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## **RRC Risk Management Process**

February 14, 2023

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## Introduction

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The RRC Risk Management Process was created to provide a structured approach to address known and emerging reliability and security risks within the Western Interconnection. With input from stakeholders, this process allows for risks to be identified, prioritized, monitored, and mitigated to help improve reliability and security.

The process was created using the principles found in the ISO 31000 Risk Management Process. Using these principles, a customized process was developed to fit with the core activities already established at WECC and with the industry. This customized approach:

- Provides a structured framework for the RRC to prioritize efforts in addressing risks and monitor the effectiveness of those actions.
- Avoids duplication of known work and provides the RRC the ability to build on the successes of others by becoming involved and partnering with other organizations and industry experts.
- Provides a necessary feedback process for any additional prioritization or mitigation efforts needed and overall program improvements.

## Purpose

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The RRC Risk Management Process is core to the purpose of the RRC, and it addresses the following objectives stated in the Purpose and Responsibilities section of the RRC Charter:

The RRC will:

1. Evaluate the reliability and security risks associated with relevant commercial, operational, and other industry practices.
2. Work with WECC staff and the Reliability Assessment Committee (RAC) to develop and maintain an ongoing, prioritized list of known and emerging reliability and security risks facing the Western Interconnection.
3. Coordinate and collaborate with WECC staff and the RAC to address high-priority risks.
4. Start addressing high-priority risks through the proper expertise and means.

## Document Owner

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The RRC owns this document.

The RRC Risk Management Process is a living document; it is expected that improvements to this process will be made regularly. WECC staff may update this document to reflect those changes and communicate them through the RRC SG for awareness. The appendixes in this document should be reviewed as changes are made to the process.



## Scope

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This process applies to the RRC and to all stakeholders (ex., registered entities, government officials, WECC committees) across the Western Interconnection.

## Stakeholder Communication and Engagement is Critical

Communication with stakeholders and experts within the industry is an essential part of a risk management process. Because the RRC Risk Management Process relies on stakeholder input, stakeholder engagement and participation in the process is critical to its success. RRC members are also encouraged to engage with others in the industry to better understand the known and emerging reliability and security risks and to bring that knowledge to the RRC for input and discussion. There are several opportunities in this process for the RRC to reach out to the industry for input. The process does not specify how or when this should be done; rather, it allows the RRC members to decide the best ways to gather input.

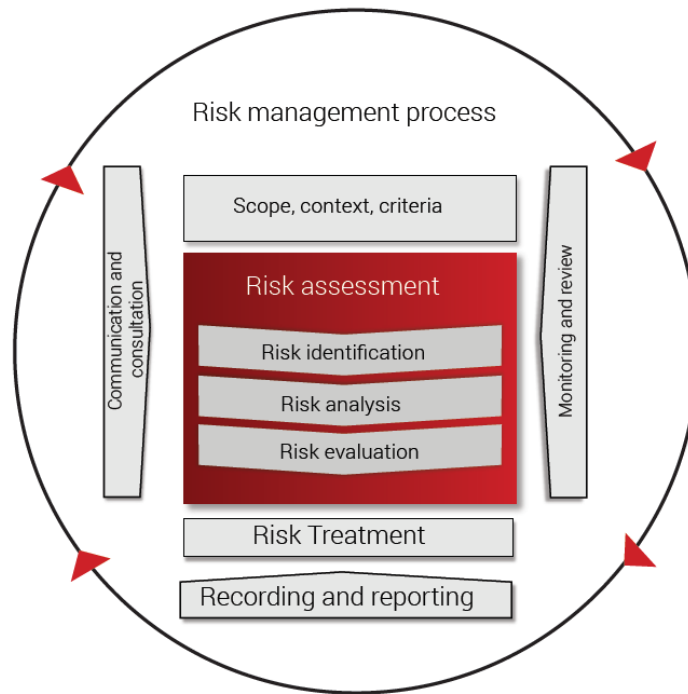
As various stakeholders will have different communication needs and expectations, the RRC should tailor their communications to these needs whenever possible. These communications should:

- Encourage stakeholder engagement and accountability;
- Share information to reduce uncertainty;
- Meet the reporting and assurance needs of stakeholders;
- Ensure that relevant expertise is used to inform each step of the process; and
- Inform other entity processes such as corporate planning and resource allocation.

## Process

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The RRC Risk Management Process is based on the ISO 31000 industry standard framework shown in Figure 1, the principles in [Appendix 1](#), and the attributes in [Appendix 2](#).



**Figure 1: ISO 31000 industry standard framework.<sup>1</sup>**

This framework diagram contains a set of steps in the center, flanked by processes that occur throughout the steps. While the RRC Risk Management Process closely aligns with the ISO 31000 framework, it has been customized to meet the specific needs of the RRC.

The RRC Risk Management Process contains steps, periodic activities, and ongoing activities.

The five steps reflect the middle of the framework diagram:

1. Risk identification;
2. Risk analysis;
3. Risk evaluation;
4. Risk treatment; and
5. Recording and reporting.

The ongoing activities reflect the right-hand portion of the framework diagram, “Monitoring and Review,” and include ongoing monitoring and review of:

1. The risks examined through the process; and
2. The effectiveness of the process itself.

The periodic activities reflect the left-hand portion of the framework diagram, “Communication and Consultation,” and include communication and consultation to:

<sup>1</sup> E. LaChapelle, F. Aliu, and E. Emini, “ISO 31000: 2018 Risk Management—Guidelines,” PECB, 2018.

1. Develop a periodic risk report; and
2. Carry out a periodic risk prioritization activity.

The process references and uses several other supporting documents found on the RRC webpage. These include:

1. RRC Risk Register Initiation Form
2. RRC Risk Register
3. RRC Risk Process Flowchart

## Five Steps of Risk Management

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Each reliability and security risk examined through the RRC Risk Management Process progresses through the five steps shown in the diagram below. Each of these steps includes responsibilities for WECC staff, RRC members, and other stakeholders as needed. WECC staff is responsible for the documentation for each step but will collaborate with the RRC members in developing that documentation.



Figure 2: Five risk management steps.

### Step 1: Risk Identification

#### Overview

The purpose of this step is to develop a comprehensive and tailored list of existing and potential risks that are likely to negatively affect the reliability and security of the Western Interconnection. The list

should be documented with important information identified for each risk, such as the potential cause and consequence of the risk. Several approaches can be used during the risk identification step. These can be sophisticated and highly structured, or more informal, such as a consensus of industry experts, depending on the purpose and context of the assessment being done.

It is important that the risk process identifies a wide array of risks and not be too narrow or constrained. The risk identification step can suffer by focusing on only today's challenges and not considering risks that could emerge in the future.

No single group or entity has a complete understanding of known and emerging reliability and security risks facing the Western Interconnection; every individual or group understands risks based on their perspective. Therefore, it is important that the RRC Risk Management Process consider many perspectives to capture the complete picture of risks across the interconnection.

Because the success of the process depends on this breadth of perspective, the Risk Identification step relies heavily on stakeholder input. Without active RRC and stakeholder participation, the process will be limited in how effectively it accomplishes its reliability mission as stated in its charter:

*The purpose of the RRC is to identify and address known and emerging risks to the reliability and security of the Western Interconnection.*

One way this breadth of perspective is achieved is through the RRC's continuous partnership with other stakeholders (e.g., WECC/NERC committees, WIRAB, E-ISAC, and WECC Members) working within existing processes to identify risks to the reliability and security of the Western Interconnection. Through this partnership, the RRC can help prevent duplication of work and use existing processes and programs to identify and analyze the risks to be documented in the RRC Risk Register.

For example, by using existing processes that identify risks, the RRC can work with the stakeholders involved to help identify and understand the risks. This includes working with stakeholders to determine the probability and magnitude of the risk as it applies to the Western Interconnection. Some of these existing processes and stakeholders that the RRC can use to help identify risks are:

- WECC/NERC technical committees, industry forums, and associated subject matter experts;
- Compliance monitoring activities;
- Reliability assessments (ex., WECC WARA, NERC SOR);
- ERO events analysis;
- Analysis of availability data systems (ex., BASS, TADS, GADS, DADS, MIDAS);
- Frequency response, inertia, and other essential reliability service measurements and their reports;
- Interconnection simulation base case quality and fidelity metrics;
- NERC's Reliability Issues Steering Committee (RISC) Biennial Risk Report;
- Regional risk assessments;



## RRC Risk Management Process

- Communication with external parties (ex., WIRAB, E-ISAC, DOE, DHS); and
- Shared public or government intelligence with special emphasis on cybersecurity.

The RRC may request an existing WECC committee to study or provide expertise to help understand a given risk. The RRC may also create a task force or partner with other stakeholders as needed.

### ***Risk Identification Process***

General responsibilities for WECC staff include:

- Employ and coordinate expertise from across the organization, examine risks holistically, consolidate risks identified across multiple groups, and bring them to the RRC.
- Ensure that data confidentiality is upheld with any risks it submits through the RRC process.
- Facilitate a successful Risk Identification as outlined below.
- Ensure that documentation is complete, accurate, and archived in an orderly way.

General responsibilities for RRC members and other stakeholders include:

- Have discussions within their organizations about known and emerging reliability and security risks the organization is experiencing or sees on the horizon.
- As part of participation in forums, work groups, and initiatives internal and external to WECC, engage with those groups to understand known and emerging risks.
- Bring risks identified in these interactions to the RRC by submitting them to the RRC for consideration.

There are three parts of Risk Identification:

1. Populate the RRC Risk Register Initiation Form.
2. RRC Steering Committee Screening.
3. Enter the risk into the RRC Risk Registry.

These parts are described below.

### ***Population of the RRC Risk Register Initiation Form***

1. Reliability and security risks are submitted to the RRC for consideration by populating the RRC Risk Register Initiation Form ([Link](#)). This form must be used for any risk to be considered for the RRC Risk Management Process.
2. Any stakeholder may submit risks to the RRC using this form.
3. The RRC Risk Register Initiation Form can be downloaded from the RRC webpage.
4. The form contains instructions on how to submit it once it is populated.
5. WECC staff will review RRC Risk Register Initiation Form submissions for correctness and completion and will address any issues with the submitter.
6. WECC staff will review each submission against the RRC Risk Register to ensure there is no duplication or overlap with existing entries.



*RRC Steering Committee Screening*

1. WECC staff will provide complete RRC Risk Register Forms to the RRC Steering Committee (RRCSC) for its review and screening.
2. The RRCSC will screen each submitted RRC Risk Register Initiation Form and determine whether to include the risk into the RRC Risk Registry.
3. WECC staff will enter each screened submission into the RRC Risk Register.
4. For any risk that does not pass the screening, the RRCSC will develop a rationale describing why the risk did not pass the screening.
5. WECC staff will provide this rationale to the submitter and will file this documentation along with the submitted risk in a document archive.

*Risk Entry into the RRC Risk Registry*

1. WECC staff will enter each screened risk into the RRC Risk Registry using the template on the WECC website ([Link](#)).
2. Entry into the RRC Risk Registry triggers subsequent steps in the RRC Risk Management process for that risk.
3. The RRC Risk Registry resides on the RRC webpage of WECC's website and will be updated as entries are made (or on a periodic basis if frequent changes are made).

**Step 2: Risk Analysis****Overview**

The purpose of Risk Analysis is to understand and document the causes, nature, and time-related factors associated with the risk and to rate the potential impact of each risk according to its likelihood of occurrence. The combination of impact and likelihood determines the severity of the risk. The RRC process uses the Reliability Risk Matrix developed by the Electric Reliability Organization (ERO).

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



<b>Consequence/Impact—How could a typical event due to this risk effect BPS Reliability?</b>	
Severe (C5)	Impacts may have widespread effects to the BPS across North America.
Major (C4)	Impacts may have widespread effects to the RC area.
Moderate (C3)	Impacts may have widespread effects to portions of the RC area.
Minor (C2)	Impacts may have effects on the local entity.
Negligible (C1)	Impacts may have small or non-existent effects to the BPS.

<b>Likelihood—What is the reasonable probability that consequences will occur?</b>	
Almost Certain (L5)	Mandatory Controls—No NERC Reliability Standards in place for mitigation. Emerging Trends—Increasing trends have been identified. Event History—Documented events or widely publicized exploits have been recorded.
Likely (L4)	Mandatory Controls—No NERC Reliability Standards in place for mitigation. Emerging Trends—Some trends have been identified. Event History—Documented events, or generally publicized exploits have been recorded.
Possible (L3)	Mandatory Controls—NERC Reliability Standards in place for limited mitigation. Emerging Trends—Some trends have been identified. Event History—No documented events, or moderately publicized exploits have been recorded.
Unlikely (L2)	Mandatory Controls—NERC Reliability Standards are in place for mitigation. Emerging Trends—Some trends have been identified. Event History—No documented events, or minimally publicized exploits have been recorded.
Very Unlikely (L1)	Mandatory Controls—NERC Reliability Standards in place for mitigation. Emerging Trends—No known trends identified. Event History—No documented events or publicized exploits have been recorded.

As there are different processes for analyzing the impact and likelihood of the risk, it is important that each risk is assessed consistently based on a constant set of criteria. Where risks are identified in other organizations, good communication is required to ensure each stakeholder understands the ownership and severity of the risks.

The Risk Analysis step also includes an analysis of time-related factors, which may include:



1. Risk timing—Is the risk prevalent today, is it expected to occur five years from now, or more than 10 years out?
2. Risk velocity—How much time does it takes for a risk event to manifest itself? In other words, the time between the occurrence of an event and the point at which its effects are felt.
3. Risk trending—Is the risk increasing or decreasing over time?

### ***Risk Analysis Process***

General responsibilities for WECC staff:

- Lead the Risk Analysis step with support and collaboration from RRC members.
- Obtain and incorporate RRC feedback as needed throughout the step.
- Facilitate a successful Risk Identification.
- Ensure that documentation is complete, accurate, and archived in an orderly way.

General responsibilities for RRC members and points of contact:

- Work with WECC staff to understand the causes, nature, and time-related factors associated with the risk.
- Provide feedback and support in the assessment of the likelihood and impact of the risk.
- Review the documents resulting from the Risk Analysis step, engage in discussion with subject matter experts within your organization (and others as needed), and provide feedback.

The primary sources of information used to support this analysis should be provided in the RRC Risk Register Initiation Form in Step 1: Risk Identification. If the information is not included in this step, or the RRC agrees the information provided is not sufficient to warrant the classification, the RRC can request additional analysis to be done by a WECC committee or taskforce, as well as other stakeholders as needed.

Depending on the complexity of the risk, additional data and analysis may be required to better understand the potential impacts of the risk. Such changes should be performed as necessary but include potential risk mitigation tactics. If data is not available, the RRC may use input from subject matter experts (ex., WECC Cyber Security Forum, industry survey) to help with risk analysis. If similar risks are shared among the ERO, the RRC should ensure communication with the appropriate stakeholders (ex., NERC RISC) to understand the severity of the risk and coordinate efforts to address it.

## **Step 3: Risk Evaluation**

### ***Overview***

The purpose of Risk Evaluation is to support decisions. This step builds on Risk Analysis to determine activities already underway to mitigate the risk, to determine the tolerability of the risk, and to rank the risk relative to other risks. Tolerability is different than the severity identified in Risk Analysis, as it



helps determine which risks need treatment and their ranking. This evaluation includes comparing the severity of the risk to the level of acceptable risk. Decisions on risk prioritization should include a broad range of factors and be vetted by stakeholders or experts within the interconnection for their feedback.

When determining risk tolerability, the RRC should consider common factors and track them in the Risk Register or other documentation. These factors help the RRC make informed decisions about the ranking of various risks. Some factors to consider when determining risk tolerability are:

- The output and documentation from Risk Analysis;
- How the risk may be combined with other similar risks in the Risk Register;
- Whether mitigation is expected to be a one-time action or ongoing (ex., required processes or standards)
- Whether there is previous experience with the known events to understand the cause or exacerbation of the risks, or whether no experience exists but the probability is growing (ex., cybersecurity or physical security);
- Whether (and the extent to which) the risk is being addressed by other groups (NERC, IEEE, etc.);
- Whether previous mitigation efforts have been used and, if so, why they were not effective;
- Whether there are actions that can be taken that can help to mitigate the risk (can we have an impact?);
- How the risk might change if no mitigations occur; and
- Whether the risk is caused by human activity or by natural causes.

These are only a few sample factors to consider when determining risk tolerability. The RRC should carefully consider a broad range of factors when determining risk tolerability.

### ***Risk Evaluation Process***

General responsibilities for WECC staff:

- Lead the Risk Evaluation, with support and collaboration from RRC members.
- Obtain and incorporate RRC feedback as needed throughout the step.
- Facilitate a successful Risk Identification.
- Ensure that documentation is complete, accurate, and archived in an orderly way.

General responsibilities for RRC members and points of contact:

- Help WECC staff determine whether any activity is already underway that is addressing this risk.
- Help WECC staff determine the tolerability of the risk and rank the risk.
- Review the documents from the Risk Evaluation, discussion the evaluation with subject matter experts within your organization (and others as needed), and provide feedback.



The Risk Evaluation Process has three primary components:

1. Identify activities underway to mitigate the risk.
2. Determine the tolerability of the risk.
3. Rank the risk.

#### *Identify Activities Underway to Mitigate the Risk*

1. Conduct research to determine whether any activity is already underway that is addressing this risk, either directly or indirectly. This can include activities within industry groups (such as NERC, E-ISAC, IEEE, CIGRE), within WECC member entities, or other groups outside the electric power industry (natural gas, telecommunications, and others).
2. The research should determine the overall objectives of the activity and the degree to which the activity addresses the risk.
3. Determine whether any RRC members are involved in the activity. If not, strong consideration should be given to having RRC representation in the activity. It is important that the RRC not duplicate efforts, but instead join existing efforts to mitigate known or emerging risks.

#### *Determine the Tolerability of the Risk*

1. This is done by evaluating the outcome of the Risk Analysis and any current activity already underway to mitigate the risk, and assessing the factors considered for determining risk tolerability.
2. Determining risk tolerability can lead to a decision to:
  - a. Do nothing further;
  - b. Consider risk treatment options;
  - c. Undertake further analysis to better understand the risk;
  - d. Maintain existing controls; or
  - e. Reconsider objectives.

#### *Ranking the Risk*

Ranking the risk involves ordering the set of risks within its category from most significant to least significant based on the outcome of the Risk Analysis step.

### **Step 4: Risk Treatment**

#### ***Step Overview***

Risk treatment is the action taken in response to the risk evaluation, where it has been agreed that controls in place are deemed ineffective and additional mitigation activities are required. The purpose of the Risk Treatment step is c.



## RRC Risk Management Process

Risk treatment is an ongoing process in which individual risk treatments (or combinations of treatments) are assessed to determine whether they are adequate to bring the residual risks to a tolerable level. If not, then new risk treatments are generated and assessed until a satisfactory level of residual risk is achieved. Stakeholder feedback in Step 3 will be used to provide support or ideas when developing treatment options or if treatments can be implemented collaboratively among other groups.

Examples of treatment activities can include the development of:

- Reliability Standards;
- WECC Criteria;
- NERC Reliability Guidelines;
- Lessons learned;
- Best practices;
- WECC assist visits;
- Technical conferences, workshops, and educational programs;
- Operations practices;
- Recommendations for action involving other groups; and
- Specific plans of action.

### ***Risk Treatment Process***

Risk treatment involves a process of:

1. Identifying activities that could mitigate the risk;
2. Evaluating the expected effectiveness of each activity;
3. Determining the expected reduction in risk resulting from each activity;
4. Deciding whether the expected remaining risk is acceptable for each activity;
5. Selecting the activities to be undertaken;
6. Planning the activities; and
7. Executing and tracking the activities.

The RRC will track the identified treatments and make updates as needed at the meetings. The information for the treatments that will be tracked can include:

- Reasons for treatment selection, including expected benefits and potential hazards;
- Accountabilities for approving the plan and responsibility for its enactment;
- Resource requirements;
- Reporting, assurance, and monitoring requirements; and
- Priorities, timing, and schedules.

Roles and responsibilities for the Risk Treatment step can vary for each risk. In general, WECC staff and RRC members will work together in this step; however, WECC staff will facilitate the successful



administration and tracking of activities and ensure that documentation is complete, accurate, and archived in an orderly way.

## Step 5: Recording and Reporting

Recording and Reporting is the last step in the lifecycle of each risk entered into the Risk Registry. A risk management process is most effective when it is well documented and shared. Reporting should consider the informational needs of stakeholders and the usefulness of information for industry planning and decision-making. While the word “reporting” is in this step, it does not refer to the periodic RRC Risk Report. Instead, it refers to reporting that is determined appropriate for the specific risk, whether it be to the other WECC or NERC committees, decision-makers, or the WECC Board of Directors.

The RRC and WECC staff will determine the appropriate level of reporting for each risk progressing through the five steps of the RRC Risk Management Process.

### ***Recording***

WECC staff is responsible for documentation associated with each step of the RRC Risk Management Process. Because this step concludes the activity for each risk, it is important that all the documentation for each risk reaching this step is accurate, orderly, and complete. This documentation provides a record of and justification for decisions and preserves the results of assessment for future use. The types of documentation for each risk may vary; however, each risk will have a core set of documents in common.

WECC staff is responsible for:

1. Recording these documents and any others.
2. Ensuring that data is handled appropriately regarding confidentiality.
3. Facilitating transparency through posting documents on the RRC webpage.

### ***Reporting***

Information about each risk that reaches this step should be reported in the appropriate way. Each risk is unique and could have a different need for communication. WECC staff and RRC members must determine the information sharing required for each risk at this stage and must execute that communication.

## Ongoing and Periodic Activities

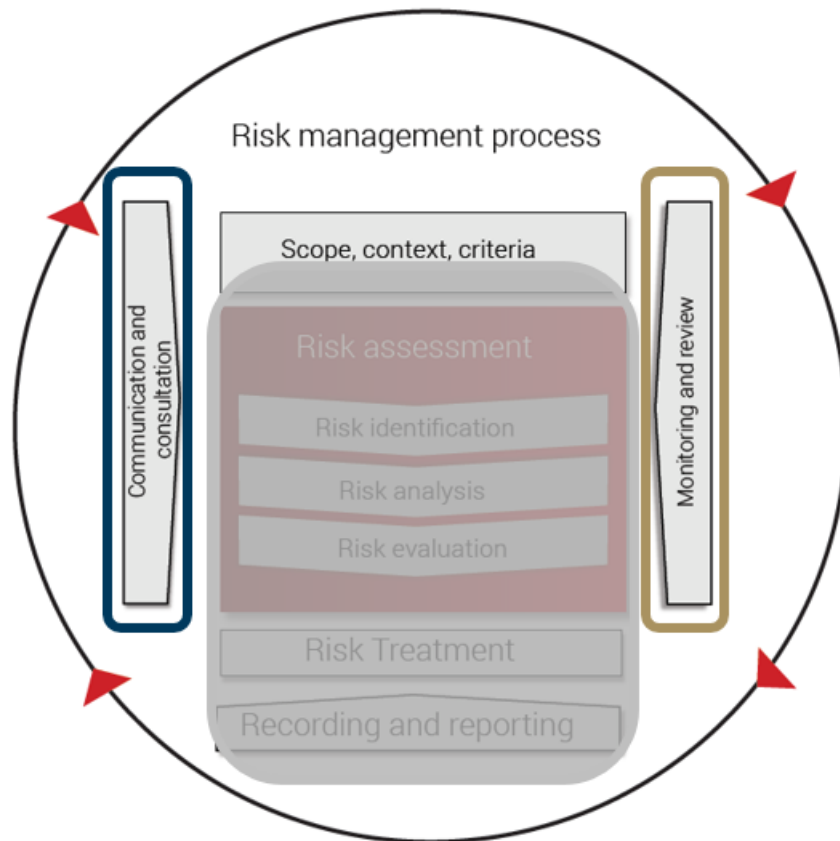
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While each risk progresses through the five steps, other activities occur on either a periodic or an ongoing basis.



## RRC Risk Management Process

The ongoing activities reflect the right-hand portion of the framework diagram “Monitoring and Review,” circled in gold, and the periodic activities reflect the left-hand portion of the framework diagram “Communication and Consultation,” circled in blue.



### Ongoing Activities—Monitoring and Review

These activities include ongoing monitoring and review of:

1. The risks examined through the RRC Risk Management Process; and
2. The effectiveness of the RRC Risk Management Process itself.

#### ***Ongoing Monitoring and Review of Risks***

Because risks can change over time, continuing to monitor and review certain risks can help determine the effectiveness of mitigation activities and ensure that the risks remain at acceptable levels. The level of review should be appropriate to the rate at which the risk is occurring or changing. Risks at each stage of the process should be reviewed continually.

As actions are performed to reduce the risk, the RRC may require certain risks to be monitored and reviewed through ongoing performance measures to ensure those risk mitigation activities are effective and that the residual risk is acceptable. When the RRC determines that this course of action is required,

the RRC will collaborate with other parties (ex., WECC Committee, AG, National Lab, NERC) to determine the appropriate group to perform this action.

An important aspect of reviewing risks continually is ensuring that the Risk Register is kept up to date. WECC staff will be responsible for ensuring the Risk Register is updated continually.

Risks that remain in the Risk Register will be reviewed through each step of this program. This will ensure that no risk and associated activities become “stale” and will allow the RRC to receive additional information to help determine whether changes in the prioritization or additional mitigating actions are required.

### ***Ongoing Monitoring and Review of the RRC Risk Management Process***

The RRC Risk Management Process helps the RRC identify and address known and emerging risks to the reliability and security of the Western Interconnection. While this process is based on sound risk management practices, no process is perfect. It is important that the RRC and WECC staff continually review the RRC Risk Management Process and make changes as necessary to increase its effectiveness.

The RRC is encouraged to regularly review and discuss the process and to continually identify opportunities for improvement.

### **Periodic Activities—Communication and Consultation**

Communication and consultation occur throughout the RRC Risk Management Process. The RRC Risk Framework Drawing ([Link](#)) contains a diagram and a corresponding table that describes interactions that occur throughout the process. Although communication and consultation are ongoing, there are certain activities that are periodic in nature. These include communication and consultation to:

1. Develop a periodic risk report; and
2. Carry out a periodic risk prioritization activity.

#### ***Periodic Risk Report***

The RRC will work with WECC staff to develop a periodic report showing the RRC’s progress on identifying and addressing known and emerging reliability and security risks. The RRC and WECC staff will work together to determine the periodicity and scope of the report.

The RRC may call on the expertise of other stakeholders as needed to help create or review the report. To the extent possible, recommendations and suggestions for risk mitigation should be included or referenced in the report to help registered entities become more aware of and reduce risk to their individual systems. Some of the objectives of the report may include:

- Bring awareness of the current risks and associated activities or outcomes.
- Provide information on industry recommendations or lessons learned.



## RRC Risk Management Process

- Provide information for stakeholders to understand the process and how to engage with the RRC.

### **Periodic Risk Prioritization Activity**

The RRC will work periodically with WECC staff to identify WECC's top Reliability Risk Priorities. This prioritization activity should consider the RRC Risk Report and should be developed through broad participation from stakeholders in the Western Interconnection. Historically, WECC has developed its Reliability Risk Priorities every two years through a targeted outreach program. This outreach will continue, but will be enhanced and informed by the RRC's periodic Risk Report and by the RRC's participation and engagement.

WECC staff will coordinate internally and will work with the RRC in planning and executing the periodic Risk Prioritization activity.

### **Revision History**

Date	Version	Reviewer	Revision Description
Feb. 8, 2023	1	Chad Coleman	technical edit

### **Approvals**

Date	Version	Approver

*This process supersedes and revokes all past policies and practices, oral and written representations, or statements regarding terms and conditions of employment concerning the subject matter covered herein. WECC reserves the right to add to, delete, change, or revoke this process at any time, with or without notice. This process does not create a contract between WECC and any employee or contractor, nor does it create any entitlement to employment or any benefit provided by WECC to its employees or contractors.*

*Caution! — This document may be out of date if printed.*



## Appendix 1: RRC Risk Management Process Principles

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The following principles were developed to guide the creation of the RRC Risk Management Process.

1. **Reflects a customized approach**—The RRC’s risk management approach should be customized to their own needs, including the RRC’s objectives and the external and internal context in which the RRC operates. The RRC’s purpose is to identify and address known and emerging reliability and security risks to the Western Interconnection. Accordingly, the RRC’s risk management process should be tailored to that objective.
2. **Relies on a clear and inclusive process and fosters a culture of engagement**—Active and timely engagement from stakeholders enables their knowledge, views, and perceptions to be considered and is critical to the success of the RRC risk management process. This results in improved awareness and informed risk management. The RRC’s process will be clear and will rely on input from RRC members and others, including the Joint Guidance Committee (JGC), the Reliability Assessment Committee (RAC), and WECC staff.
3. **Represents a structured and comprehensive approach**—A structured and comprehensive approach to risk management contributes to consistent and comparable results. It is critical that the design specifications of the RRC’s risk management process ensure a structured and comprehensive approach.
4. **Ensures dynamic evolution**—Risks can emerge, change, or disappear as the RRC’s context changes. Risk management anticipates, detects, acknowledges, and responds to those changes and events in an appropriate and timely manner.
5. **Uses the best available information**—The inputs to risk management are based on historical and current information, as well as on future expectations. Risk management explicitly considers any limitations and uncertainties associated with such information and expectations.
6. **Applies rigorous analysis**—Rigorous, quantitative analysis is applied to available historical and present operating data to identify and evaluate existing and emerging risks. This analysis is used to feed future projections. Because the future is unknown and subject to change, qualitative interpretations and assumptions will be necessary to effectively rank and prioritize existing and emerging risks.
7. **Ensures that roles and responsibilities are clear**—The risk management process should consider the human factors and ensure that everyone knows their roles at each stage of the risk management process.
8. **Facilitates continual improvement**—Risk management is continually improved through learning and experience.

## Appendix 2: RRC Risk Management Process Attributes

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The RRC Risk Management Process should:

1. Cover the full range of reliability and security risks broadly—i.e., the "risk universe."
2. Address getting the risk from "out there" to being in our database. Understand and document where and how risks are "taken in" by the RRC.
  - a. Includes taking in risks from WECC staff and the RRC, per the charter.
3. Clarify the risk. Broad or ambiguous risks need to be broken down into specific risks if possible.
4. Categorize the risks—use categories and sub-categories as appropriate.
5. Have a method of prioritizing the risks.
6. Have a method of determining the nature and degree of potential impact (consequences) and the likelihood of the risk occurring (i.e., likelihood of negatively affecting reliability and security).
7. Capture activities already occurring in the industry aimed at addressing those risks—who is doing what already? How is the RRC plugging into these initiatives?
8. Start with the risks we already know about.
9. Determine whether the risk is unique to the Western Interconnection.
10. Capture the relative time-based nature of the risk—immediate, near-term, mid-term, long-term.
11. Distinguish the impacts of risk throughout the various subregions—e.g., the risk is significant in the Pacific NW, but not as significant in the Desert Southwest.
12. Identify actions that can address the risk. Any action needs to be accompanied by a description of the desired outcome. This includes determining how those actions will affect the residual consequence and likelihood; i.e., the RRC process considers what we can affect, what we cannot affect, and all points in between.
13. Have a way of planning and executing any agreed-upon actions to be taken.
14. Have a way of tracking the progress of the agreed-upon actions.
15. Have a way of assessing the effectiveness of those actions once implemented.
16. Include a continual reassessment of risks and priorities as things change.
17. Make use of the best available information and data. The RRC process needs to determine the data or information needed to accomplish any step in the process.
18. Be continually evaluated and improved—not set in stone.

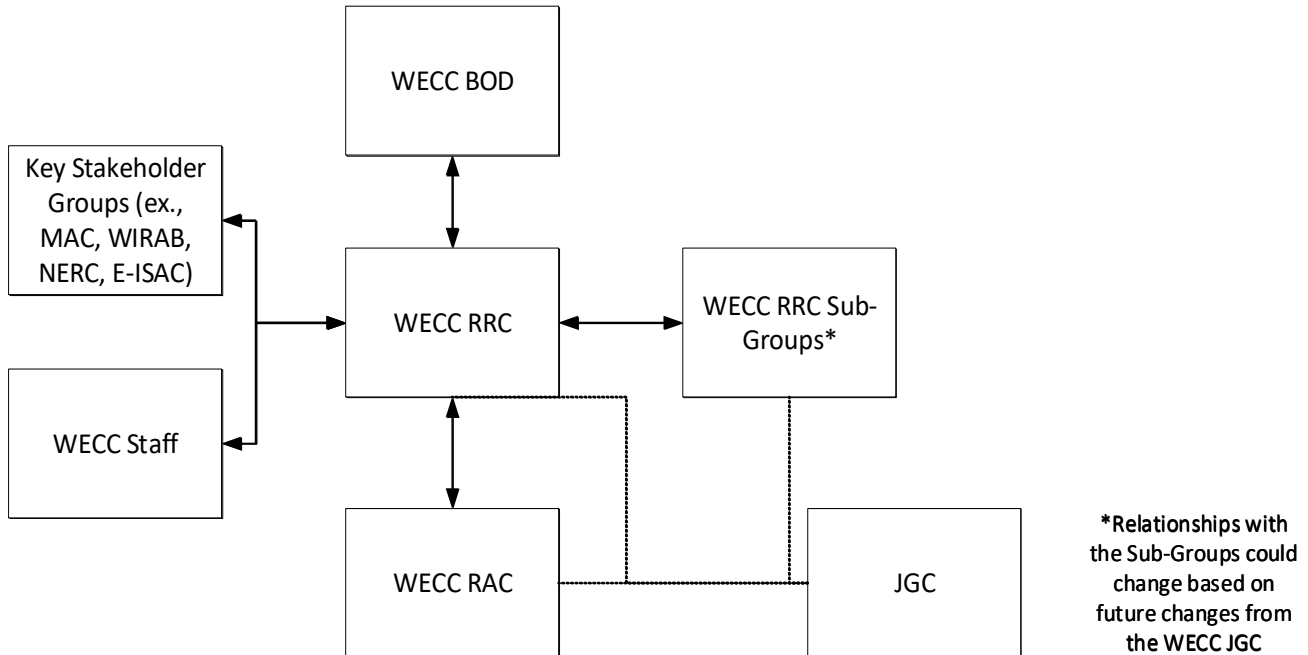
## **RRC Risk Management Process**

19. Respect confidentiality agreements.
20. Respect established industry processes (e.g., NERC RISC, EA, GADS/TADS/MIDAS, NERC/WECC committee work). In other words, our process should not focus on changing other processes; instead, we should make the best use of the processes that exist.

## Appendix 3: RRC Risk Management Structure Interactions

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The following diagram and table show the interaction between the various participants and the roles of those participants.



## Appendix 4: RRC Risk Roles and Responsibilities

Group	Roles
Board of Directors	<ul style="list-style-type: none"> <li>Review the RRC master list of interconnection risks and the prioritization and activities associated with those risks, then provide strategic direction as needed</li> </ul>
RRC	<ul style="list-style-type: none"> <li>Oversee the RRC risk management process to identify and address known and emerging reliability and security risks to the Western Interconnection</li> <li>RRC members coordinate inside and outside their organization to understand reliability and security risks and share those risks with the RRC for a holistic view of risks facing the Western Interconnection</li> <li>Develop the RRC master list of risks and identify and execute activities to address priority risks</li> <li>Create reports and make recommendations to the Board as necessary</li> <li>Provide guidance, training, and other outreach activities on the risk management process and risk priorities</li> </ul>
RRC Sub-Groups	<ul style="list-style-type: none"> <li>Execute strategic initiatives and projects assigned by the RRC</li> <li>Identify, monitor, and manage reliability and security risks in its area</li> <li>Work closely with the industry to formulate, create, or help implement mitigating procedures or practices and monitor the effectiveness of those activities</li> <li>Provide updates and information to the RRC regarding key risks (new or existing) to the interconnection and describe any mitigation efforts to address those risks</li> </ul>
RAC	<ul style="list-style-type: none"> <li>Coordinate and collaborate with the RRC to develop the list of known and emerging reliability and security risks and to address those risks as appropriate</li> </ul>
Key Stakeholder groups (ex., MAC, WIRAB, NERC, E-ISAC)	<ul style="list-style-type: none"> <li>Achieve a high-level understanding of RRC's approach to reliability and security risk management</li> <li>Engage with the RRC to help identify and address known and emerging risks</li> </ul>
JGC	<ul style="list-style-type: none"> <li>Review effectiveness of the RRC and its subgroups</li> <li>Ensure existing reliability issues are being adequately addressed by technical committees as needed and, if not, initiate technical committee work to address them</li> </ul>

**RRC Risk Management Process**

Group	Roles
WECC Staff	<ul style="list-style-type: none"><li>• Work with RRC members to develop and maintain the RRC risk management process</li><li>• Maintain the RRC risk register</li><li>• Provide input to the list of known and emerging reliability and security risks and associated mitigation activities for priority risks</li><li>• Support and contribute to the RRC's execution of its risk management process through data gathering, risk analysis, assessments, evaluation, tracking, and other relevant activities</li><li>• Maintain an ongoing dialogue with NERC on RRC activities</li><li>• Facilitate crossover between RRC and RAC</li></ul>
NERC	<ul style="list-style-type: none"><li>• Provide regular updates to RRC on NERC Reliability and Security Technical Committee (RSTC) activities</li><li>• Maintain an awareness of RRC activities</li></ul>