Implementation Plan for Standard 200 — Operate Within Interconnection Reliability Operating Limits

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Prerequisite Approvals

The Determine Facility Ratings, System Operating Limits, and Transfer Capabilities Standard must be implemented before this standard can be implemented.

Applicability During Transition to Functional Model

The requirements in Standard 200 apply to entities performing various electric system functions, as defined in the functional model approved by the NERC Board of Trustees in June 2001. NERC is now developing standards and procedures for the identification and certification of such entities. Until that identification and certification is complete, these standards apply to the existing entities (such as control areas, transmission owners and operators, and generation owners and operators) that are currently performing the defined functions.

Retirement of Sections of Operating Policies

Many elements contained in Standard 200 address the same or similar performance objectives as sections of Operating Policy 2, Operating Policy 4, Operating Policy 5, and Operating Policy 9. To eliminate duplication and minimize confusion, the following sections of existing Operating Policies should be retired when this standard is implemented. Justification for these retirements is provided in the tables on the following pages.

Operating Policy 2:

- Standard A.1. (just last 2 bullets)
- Standard A.1.2.
- Standard A.2.
- Standard A.2.1.
- Requirement A.1.
- Requirement A.1.1.
- Requirement A.1.2.
- Requirement B.5.

Operating Policy 4:

- Requirement A.1.
- Requirement B.3.
- Requirement B.3.1.
- Requirement B.4.
- Requirement B.4.1.
- Appendix 4BA

Operating Policy 5:

- Requirement 5.C.1.
- Requirement 5.C.2.

Operating Policy 9:

- Requirement A.1.
- Requirement A.1.1.
- Requirement A.1.2.

Other Changes:

 Operating Policy 4, Requirement A.2. should be 'tagged' to note that the requirement is no longer applicable to system operators working for entities performing the reliability authority function, but is still applicable to system operators working for entities performing the transmission operator function.

Policy Retirements or Revisions

The following tables identify the sections of existing Operating Policies that shall be retired when this standard is implemented.

Policy 2 — Transmission Language in Policy	Standard 200 Replacement Requirement
Standard A.1. Basic reliability requirement regarding single contingencies. All CONTROL AREAS shall operate so that instability, uncontrolled separation, or cascading outages will not occur as a result of the most severe single contingency.	 204. 1.1. The reliability authority shall act or direct others to act to: Prevent instances where interconnection reliability operating limits may be exceeded. Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.
Standard A.I.2. Operating Security Limits. Operating Security Limits define the acceptable operating boundaries.	 201.1. The reliability authority shall identify and document which facilities (or groups of facilities) in the reliability authority's reliability area are subject to interconnection reliability operating limits. 201.2. The reliability authority shall identify each interconnection reliability operating limit within the reliability authority's reliability area. The reliability authority shall identify a T_v for each interconnection reliability operating limit.
Standard A.2. Return from OPERATING SECURITY LIMIT Violation. Following a contingency or other event that results in an OPERATING SECURITY LIMIT violation, the CONTROL AREA shall return its transmission system to within OPERATING SECURITY LIMITS soon as possible, but no longer than 30 minutes.	 204.1.1. The reliability authority shall act or direct others to act to: Prevent instances where interconnection reliability operating limits may be exceeded. Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.
Standard A.2.1. Reporting Non-compliance . Each violation of this Standard shall be reported to the Regional Council and NERC Compliance Subcommittee within 72 hours.	204.1.2. The reliability authority shall document instances of exceeding interconnection reliability operating limits and shall document and complete an Interconnection Reliability Operating Limit Violation Report for instances of exceeding interconnection reliability operating limits for time greater than T_v .

Policy 2 — Transmission Language in Policy	Standard 200 Replacement			
Requirement A.1. Policies for dealing with transmission security. CONTROL AREAS, individually and jointly, shall develop, maintain, and implement formal policies and procedures to provide for transmission security. These policies and procedures shall address the execution and coordination of activities that impact inter- and intra-Regional security, including: Equipment ratings Monitoring and controlling voltage levels and real and reactive power flows Switching transmission elements Planned outages of transmission elements Development of Operating Security Limits Responding to OPERATING SECURITY LIMIT violations.	 (Only highlighted items on the left should be retired.) 201.2. The reliability authority shall identify each interconnection reliability operating limit within the reliability authority's reliability area. The reliability authority shall identify a T_v for each interconnection reliability operating limit. 207.1.1. The reliability authority shall have an action plan that identifies actions it shall take or actions it shall direct others to take, to prevent or mitigate instances of exceeding its interconnection reliability operating limits. (Operating Security Limits that, when exceeded may cause instability and cascading outages on the bulk electric system have now been defined as Interconnection Reliability Operating Limits (IROL) within this standard.) 			
Requirement A.1.1. Responsibility for transmission security. When OPERATING SECURITY LIMIT violations occur, or are expected to occur, the CONTROL AREAS affected by and the CONTROL AREAS contributing to these violations shall implement established joint actions to restore transmission security.	 204.1.1. The reliability authority shall act or direct others to act to: Prevent instances where interconnection reliability operating limits may be exceeded. Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded. 			

Policy 2 — Transmission Language in Policy	Standard 200 Replacement
Requirement A.1.2.	204.1.1. The reliability authority shall act or direct others to act to:
Action to keep transmission within limits. CONTROL AREAS shall take all appropriate action up to and including shedding of firm load in order to comply with Standard 2.A.2.	 Prevent instances where interconnection reliability operating limits may be exceeded.
	 Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.
	208.1.1. The transmission operator, balancing authority, and interchange authority shall follow the reliability authority's directives to:
	 Prevent instances where interconnection reliability operating limits may be exceeded.
	 Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.
Requirement B.5.	204.1.1. The reliability authority shall act or direct others to act to:
Preventing Voltage Collapse. The SYSTEM OPERATOR shall take corrective action, including load reduction, necessary to prevent voltage collapse when reactive resources are insufficient.	 Prevent instances where interconnection reliability operating limits may be exceeded.
	 Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.

Policy 4 — System Coordination	Standard 200 Replacement				
Language in Policy					
Section A — Monitoring System Conditions	Keep for transmission operator's system operators				
Requirement A.1 Resources. The system operator shall be kept informed of all generation and transmission resources available for use.	205.1.1. The reliability authority shall specify and collect the data it needs to support real-time monitoring, operational planning analyses, and real-time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits. The reliability authority shall collect this data from the entities performing functions that have facilities monitored by the reliability authority, and from entities that provide facility status to the reliability authority. This includes specifying and collecting data from the following:				
	Balancing authorities				
	Generator owners				
	Generator operators				
	 Load-serving entities 				
	 Reliability authorities 				
	 Transmission operators 				
	Transmission owners				
Requirement A.2.	Keep for transmission operator's system operators				
Transmission status and data. System operators shall monitor transmission line status, MW and MVAR flows, voltage, LTC settings and status of rotating and static reactive resources.	202.1.1. The reliability authority shall perform real-time monitoring of system operating parameters to determine if the reliability area is operating within its interconnection reliability operating limits.				

Policy 4 — System Coordination	Standard 200 Replacement			
Language in Policy				
 B3 — Data required from control areas 3. Data required from Control Areas. Each CONTROL AREA shall provide its SECURITY COORDINATOR(S) with the Electric System Security Data that is necessary to allow THE SECURITY COORDINATOR(S) to perform its operational security assessments and coordinate reliable operations. 3.1 Data. CONTROL AREAS shall provide the types of data as listed in Appendix 4B, "Electric System Security Data, Section A, Electric System Security Data", unless otherwise agreed to by the CONTROL AREAS and their SECURITY 	 206.1.1. Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship. Balancing authorities Generator owners Generator operators Load-serving entities Reliability authorities 			
Coordinator(s).	Transmission operatorsTransmission owners			
4. Data exchange among SECURITY COORDINATORS. Upon request, SECURITY COORDINATORS shall, via the ISN, exchange with each other Electric Security Data that is necessary to allow the SECURITY COORDINATORS to perform their operational security assessments and coordinate their reliable operations.	 206.1.1. Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship. Balancing authorities Generator owners Generator operators Load-serving entities Reliability authorities 			
	Transmission operatorsTransmission owners			

Policy 4 — System Coordination	Standard 200 Replacement				
Language in Policy					
4.1. Data . SECURITY COORDINATORS shall share with each other the types of data as listed in Appendix 4B, "Electric System Security Data, Section A, Electric System Security Data", unless	206.1.1. Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship.				
otherwise agreed to.	Balancing authorities				
	Generator owners				
	Generator operators				
	 Load-serving entities 				
	Reliability authorities				
	Transmission operators				
	Transmission owners				
Appendix 4BA	205.1.1 The reliability authority shall specify and collect the data it needs to support real-time monitoring, operational planning analyses, and real-time assessments conducted relative to operating within its reliability area's interconnection reliability operating limits. The reliability authority shall collect this data from the entities performing functions that have facilities monitored by the reliability authority, and from entities that provide facility status to the reliability authority. This includes specifying and collecting data from the following:				
	Balancing authorities				
	Generator owners				
	Generator operators				
	 Load-serving entities 				
	Reliability authorities				
	Transmission operators				
	Transmission owners				

Policy 5 — Emergency Operations Language in Policy	Standard 200 Replacement
Requirement 5.C.1. Relieving security limit violations.	204.1.1. The reliability authority shall act or direct others to act to:
Each CONTROL AREA experiencing or materially contributing to an OPERATING SECURITY LIMIT violation shall take immediate steps to relieve the condition.	 Prevent instances where interconnection reliability operating limits may be exceeded.
	 Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.
	208.1.1. The transmission operator, balancing authority, and interchange authority shall follow the reliability authority's directives to:
	 Prevent instances where interconnection reliability operating limits may be exceeded.
	 Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.
Requirement 5.C.2. Operator authority and responsibility.	204.1.1. The reliability authority shall act or direct others to act to:
SYSTEM OPERATORS having responsibility for the reliability of the transmission system within a CONTROL AREA, pool, etc., shall be given and shall exercise specific authority to alleviate OPERATING SECURITY LIMIT violations. The authority shall enable the SYSTEM OPERATOR to take timely and appropriate actions including curtailing transmission service or energy schedules, operating equipment (e.g., generators, phase shifters, breakers), shedding load, etc.	 Prevent instances where interconnection reliability operating limits may be exceeded.
	 Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.
	208.1.1. The transmission operator, balancing authority, and interchange authority shall follow the reliability authority's directives to:
	 Prevent instances where interconnection reliability operating limits may be exceeded.
	 Mitigate the magnitude and duration of instances where interconnection reliability operating limits have been exceeded.

Policy 9 — Security Coordinator	Standard 200 Replacement		
Language in Policy			
Requirement A.1. Perform security analysis. The RELIABILITY COORDINATORS shall ensure that next-day reliability analyses are performed simultaneously for all CONTROL AREAS and TRANSMISSION PROVIDERS in its RELIABILITY AREA to ensure that the bulk power system can be operated in anticipated normal and contingency conditions.	 203.1.1. The reliability authority shall perform operational planning analyses to assess whether the planned bulk electric system operations within the RA's reliability area will exceed any of its interconnection reliability operating limits. 203.1.2. The reliability authority shall perform real-time assessments to determine if its reliability area is exceeding any interconnection reliability operating limits or is expected to exceed any interconnection reliability operating limits. 		
1.1. Information sharing. Each CONTROL AREA in the SECURITY AREA shall provide information required for system studies, such as critical facility status, load, generation, operating reserve projections, and known INTERCHANGE TRANSACTIONS. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection, and 1200 Pacific Standard Time for the Western Interconnection.	 206.1.1. Each entity performing one of the following functions shall provide data, as specified, to the reliability authority(ies) with which it has a reliability relationship. Balancing authority Generator owners Generator operators Load-serving entities Reliability authorities Transmission operators Transmission owners (Note that this data is only a subset of the data addressed in Policy 9 Requirement A.1.1.1) 		

Requirement A.1.2. System Studies. The RELIABILITY COORDINATORS shall conduct studies to identify potential interface and other OPERATING RELIABILITY LIMIT violations, including overloaded transmission lines and transformers, voltage and stability limits, etc.	 203.1.1. The reliability authority shall perform operational planning analyses to assess whether the planned bulk electric system operations within the RA's reliability area will exceed any of its interconnection reliability operating limits. 203.1.2. The reliability authority shall perform real-time assessments to determine if its reliability area is exceeding any interconnection reliability operating limits or is expected to exceed any interconnection reliability operating limits.
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Compliance With Standard

	Functions That Must Comply With the Requirements*							
Requirement	Reliability Authority	Balancing Authority	Interchange Authority	Transmission Operator	Transmission Owner	Generator Owner	Generator Operator	Load-Serving Entity
201	х							
IROL Identification								
202	х							
Monitoring								
203	х							
Analyses and Assessments								
204	Х							
Actions								
205	Х							
Data Specification and Collection								
206	Х	Х		Х	Х	Х	Х	Х
Data Provision								
207	Х							
Action Plan								
208		Х	Х	Х				
RA Directives								

* Please note that this standard will apply to the existing entities (such as control areas, transmission owners, etc.) performing the functions listed above until functional certification of the RA, BA, IA, etc has been completed.

Phased-in Compliance

The following table identifies the implementation date and the earliest compliance date for each requirement.

The implementation date is the date entities are expected to begin meeting the performance identified in this standard. Because this standard depends upon the communication of system operating limits as defined in Standard 600, "*Determine Facility Ratings, System Operating Limits and Transfer Capabilities*", compliance to this standard will not be required until Standard 600 has been balloted and implemented. Additional time (preparation time) has been added to give entities time needed to fully comply with the requirements. Although compliance reviews will begin no sooner than six months after the implementation of Standard 600, the NERC Compliance and Certification Committee and NERC's Director of Compliance will determine the exact timing of compliance reviews for this standard. The justification for the staggered effective dates is in the tables on the following pages:

Requirement	Implementation Date	Compliance Date
201 — IROL Identification	3 months from Board adoption	6 months from implementation of Standard 600
202 — Monitoring	3 months from Board adoption	6 months from implementation of Standard 60
203 — Analyses and Assessments	3 months from Board adoption	6 months from implementation of Standard 600
204 — Actions	3 months from Board adoption	6 months from implementation of Standard 600
205 — Data Specification and Collection	3 months from Board adoption	9 months from implementation of Standard 600
206 — Data Provision	3 months from Board adoption	12 months from implementation of Standard 600
207 — Action Plan	3 months from Board adoption	6 months from implementation of Standard 600
208 — Reliability Authority Directives	3 months from Board adoption	9 months from implementation of Standard 600

Measure	Description	Preparation
201.2.1	The reliability authority shall establish a list of facilities (or groups of facilities) in the reliability authority's reliability area that are subject to interconnection reliability operating limits.	This should already be done in some format to comply with current field testing of IRLs and to comply with existing Operating Policy — only additional time needed would be to produce some evidence that list has been updated.
201.2.1.1	The reliability authority shall review and update the list of facilities to reflect changes in system topology.	This should already be done in some format to comply with current field testing of IRLs and to comply with existing Operating Policy — only additional time needed would be to produce some evidence that list has been updated and this could be done in less than one week if needed.
201.2.2	The reliability authority shall establish a list of interconnection reliability operating limits for the reliability authority's reliability area.	This should already be done in some format to comply with current field testing of IRLs and to comply with existing Operating Policy.
201.2.2.1	The reliability authority shall identify a T_v for each interconnection reliability operating limit.	Current policy has a 30-minute response time for all limits. Entities may need additional time to establish variable T_v s for IROLs. This should be done within six months.
201.2.2.2	The reliability authority shall update the list of interconnection reliability operating limit values to reflect current system conditions.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to produce some evidence that the list has been updated — and this could be done in less than one week if needed.

Measure	Description	Preparation
202.2.1	The reliability authority shall have interconnection reliability operating limits available for its operations personnel's real-time use.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to re-title the limits as IROLs.
202.2.2	The reliability authority shall have real-time data available in a form that system operators can compare to the interconnection reliability operating limits.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to let system operators know that the limits are called IROL and may have unique T_vs .
202.2.3	The reliability authority shall monitor real-time system operating parameters and compare these against its interconnection reliability operating limits.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to let system operators know that the limits are called IROL and may have unique T_vs .

Measure	Description	Preparation
203.2.1	The reliability authority shall identify operating situations or events that impact its reliability area's ability to operate without exceeding any identified interconnection reliability operating limits.	This should already be done in some format to comply with existing Operating Policy — only additional time needed would be to let system operations personnel know that the limits are called IROLs and may have unique T_vs .
203.2.1.1	The reliability authority shall conduct an operational planning analysis at least once each day, evaluating the next day's projected system operating conditions.	This should already be done to comply with existing Operating Policy — current operating practice in many locations is to do the analysis each day for the day ahead only on weekdays, and to do the 'weekend ahead' on Friday. Many entities do not conduct an operational planning analysis on Saturday or Sunday for Sunday and Monday. Entities may need some time to train additional personnel so that the analysis could be conducted every day of the week.
203.2.1.2	The reliability authority shall conduct a real-time assessment periodically, but at least once every 30 minutes.	This should already be done to comply with existing Operating Policy — only additional time needed would be to let system operators know that the limits are called IROLs and may have unique T_vs and to identify that the assessment must be conducted at least once every 30 minutes.

Measure	Description	Preparation
204.2.1	The reliability authority shall document each instance where actions are taken or directives are issued to mitigate the magnitude and duration of exceeding an interconnection reliability operating limit.	This requires that the system operators know which of their limits are IROLs. The actions are done today to comply with Operating Policy.
204.2.1.1	The reliability authority shall document, via an operations log or other data source, the actions taken or directives issued, the magnitude of the event, and the duration of the event. (This data may be from an operating log, may be from the entity's energy management system, or may be from some other source.)	This requires that the system operators know which of their limits are IROLs. The actions are done today to comply with Operating Policy.
204.2.2	The reliability authority shall report each instance of exceeding an interconnection reliability operating limit for time greater than T_v .	This requires that the system operators know which of their limits are IROLs. The actions are done today to comply with Operating Policy.
204.2.2.1	The reliability authority shall complete an Interconnection Reliability Operating Limit Violation Report and shall file the report with its compliance monitor within five business days of the initiation of the event. (The report includes the date and time of the event; identification of which interconnection reliability operating limit was violated and the T_v for that limit; magnitude and duration of exceeding the interconnection reliability operating limit after exceeding T_v ; actions taken or directives issued and the time these were initiated or issued; explanation of results of actions or directives.)	 This requires that the Compliance Enforcement Program accept the IROL Violation Report developed by the IROL Standard Drafting Team. The report collects only the information identified in the measure. This also requires that the RA know which entity is acting as its compliance monitor. This also requires that the IROL Violation Report be made available to the RAs.

Measure	Description	Preparation
204.2.1	The reliability authority shall have a documented specification for data needed to build and maintain models needed to support real-time monitoring, operational planning analyses, and real-time assessments relative to interconnection reliability operating limits.	Many entities may not have a data specification in place. The data specification may be distributed in several other documents, and entities may need time to assemble this. Since the data needed is known, even if it is not formally documented, it should be possible to accomplish this documentation within nine months — this includes time to come to 'mutual agreement' with other entities.
205.2.1.1	Specification shall include a list of required data, a mutually agreeable format, and timeframe and periodicity for providing data.	
205.2.1.2	Specification shall address the data provision process to use when automated real-time system operating data is unavailable.	This may not exist and may need to be developed. It should be possible to develop this within the nine-month period identified for developing the complete data specification.
205.2.2	The reliability authority shall distribute its data specification to the entities that have facilities monitored by the reliability authority and to entities that provide facility status to the reliability authority.	This requires documentation that wouldn't be available until after the data specification were completed. This should be done no later than ten months after the standard is approved — this allows nine months to develop the specification, and then a month to deliver it.
205.2.3	The reliability authority shall notify its compliance monitor when an entity that has facilities monitored by the reliability authority, or an entity that provides facility status to the reliability authority, does not provide data as specified.	This requires that the data specification be developed and distributed. This should come into effect a year after the standard is approved. This allows entities some time to 'field test' their data specification before compliance is a factor.
205.2.3.1	The notification shall take place within five business days of discovering that the data is missing.	

Measure	Description	Preparation
206.2.1	The entity responsible shall provide data, as specified, to the requesting reliability authority, within the timeframe specified, in the mutually agreed upon format.	 The data specification in requirement 205 need to be in place before this can be implemented. There should be a 12-month delay in implementing compliance with this measure. This allows entities time to work with their RA to come to agreement with a 'mutually acceptable format' and gives the entities that must provide the RA with data a three month trial and error period for providing data before there is any compliance measurement.

Measure	Description	Preparation
207.2.1	The reliability authority shall have a documented action plan that addresses preventing and mitigating instances of exceeding interconnection reliability operating limits. The plan shall identify and be coordinated with those entities responsible for acting and with those entities impacted by such actions.	Entities should have this plan in place now. A six-month delay in compliance should allow everyone time to develop a plan if it doesn't already exist.
207.2.1.1	The action plan may be a process or procedure for preventing or mitigating instances of exceeding interconnected reliability operating limits. (Note: An emergency operations plan may be used to satisfy this requirement if the emergency operations plan addresses actions to prevent and mitigate instances of exceeding interconnected reliability operating limits.)	

Measure	Description	Preparation
208.2.1	The entity responsible shall document the following:Date and time of directive received	This should already be done and no additionatime for preparation should be needed.
	 Directive issued 	
	 Actions taken in response to directive 	