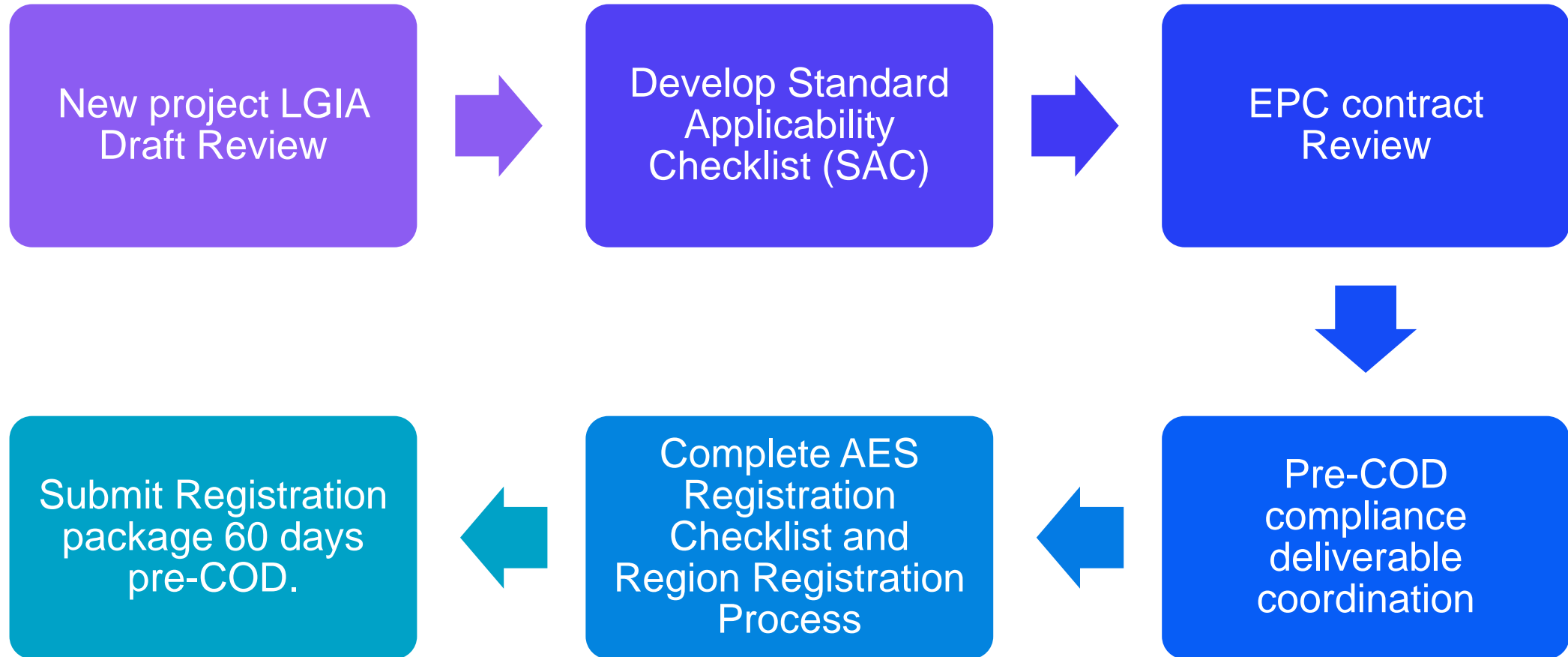
## Goal

Understand WECC's expectation and ensure footprint change request has all the information WECC will need to process registration.

## Resolution

Established new project workflow

# AES New Project Workflow Overview





# Tools and Checklists for NERC Compliance

# Standards Applicability Checklist (SAC) - Overview

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**Purpose:** The SAC is a Generator Owner and Generator Operator-specific list of applicable Standards used by the compliance team to track project details and compliance readiness.

## **Identifies:**

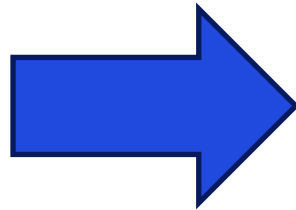
- Requirements applicable to the Generator
- Subject Matter Experts responsible for implementation
- Periodicity or due date for the requirement (i.e. due upon Registration, every 5 years, when a triggering event occurs)
- List of expected Compliance Evidence and status
- Timing of compliance evidence expectation (Pre COD/Post COD)

# Standard Applicability Checklist - Sample

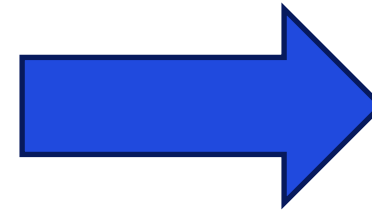
Site Name:				Substation Backfeed:				COD								
	Standard Version	Requirement/Part	Status	Effective Date of Requirement / Part	New Project SME Department/Personnel Name	Applicability to Site	Applicability Notes	Periodicity	Status Notes	Deliverable by COD/Compliance Notes	Backfeed	COD	EPC Deliverable Is Expected	Due Date	Completion Status	
CIP	CIP-003-8	R2 Attachment 1 Section 2.	Active	4/1/2020		Yes	Always applies	COD		*Access management, TWIC authorization, and CIP training covered under CIP-				Within 30 Days of COD		
	CIP-003-8	R2 Attachment 1 Section 3.	Active	4/1/2020		Yes	Always applies	COD		*Access management, TWIC authorization, and CIP training covered under CIP-				Within 30 Days of COD		
	CIP-003-8	R2 Attachment 1 Section 4.	Active	4/1/2020		Yes	Always applies	Event- Based &		N/A				N/A		
	CIP-003-8	R2 Attachment 1 Section 5.	Active	4/1/2020		Yes	Always applies	COD		1) Prior to COD, NCT identifies Maintenance Manager within Standard				Prior to COD		
	CIP-003-8	R3	Active	4/1/2020		Yes	Always applies	Event-Based		N/A				N/A		
	CIP-003-8	R4	Active	4/1/2020		Yes	Always applies	Event Driven		N/A				N/A		
	CIP-003-9	R1	Subject to	4/1/2026		Subject to										
	CIP-003-9	R2	Subject to	4/1/2026		Subject to										
	CIP-003-9	R3	Subject to	4/1/2026		Subject to										
	CIP-003-9	R4	Subject to	4/1/2026		Subject to										
Communication	CIP-004-7	All	Active	1/1/2024		No	Applicability is conditional: not applicable to									
	CIP-005-7	All	Active	10/1/2022		No	Applicability is conditional: not applicable to									
	CIP-006-6	All	Active	7/1/2016		No	Applicability is conditional: not applicable to									
	CIP-007-6	All	Active	7/1/2016		No	Applicability is conditional: not applicable to									
	CIP-008-6	All	Active	1/1/2021		No	Applicability is conditional: not applicable to									
	CIP-009-6	All	Active	7/1/2016		No	Applicability is conditional: not applicable to									
	CIP-010-4	All	Active	10/1/2022		No	Applicability is conditional: not applicable to									
	CIP-011-3	All	Active	1/1/2024		No	Applicability is conditional: not applicable to									
	CIP-012-1	R1.	Active	7/1/2022		No	Applicability is conditional: exclusions exist									
	CIP-013-2	All	Active	10/1/2022		No	Applicability is conditional: not applicable to									
Emergency Operations	COM-001-3	R8.	Active	10/1/2017			Always applies	COD		1). Updated Facility Operations Manual to include new Facility's related	x					
	COM-001-3	R11.	Active	10/1/2017			Always applies	Event Driven								
	COM-001-3	R12.	Active	10/1/2017			Always applies	COD		1). Ensure ROCC has updated their documents (listed in R8 above) to include	x					
	COM-002-4	R3.	Active	7/1/2016			Always applies	Program Level								
	COM-002-4	R6.	Active	7/1/2016			Always applies	Event Driven								
	EOP-004-4	R1.	Active	4/1/2019			Always applies	COD		EOP-004 Event Reporting Plan's Contact Information Appendix to be updated to	x					
	EOP-004-4	R2.	Active	4/1/2019			Always applies	Event Driven								
	EOP-005-3	R11, R12, R13, R14, R15	Active	4/1/2019			Applicability is conditional: must own	COD, 1-year		1) Need LGIA from Interconnection Engineering (Jacob Pundyk and Cory Blair)						
	EOP-005-3	R16.	Active	4/1/2019			Always applies	Event Driven								
	EOP-011-2	R7.	Active	4/1/2023			Always applies	COD, 1-year		1) Review whether the BA/TOP TOP-003 data specification requires submittal of	x		Yes, see FAC-008			
	EOP-011-2	R8.	Active	4/1/2023			Always applies	COD, Program Level		Annual training provided to maintenance personnel in the fall **Fall COD add	x					
	EOP-012-2	R1	Subject to	10/1/2024			Always applies	COD, 5-year								
	EOP-012-2	R2	Subject to	10/1/2024			Applicable to generating units with COD on	COD								
	EOP-012-2	R3	Subject to	10/1/2024			Applicable to generating units COD before	COD								
	EOP-012-2	R4	Subject to	10/1/2024				COD								
	EOP-012-2	R5	Subject to	10/1/2024				Program Level								
	EOP-012-2	R6	Subject to	10/1/2024				Event Driven								

# SAC – Project Data Sheet

Balancing Authority (BA)	
A	B
<b>NERC Functional Relationships</b>	
Balancing Authority (BA)	
Reliability Coordinator (RC)	
Transmission Owner (TO)	
Transmission Operator (TOP)	
Transmission Planner (TP)	
Planning Coordinator (PC)	
Resource Planner (RP)	
Scheduling Coordinator	
<b>CIP-002 Project Information</b>	
Project Name:	
Project Address:	
Substation Name:	
Substation Address:	
Interconnection:	
MW Rating:	
Point of Interconnect (POI) Voltage:	
Interconnect Owner:	
Control Center:	
NCR Number:	
Physical Security Drawings:	
Overhead Drawing:	
PSP Drawing Name	
Network Drawing (if unique)	
AES crew maintaining site? (for TCAs)	
<b>LGIA Data</b>	
Final S-2 Exhibit	
Size of the Generating Unit	
Type of Generation	
Name of interconnecting Collector Sub	
Interconnection Voltage Level	
Gen Tie Line Voltage Level	
Length of Gen Tie Line	
Interconnecting Utility	
Interconnecting ISO	
Does Facility have RAS	
RAS Details	
Data Recording Equipment expected	
One Line Diagram	
Is this a shared Facility with other GO?	
Centralized AVR?	
Local AVR?	
Voltage Conversion needed?	
Registration Region	
Security (CIP) details	
CAISO Resource ID (CAISO BA area only)	



AES  
Registration  
Checklist



AES Registration  
Package for  
Footprint Change or  
New Registration  
(Questionnaire, AVF,  
One Line)



# AES Registration Checklist - Sample

## Registered Entity Information

Registration NCR# NCR11679

Entity Name sPower Services, LLC (pending name change to AES Clean Energy)

Region of Registration

## Type of Request

- New Registration ☐ Yes ☒ No
- Footprint Change ☒ Yes ☐ No

Brief Description of Reason for Registration Change:

## Facility Information

Physical Address

Interconnecting Entity

Interconnection Voltage

Description of Point of Interconnection

Generating Capacity in MW and MVA

[for wind, include number of turbines, model and individual turbine capacity]

Generation Type [Solar, Battery, Wind, Hybrid]

Commercial Operation Date (COD): Commercial operation is tentatively planned for MM/YYYY. The final COD will be provided once the date is finalized.

## One Line Diagram (As Built only)

Filename:

## LGIA (If LGIA is amended, submit amendment)

Filename:

## Functional Mapping

Function	Mapped To Entity
Generator Owner	AES US Renewables

Generator Operator	AES US Renewables
Balancing Authority	
Planning Coordinator	
Reliability Coordinator	
Transmission Owner	
Transmission Operator	
Transmission Planner	

How does this help?

Consistent package  
Reduced RFIs  
Ready for Compliance  
No Surprises!

# Thank you

Ruchi Shah  
Director NERC Compliance  
AES Clean Energy  
Ruchi.Shah@aes.com



# Generation Registration Request Form

9/19/2024

Abby Fellingner  
Sr. Registration & Certification  
Engineer, O&P

# Registration Request Form

## Registered Entity Information

Entity Name: Click or tap here to enter text.

NCR ID#: Click or tap here to enter text.

## Type of Registration Request

New Registration ☐ Yes ☐ No

Footprint Change<sup>1</sup> ☐ Yes ☐ No

## Facility Information

### Asset Description Information

Describe the generation asset(s) being registered or added to an existing registration.

Click or tap here to enter text.

#### Asset Description Information Examples

##### New Registration

Imaginary Solar Entity, LLC is a solar facility that is comprised of 24 Power Electronics Freesun HEM FS3430, 3.55 MVA inverters for a total gross nameplate rating of 85.20 MVA (24 x 3.55 MVA = 85.20 MVA). This facility has a nameplate rating net output limitation at POI of 75 MW and is located in Sunnyvale, California and is interconnected to the Long Lasting Transmission 230 kV Substation.

##### Adding to Existing Registration

Bright Light, LLC would like to add Cactus Storage to its registration under NCR00000 as a GO/GOP once COD is reached for this asset. This BESS facility has a gross nameplate rating of 184.8 MVA and consists of the following two battery units that are interconnected to the Everlasting Transmission:

- BESS1 = Gross Nameplate Rating of 75.6 MVA (18 Power Electronics, PCSM Gen 3 FP4200M2 inverters x 4.2 MVA)
  - Nameplate Rating Net Output Limitation at POI: 50 MW
- BESS2 = Gross Nameplate Rating of 109.2 MVA (26 Power Electronics, PCSM Gen 3 FP4200M2 inverters x 4.2 MVA)
  - Nameplate Rating Net Output Limitation at POI: 75 MW

## Facility Information for New Registration or Footprint Change Addition

Facility Information	Description
Physical Address of Facility	
Interconnecting Entity	
Interconnection Voltage	
Description of Point of Interconnection	
Fuel Type	
Inverter Manufacturer/Model	
Number of Inverters	
Individual Inverter Rating (MVA)	
Gross Nameplate Rating (MVA and MW)	
Nameplate Rating at POI	
Tentative/Effective COD: <sup>2</sup>	

## Documentation Provided

The following documentation is being submitted to WECC (check all that apply):

- ☐ [Generator Registration Questionnaire](#)
- ☐ [ERO Enterprise GO GOP Asset Verification Form](#)
  - 4 GO GOP Asset Verification Tab
  - 5 Entity Change History Tab
- ☐ Interconnection Agreement (submit all versions related to project)
  - ☐ Amended and Restated Interconnection Agreement(s)
  - ☐ Modification Request Report(s) | Material Modification Assessment(s)
- ☐ Operating One-Line Diagrams (As Built)
  - Depicting the Generation Resource(s) through to the Point of Interconnection w/Transmission Owner (TO)
- ☐ Manufacturer's Data Specifications – Solar/BESS Inverters | Wind Turbine Converters (if applicable)
- ☐ Third-Party or Operating Agreement(s) (if applicable)

## Additional Information

Provided documentation should include accurate facility profile information (such as gross nameplate rating, capacity in-service agreement limitations, and inverter information). Explain if there are any discrepancies between documentation provided (such as Interconnection Agreement and One-Line Diagram information).

Click or tap here to enter text.

<sup>1</sup> Adding or removing generation asset from a current NERC registration.

<sup>2</sup> The effective date for a new generation registration is effective based upon the commercial operation date (COD), which is defined on page 6 of the [ERO Enterprise Registration Procedure](#).



# Resources

## WECC Registration Page

- [WECC Entity-Registration](#)

## NERC Registration Page

- [NERC Organization Registration](#)

## Onboarding Information

[ERO Enterprise 101 Informational Package](#)

[ERO Enterprise Entity Onboarding Checklist](#)

[WECC Generator Welcome Package](#)

Email questions to [registration@wecc.org](mailto:registration@wecc.org)



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