Risk Management Process Substantive Changes (2025)

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Introduction

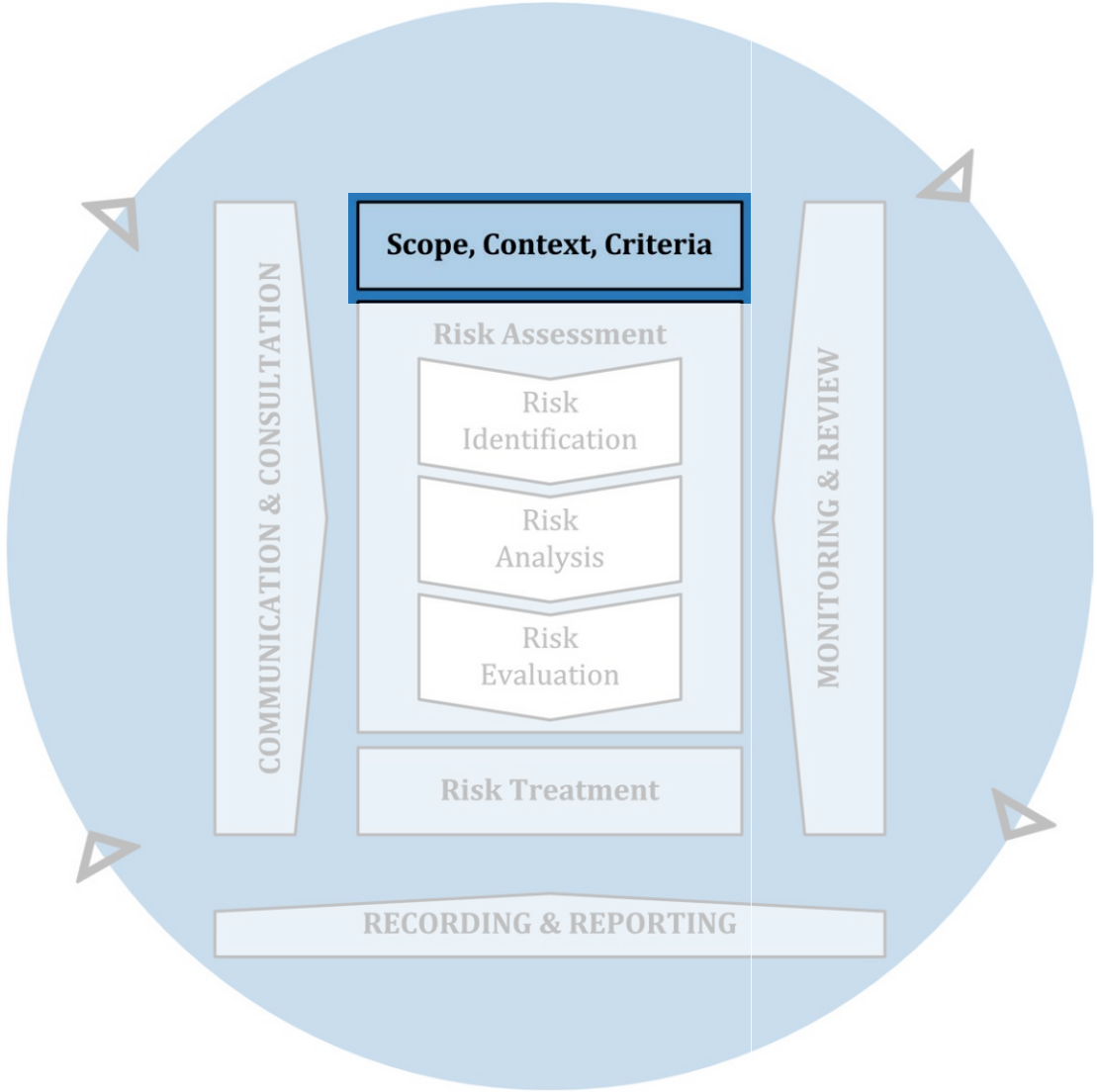
The Risk Management Process was last updated in February 2023 with its initial version.

This is a significant update for 2025 with the intent that it will be updated at least biennially in the future.

The full version can be found here.

A one-page summary here.

RMP Foundation: Scope, Context, Criteria



- ISO 31000 Risk Management
- **Scope:** "The organization should define the scope of its risk management activities."
- **Context:** "The external and internal context is the environment in which the organization seeks to define and achieve its objectives."
- **Criteria:** "The organization should specify the amount and type of risk that it may or may not take, relative to objectives. It should also define criteria to evaluate the significance of risk and to support decision-making processes."

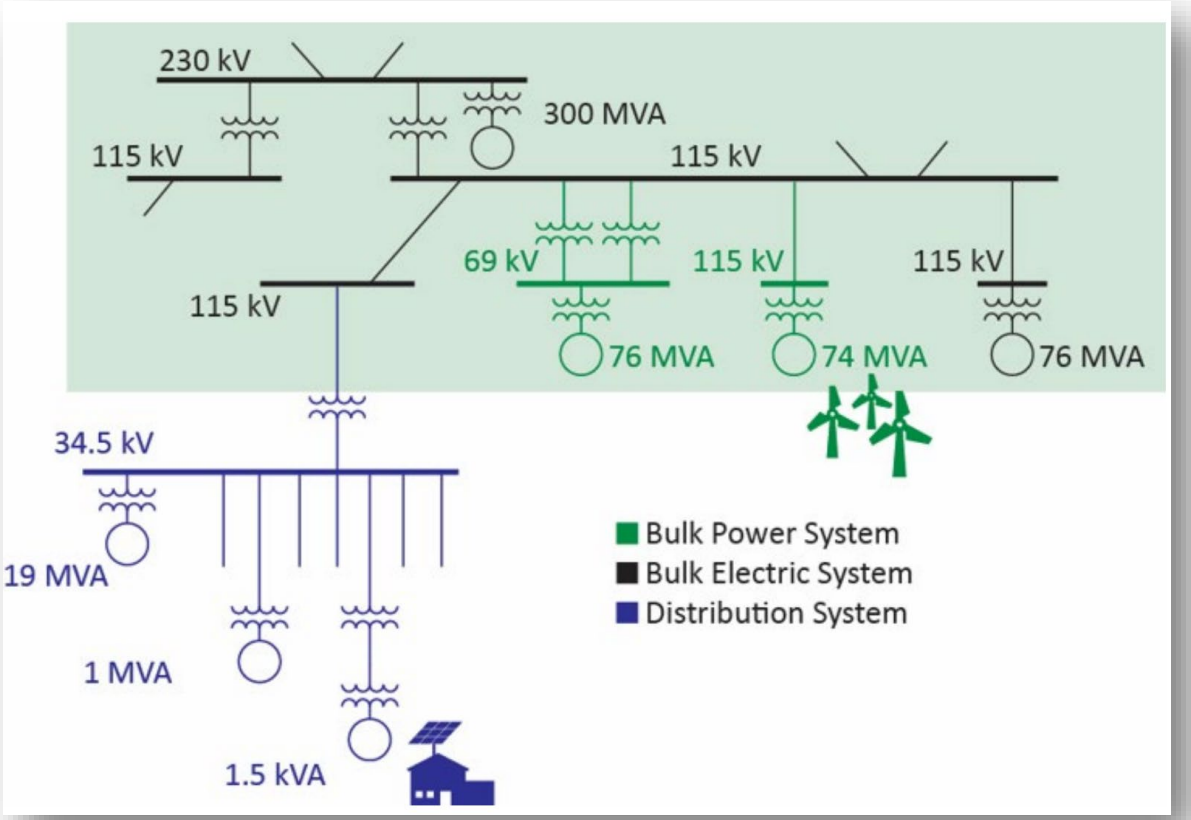

A reliable and secure Bulk Power System in the Western Interconnection
OUR VISION


To effectively and efficiently mitigate risks to the reliability and security of the Western Interconnection's Bulk Power System.
OUR MISSION

Definition: BPS

- NERC: (A) facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and
- (B) electric energy from generation facilities needed to maintain transmission system reliability.

The term does not include facilities used in the local distribution of electric energy.



NERC BES Definition
NERC BPS BES FAQ

Definition: Risk

- Alignment with ISO 31000:
- The effect of uncertainty on the reliability of the Western Interconnection's BPS
  - Effect—Is a deviation from what was expected
  - Uncertainty—Lack of information or knowledge concerning a real or potential event, its consequences, or its likelihood

WECC's Context

WECC Authority:

- Bylaws
- Delegation Agreement
- NERC Rules of Procedure
- Registered Entities

What it's not (but possible to educate & influence), examples:

- Public Utility Commissions
- Energy Commissions
- Air Resources Boards
- Coastal Commissions
- Etc.

WECC's Criteria

- Goal: Single definition of the term "Reliability"
- Need:
  - A single WECC Approach
  - Data-driven decision-making process
  - Defined parameters/metrics/factors
  - Risk Management Process that is durable, consistent, defendable, evergreen, and repeatable
- Proposal: Reliability Adequacy
  - Note: "Security" supports "Reliability"

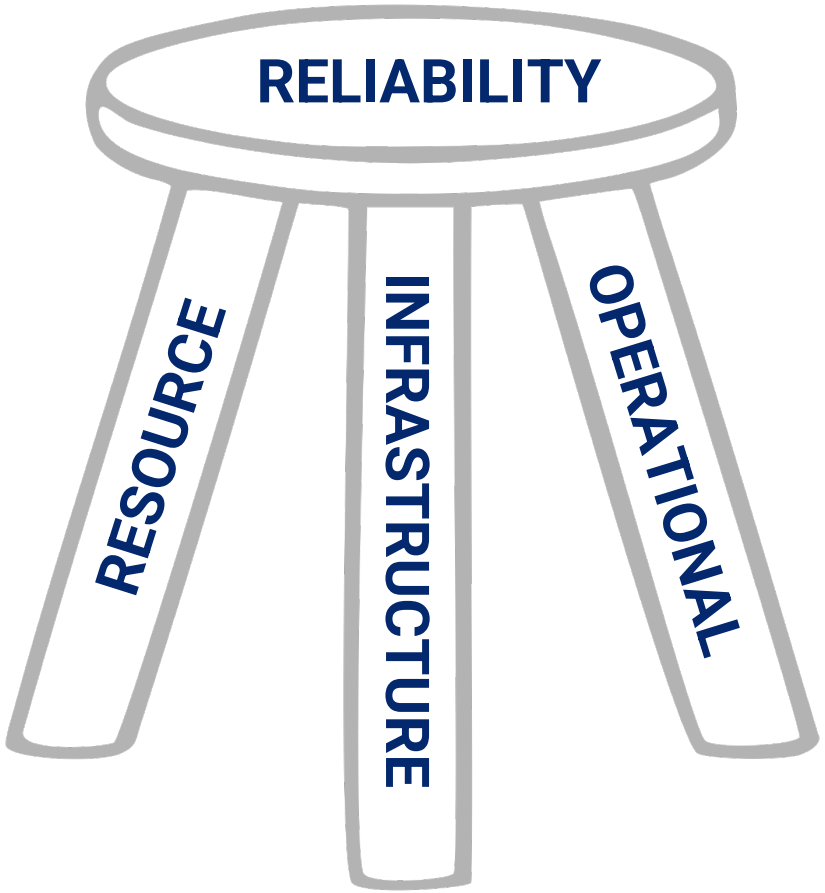
Risk Analysis Overview

Reliability Risk Matrix						
Consequence/Impact (C)		Likelihood (L)				
		L1	L2	L3	L4	L5
		Very Unlikely	**Unlikely**	**Possible**	**Likely**	**Almost Certain**
C5	**Severe**	High	Extreme	Extreme	Extreme	Extreme
C4	**Major**	Medium	Medium	High	High	Extreme
C3	**Moderate**	Medium-Low	Medium-Low	Medium	High	High
C2	**Minor**	Low	Medium-Low	Medium-Low	Medium	Medium
C1	**Negligible**	Low	Low	Low	Low	Medium-Low

Consequence/Impact—How could a typical event due to this risk affect BPS Reliability in the Western Interconnection?	
Severe (C5)	Impacts may have widespread effects on the WI.
Major (C4)	Impacts may have widespread effects on multi-subregions within the WI.
Moderate (C3)	Impacts may have widespread effects on a subregion within the WI.
Minor (C2)	Impacts may have effects on an entity within the WI.
Negligible (C1)	Impacts may have small or non-existent effects within the WI.

Reliability Adequacy—3 Parts

- Resource Adequacy (Generation Assets)
- Infrastructure Adequacy (Transmission Assets)
- Operational Adequacy (Operations)



Resource Adequacy

- Ensuring sufficient resources to meet industry standards, not:
  - State jurisdictions (RPS/CAA)
  - IRP (integrated resource plans) (LOLE, LOLP, USE)
  - Resource adequacy requirements (state mandate PRM, WRAP)
  - FERC/NERC Energy Assurance Standards (future)
- WI (or subregional) resource capability with the Infrastructure (BES)

Resource Adequacy Factors

Resource Adequacy Impact—How could a typical event* affect WI BPS reliability?		Capacity (MW) Factor #1	Energy (TWh) Factor #2
Severe (C5)	Impacts may have widespread effects on the WI.	≥5% deficit on total WI Load	≥5% DARH for total WI
Major (C4)	Impacts may have widespread effects on multi-subregions within the WI.	≥2% deficit on total WI Load	≥2% DARH for total WI
Moderate (C3)	Impacts may have widespread effects on a subregion within the WI.	≥1.5% deficit on total WI Load	≥1.5% DARH for total WI
Minor (C2)	Impacts may have effects on an entity within the WI.	≥1% deficit on total WI Load	≥1% DARH for total WI
Negligible (C1)	Impacts may have small or non-existent effects within the WI.	≥0.5% deficit on total WI Load	≥0.5% DARH for total WI

The highest impact for any single factor

Infrastructure Adequacy

Ensure sufficient infrastructure (transmission facilities, substations, BPS) to transmit energy to the local distribution company. (e.g., DP, LSE)

Infrastructure Adequacy Factor

Infrastructure Adequacy Impact—How could a typical event* affect WI BPS Reliability?		Physical Transmission Factor #1
Severe (C5)	Impacts may have widespread effects on the WI.	±500kV and ≥5000 MW transmission facilities or major DC
Major (C4)	Impacts may have widespread effects on multi-subregions within the WI.	±500kV and ≥3000 MW transmission facilities or major DC
Moderate (C3)	Impacts may have widespread effects on a subregion within the WI.	≥345kV and ≥2000 MW transmission facilities or major DC
Minor (C2)	Impacts may have effects on an entity within the WI.	≥230kV and ≥1000 MW transmission facilities
Negligible (C1)	Impacts may have small or non-existent effects within the WI.	≥230kV and ≥500 MW transmission facilities

The highest impact for any single factor

Operational Adequacy

Ensure the BPS operation (people, process, tools, & best practice) is reliable*, secure, and compliant for normal and reasonable emergency operations.

Operational Adequacy Factors

Operational Adequacy Impact—How could a typical event* affect WI BPS Reliability?					
	Unplanned Generation Factor #1a	**Frequency Factor #1b**	**Transmission Factor #2**	**Inoperability Factor #3**	**Resource Mix^ Factor #4**
Severe	≥4000 MW loss instantaneous	<59.3Hz	±500kV and ≥5000 MW transmission facilities or major DC	BA/TOP ≥500kV and ≥10% of WI Load	80% of WI On-line ND Generation
Major	≥2000 MW loss instantaneous	<59.5Hz	±500kV and ≥3000 MW transmission facilities or major DC	BA/TOP ≥500kV and ≥5% of WI Load	75% of WI On-line ND Generation
Moderate	≥1000 MW loss instantaneous	<59.6Hz	≥345kV and ≥2000 MW transmission facilities or major DC	BA/TOP ≥345kV and ≥2.5% of WI Load	70% of WI On-line ND Generation
Minor	≥500 MW loss instantaneous	<59.75Hz	≥230kV and ≥1000 MW transmission facilities	BA/TOP ≥230kV and ≥1.0% of WI Load	65% of WI On-line ND Generation
Negligible	<500 MW loss instantaneous	<59.90Hz	≥230kV and ≥500 MW transmission facilities	BA/TOP ≥230kV and <1.0% of WI Load	60% of WI On-line ND Generation

The highest impact for any single factor

*Typical Event

- Natural: The most impactful event likely to occur in the next 50 years (1-in-50-year event)
- Human-made: The most influential event likely to occur within 10 years
- Inherent: The most influential event likely to occur based on the current BPS design or the planned design (if the risk is based on a potential future state, i.e., 10- to 20-year planning)

Risk Initiation

- Removed requirement for initiation form for risk submittal in favor of contacting risk@wecc.org and collaborating with WECC staff and the submitter.
- WECC will conduct an interview or other collaboration to develop any risk for screening.

Risk Treatment Options

- **Accept:** retain the risk by making an informed decision. Taking or increasing the risk to pursue an opportunity. This includes acceptance of the current activities addressing the risk.
- **Reduce:** further action is required to remove the risk source; change the likelihood; or change the consequences.
- **Transfer:** sharing the risk (e.g., buying insurance, efforts led by others).
- **Avoid:** avoid the risk by deciding not to start or continue with the activity that gives rise to the risk.
- **Blank:** further analysis acknowledgement.

WECC

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