

ERO Enterprise Risk Factors and Risk Categories

ERO Enterprise Risk Factors

Below is the ERO Enterprise list of common Risk Factors and assessment criteria Compliance Enforcement Authority (CEA) use to complete the Inherent Risk Assessment (IRA) for a registered entity.

Risk Factors	Criteria For Assessment			
	N/A	Low Risk	Medium Risk	High Risk
Balancing Authority (BA) Coordination	Entity does not meet any of the identified criteria	Entity's BA Area has less than 5,000 MW of generation capacity	Entity's BA Area has between 5,000 - 10,000 MW of generation capacity	Entity's BA Area has greater than 10,000 MW of generation capacity
CIP – External Electronic Communication	Entity has no external electronic communication	Entity has external electronic communication within the Entity's own registration	Entity has external electronic communication only to NERC Registered Entities	Entity has external electronic communication to non-registered entities. i.e., any other 3rd party.
CIP - Impact Rating Criteria	Entity has no BES Cyber Systems (BCS)	Entity has one or more low impact BCS(s)	Entity has one or more medium impact BCS(s)	Entity has one or more high impact BCS(s)
CIP – Monitor and Control Capability	Entity has no monitor and control capability of generation	Entity has monitor and control capability of generation Cyber Assets, at a single location, with an aggregate impact less than 1500 MW	Entity has monitor and control capability of generation Cyber Assets, at a single location, with an aggregate impact of 1500 - 3000 MW	Entity has monitor and control capability of generation Cyber Assets, at a single location, with an aggregate impact greater than 3000 MW
Critical Transmission	Entity does not own, operate, coordinate, plan, design, or monitor the status of transmission facilities	Entity has less than three BES transmission interconnection points with neighboring entities	Entity has three or more BES transmission interconnection points with neighboring entities	Entity's system includes elements (owned or operated) of an IROL / Flowgate / Major Transmission Path (WECC) / Generic Transmission Limit (Texas RE) / Cranking Path
Largest Generator Facility	Entity does not own or operate any generating resource*	Entity's largest single (owned or operated) generating resource* nameplate rating is less than 500 MVA	Entity's largest single (owned or operated) generating resource* nameplate rating is between 500 - 1,000 MVA	Entity's largest single (owned or operated) generating resource* nameplate rating is greater than 1,000 MVA

Criteria For Assessment				
Risk Factors	N/A	Low Risk	Medium Risk	High Risk
Load	There is no Load served within the Entity's area/system	The peak Load served within the Entity's area/system within the last three calendar years is less than 500 MW	The peak Load served within the Entity's area/system within the last three calendar years is between 500 and 2000 MW	The peak Load served within the Entity's area/system within the last three calendar years is greater than 2000 MW
Generator Planned Facilities	Entity does not meet any of the identified criteria	Entity is planning on or currently building generating resources* that are less than 500 MVA in the next three years	Entity is planning on or currently building generating resources* that are between 500 and 1,000 MVA in the next three years	Entity is planning on or currently building generating resources* greater than 1,000 MVA in the next three years
Transmission Planned Facilities	Entity does not meet any of the identified criteria	Entity is planning on or currently building transmission facilities less than 200 kV in the next three years	Entity is planning on or currently building transmission facilities between 200 - 300 kV in the next three years	Entity is planning on or currently building transmission facilities greater than 300 kV in the next three years
RAS	Entity does not own any part of a RAS or have a RAS within its area	-----	Entity is a DP, GO, or TO that owns all or part of a limited impact** RAS - or - Entity is an RC or TOP that has a limited impact** RAS	Entity is a DP, GO, or TO that owns all or part of a RAS that has not been identified as limited impact** - or - Entity is an RC or TOP that has a RAS that not been identified as limited impact**
System Restoration	Entity is a GO and/or GOP and does not have a Blackstart Resource	-----	Entity is a GO and/or GOP and has Blackstart Resource(s)	Entity is an RC or TOP
Total Generation Capacity	Entity does not own or operate any generation resources*	Entity's total generation nameplate capacity* is less than 1,000 MVA	Entity's total generation nameplate capacity* is between 1,000 - 5,000 MVA	Entity's total generation nameplate capacity* is greater than 5,000 MVA

Criteria For Assessment				
Risk Factors	N/A	Low Risk	Medium Risk	High Risk
Transmission Portfolio	Entity does not own, operate, coordinate, plan, design, or monitor the status of transmission facilities	Entity has transmission facilities less than 200kV	Entity has transmission facilities between 200 - 300 kV - or - Entity has over 1,000 miles of transmission lines 100 kV or greater	Entity has transmission facilities greater than 300 kV - or - Entity has over 4,000 miles of transmission lines 200 kV or greater
UFLS Development and Coordination	Entity is not responsible for developing or coordinating a UFLS program	Entity is responsible for developing and/or coordinating a UFLS program for less than 1500 MW of load	Entity is responsible for developing and/or coordinating a UFLS program for 1500-7500 MW of load	Entity is responsible for developing and/or coordinating a UFLS program for greater than 7500 MW of load
UFLS Equipment	Entity does not own or operate UFLS equipment	Entity is responsible for less than 500 MW of load shed by a UFLS program established by the Planning Coordinator	Entity is responsible for 500-2500 MW of load shed by a UFLS program established by the Planning Coordinator	Entity is responsible for greater than 2500 MW of load shed by a UFLS program established by the Planning Coordinator
UVLS	Entity does not have any UVLS responsibilities associated with a UVLS Program established by the Transmission Planner or Planning Coordinator.	Entity is responsible for less than 100 MWs of load shed by a UVLS Program established by the Transmission Planner or Planning Coordinator	Entity is responsible for 100 - 500 MWs of load shed by a UVLS program established by the Transmission Planner or Planning Coordinator	Entity is responsible for greater than 500 MWs of load shed by a UVLS program established by the Transmission Planner or Planning Coordinator
Variable Generation	Entity does not meet any of the identified criteria	Less than 10% of the entity's BA Area total generation nameplate MVA is comprised of inverter-based resources	10% - 25% of the entity's BA Area total generation nameplate MVA is comprised of inverter-based resources	Over 25% of the entity's BA Area total generation nameplate MVA is comprised of inverter-based resources
Generator Voltage Control	Entity does not own or operate any reactive resources	Entity owns and/or operates generating resources* with a total reactive capability less than 100 Mvar	Entity owns and/or operates generating resources* with a total reactive capability between 100 and 500 Mvar	Entity owns and/or operates generating resources* with a total reactive capability greater than 500 Mvar

Criteria For Assessment				
Risk Factors	N/A	Low Risk	Medium Risk	High Risk
Transmission Voltage Control	Entity does not own or operate any reactive resources	Entity owns and/or operates reactive resources (excluding generating resources) with a total capability of less than 500 Mvar	Entity owns and/or operates reactive resources (excluding generating resources) with a total capability between 500 Mvar and 1000 Mvar	Entity owns and/or operates reactive resources (excluding generating resources) with a total capability greater than 1000 Mvar
Workforce Capability	Entity does not meet any of the identified criteria	Less than 25% of the entity's System Operators have less than 5 years of System Operator experience	Between 25 - 50% of the entity's System Operators have less than 5 years of System Operator experience	Greater than 50% of the entity's System Operators have less than 5 years of System Operator experience

* Includes generating Facilities and non-BES inverter based generating resources that either have or contribute to an aggregate nameplate capacity of greater than or equal to 20 MVA, connected through a system designed primarily for delivering such capacity to a common point of connection at a voltage greater than or equal to 60 kV

** A RAS designated as limited impact cannot, by inadvertent operation or failure to operate, cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations. (PRC-012-2)

Risk Categories

The complete list of Risk Categories and associated Reliability Standards are provided in the table below.

Risk Category	Description/Risk Failure	Related Standards*
Asset/System Identification	The identification and tracking of assets and BES Facilities is required and critical to BPS reliability. Failure to correctly identify, document, and track items may result in gaps and compromise the integrity and reliability of the BPS.	CIP-002 CIP-014 FAC-008 FAC-501-WECC PRC-002 PRC-005 TPL-001 TPL-008
Asset/System Management and Maintenance	BPS reliability depends on an entity's success in tracking, managing, and maintaining significant amounts of data, components, assets, and systems.	BAL-001-TRE CIP-003

Risk Category	Description/Risk Failure	Related Standards*
	The scope and complexity of this effort require programs to ensure that the entity effectively performs these activities. Failure to execute these programs can result in various types of lapses and may compromise the integrity and reliability of the BPS.	CIP-007 CIP-010 CIP-011 FAC-003 FAC-008 FAC-501-WECC PRC-005 PRC-006 PRC-006-NPCC PRC-006-SERC PRC-023 VAR-002 VAR-501-WECC
Asset/System Physical Protection	Failure to ensure the physical protection of BES assets could lead to access by unauthorized personnel. Such access might lead to actions that result in instability, uncontrolled separation or cascading within an Interconnection.	CIP-003 CIP-006 CIP-014
Emergency Operations Planning	Entities must have the necessary facilities, tools, processes, and procedures in place to prevent or respond to system events, emergencies, or unexpected conditions. Failure to develop adequate plans may result in gaps in processes, procedures, and tools, which may compromise of the integrity and reliability of the BPS.	BAL-007 CIP-008 CIP-009 EOP-005 EOP-006 EOP-008 EOP-010 EOP-011 EOP-012 IRO-014
Entity Coordination	Coordination among entities, both internally and externally, as well as with third-party suppliers and contractors, is necessary prior to making changes to the system or taking any actions that have a potential to impact another entity and in turn may impact the reliability and security of the BPS. Coordination should address risk associated with the operating horizon, planning horizons, and emergencies. Failure to coordinate may result in impact to the reliability and security of the BPS.	CIP-005 CIP-012 CIP-013 EOP-005 EOP-006 FAC-014 INT-006

Risk Category	Description/Risk Failure	Related Standards*
		INT-009 IRO-014 NUC-001 PRC-027
Identity Management and Access Control	Entities must develop controls to prevent or mitigate malicious or unintentional access to BES Cyber Assets. Failure to develop controls may compromise the integrity and operability of the BPS.	CIP-004 CIP-005 CIP-006 CIP-007 CIP-010 CIP-011 CIP-012 CIP-013 CIP-014
Long-term Studies/Assessments	Long-term studies and assessments in the planning horizon are used to evaluate whether the system can reliably operate in real-time. Activities supporting long-term studies and assessments include the following: • Correct identification and protection of transmission and generation assets • Properly designed plans for System Restoration from Blackstart Resources • Impact studies for new and revised facilities • Establishing correct methodologies to determine and communicate SOLs and transfer capabilities • Analysis of disturbances and misoperations • Proper design of UFLS and UVLS programs • Response to GMD events.	BAL-502-RF CIP-014 EOP-005 FAC-001 FAC-002 FAC-014 PRC-002 PRC-006 PRC-006-NPCC PRC-006-SERC PRC-010 PRC-028 TPL-001 TPL-007 TPL-008

Risk Category	Description/Risk Failure	Related Standards*
Modeling Data	Failure in any of the above activities will likely result in gaps and may compromise the integrity and reliability of the BPS. Simulation tools are mathematical models of individual components and their control systems, when applicable. These models form the building blocks of power system studies performed in the planning and operations horizons. Models that entities have verified to be accurate are critical to a range of reliability studies including transmission planning assessments and establishing SOLs and IROLs, as well as state estimation used for Real-time Assessments (RTA) and Operation Planning Assessments (OPA). The validity of those assessments is dependent on modeling data which includes, but is not limited to, correct Facility Ratings, verified generator real and reactive capability, and knowing how control systems respond to dynamic system conditions. Failure by applicable entities to provide that data in a timely manner and at intervals that will assure model accuracy during retirements and new construction, may compromise the integrity and reliability of the BPS.	FAC-008 FAC-011 FAC-014 IRO-010 IRO-018 MOD-025 MOD-026 MOD-027 MOD-031 MOD-032 MOD-033 PRC-002 PRC-028 TOP-003 TOP-010
Normal System Operations	Actions performed by operations personnel during real-time operations are necessary to maintain the security and reliability of the BPS. Failure to do any of the following may compromise the integrity and reliability of the BPS: • Consider the balancing resources within defined values • Appropriately capture and report defined events to required organizations • Monitor and analyze data needed to perform reliability functions, • Ensure proper communications with a predefined protocol	BAL-001 BAL-002 BAL-002-WECC BAL-003 BAL-004-WECC BAL-005 COM-002 EOP-004 IRO-001 IRO-002 IRO-006 IRO-006-EAST IRO-006-WECC

Risk Category	Description/Risk Failure	Related Standards*
		IRO-008 IRO-009 IRO-014 IRO-017 IRO-018 TOP-001 VAR-001 VAR-002 VAR-501-WECC
Operating During Emergencies/Backup & Recovery	Entities must take appropriate actions during an emergency, system event, or unexpected conditions that could result in instability, uncontrolled separation, or cascading outages within an Interconnection. These actions can include the following: • Ensure personnel are sufficiently prepared and have adequate access to the procedures, processes, tools, and facilities necessary to respond appropriately and effectively during a system event, emergency, or unexpected condition. • Ensure adherence to processes and procedures during a system event, emergency, or unexpected condition. • Ensure proper operation, availability and utilization of facilities and tools during a system event, emergency, or unexpected condition.	BAL-002 BAL-002-WECC CIP-008 CIP-009 EOP-005 EOP-006 EOP-008 EOP-011 EOP-012 IRO-014
Operational Studies/Assessments	Operational studies and assessments in the operations horizon are used to evaluate whether the system can reliably operate in real-time. Activities supporting operational studies and assessments include the following: • Correct calculation of Area Control Error (ACE) to ensure proper deployment of Regulating Reserve • Correct methodologies for determining and communicating SOLs	BAL-005 BAL-007 COM-001 EOP-010 FAC-011 FAC-014 IRO-002 IRO-008 IRO-010 IRO-018 TOP-002

Risk Category	Description/Risk Failure	Related Standards*
	- Ensuring that complete and comprehensive data is captured for Real-time Monitoring and Analysis capabilities - Proper design, operating plans, and response to GMD events - Interpersonal Communication capabilities and protocols between entities to support reliable system operations and prevent instability, uncontrolled separation, or cascading outages. Failure to produce operational studies and assessments used in the operations horizon to understand gaps may result in a compromise of the integrity and reliability of the BPS.	TOP-003 TOP-010
System Protection	The reliability of the BPS requires that adequate generation supplies meet the existing load during steady state and expected dynamic conditions. When faults or failures occur, the system must respond in a manner that isolates the problem but maintains the integrity of the BPS much as possible. The protection systems must be capable of identifying the location and type of problem and then isolating the appropriate part of the BPS while minimizing the disturbance to the remainder of the system. This requires the Protection Systems associated with the generation, transmission, and load to accurately detect system properties and respond appropriately to unsafe conditions. Protection System settings must allow control systems to provide a full range of control and allow the system to “ride-through” expected transients. Owners of interconnecting BPS devices and systems must coordinate the settings of their systems with the neighboring systems to ensure they interact in a manner to achieve the desired outcome and prevent unnecessary disconnection of equipment. The Protection System must also be prepared in a manner that will respond to Misoperations of the primary protection. Entities must identify and correct the source of those operational failures.	PRC-004 PRC-005 PRC-006 PRC-006-NPCC PRC-006-SERC PRC-010 PRC-019 PRC-023 PRC-024 PRC-025 PRC-026 PRC-027
Training	It is necessary for individuals/personnel/operators to have adequate knowledge and skills to ensure the reliability and security of the BPS. Failure to adequately train operating personnel may compromise the integrity and reliability of the BPS.	CIP-003 CIP-004 COM-002 EOP-005

Risk Category	Description/Risk Failure	Related Standards*
		EOP-006 EOP-012 PER-003 PER-005 PER-006
Inverter-Based Resources – BES	As increasing numbers of Inverter-Based Resources are interconnected to the BES, risk to reliability have been identified in the following areas: Critical infrastructure protection, Cold-weather preparedness, modeling data accuracy, system protection settings and ride-through capability, and voltage and reactive control.	CIP-002 CIP-003 CIP-012 EOP-012 MOD-025 MOD-026 MOD-027 MOD-032 PRC-005 PRC-024 PRC-027 PRC-028 PRC-029 PRC-030 VAR-001 VAR-002
Inverter-Based Resources – Non-BES	As increasing numbers of non-BES Inverter-Based Resources are interconnected to the BPS, risk to reliability have been identified in the following areas: Critical infrastructure protection, Cold-weather preparedness, modeling data accuracy, system protection settings and ride-through capability, and voltage and reactive control.	MOD-032 PRC-028 PRC-029 PRC-030 VAR-001 VAR-002

*Only displaying effective standards as of May 2026