NERC staff offers the following interpretation as the standard applies to operating positions.

All real-time operating positions in a transmission operations control center for the operation of the bulk electric system where any task listed in a reliability standard applicable to a transmission operator is performed, or from which others are directed to perform such tasks, shall be staffed at all times with NERC-certified personnel holding a valid credential for that position.

*The phrase **real-time** implies an action that produces a response from the interconnected electrical system that is virtually concurrent with the causative action. This wording is intended to exclude personnel such as planners and others who may perform a task listed on the critical task lists but who do so in a manner that precludes immediacy of consequences.*

*The phrase **control centers for the operation of the bulk electric system** was chosen to exclude such sites as power plant and substation control rooms.*

*The phrase **have… primary responsibility, either directly or through communications with others** provides that if the position or individual in that position has or can have the primary responsibility by taking actions (in emergencies, during loss of communications, or loss of primary control centers, etc.), then that position and those individuals must be NERC-certified with the appropriate credential to operate the system.*

TOP-004 R6.3 clearly identifies switching of the transmission network as included in the standards. NERC maintains that any real-time operator who makes switching decisions is included and must be certified. The operators are performing actions on the bulk power system and are responsible for following NERC requirements. This includes people who generally follow a "canned" switching order but have the authority to deviate from that "canned" order, if appropriate, including stopping or reversing the sequence if conditions warrant it. The only person who should be excluded is one who carries out a switching order for a bulk power system facility and has no decision-making authority. This moves the argument to the level of decision making regarding which breaker to open first, which end of the line to open first, when to put on grounds, when to disable relays, etc. These are all decisions for which an error can have major consequences for failure of the bulk power system.

> *PER 001-0 R1*
>
> *Each Transmission Operator and Balancing Authority shall provide operating personnel with the responsibility and authority to implement real-time actions to ensure the stable and reliable operation of the Bulk Electric System.*

NERC maintains that personnel performing switching operations must have the responsibility and authority to take actions to ensure the stable and reliable operation of the bulk power system without having to first obtain permission from a supervisor. If this person is able to take such independent action, then this person must be appropriately NERC certified for the position.

Tasks Lists for Certification Credentials

The following lists of tasks identify the tasks that define who should obtain the given certification credential. The lists are not meant to be definitive lists of tasks performed by system operators. However, persons performing any one of these tasks must be certified at that level.

Reliability Operator Credential

The six tasks below identify the tasks that define who should obtain the NERC-certified system operator Reliability Operator credential.

1. Produce and publish system status information via reliability coordinator information system (RCIS) or other similar Interconnection, regional or subregional communication networks.
2. Initiate a reliability coordinator hotline conference call when frequency error exceeds specified limits.
3. Monitor, evaluate, and act upon reliability-related data from the RCIS or other similar Interconnection, regional or subregional communication networks.
4. Monitor, evaluate, and act upon reliability-related data within a reliability coordinator area.
5. Coordinate reliability processes and actions with, and among, other reliability coordinators.
6. Issue energy emergency alerts, or other similar capacity alerts, to generators, load serving entities, transmission operators, balancing authorities, and interchange authorities.

Balancing, Interchange, and Transmission Operator Credential

The Balancing, Interchange, and Transmission examination is a combination of two individual specialty examinations. NERC recommends that if you perform any combination of tasks on both lists, this is the credential that you should have.

Balancing & Interchange

1. Balance loads and resources (such as generation, dispatchable load and/or interchange) to maintain system frequency at a scheduled level.
2. Evaluate, modify, and implement a resource plan for the current operating period to balance system load and resources.
3. Operate AGC to dispatch generation resources within the entity's metered boundaries.
4. Procure alternate source of energy when the reliability coordinator curtails transactions or calls for resource re-dispatch.
5. Direct actions to correct abnormal frequency.
6. Direct procurement of replacement energy upon a loss of a generating or interchange resource.
7. Direct the separation or shutdown of generators that are unsafe to operate during or after an area disturbance.
8. Ensure adequate contingency reserves are available.
9. Request an energy emergency alert (EEA), or other similar capacity alert, when resources (such as generation, dispatchable load and/or interchange) and contingency reserves are inadequate to meet demand.
10. React to a capacity emergency by ordering on all available generation and/or scheduling energy purchases and/or requesting emergency assistance from other systems.

11. Confirm and implement interchange schedules and schedule changes.

Transmission

12. Direct the restoration of the transmission system following a major system outage, load shedding, islanding or blackout.
13. Direct and/or control switching of bulk-power system elements at switching stations, generating stations, and transmission line terminals.
14. Direct and/or approve the real-time operation of the bulk power transmission system.
15. Coordinate outages of transmission system elements with all impacted systems to ensure transmission system reliability.
16. Direct and/or control actions to mitigate thermal, stability, and voltage limit violations.
17. Direct and/or control actions to mitigate actual and/or expected operating reliability limit violations.
18. Direct and/or control operations between the host balancing authority and any transmission operating entities that exist within the host balancing authority's boundaries to ensure transmission reliability.
19. Direct and/or control voltage levels, reactive resources, and coordinates Mvar flows with neighboring systems.
20. Directs or initiates shedding load to alleviate system emergency conditions.

Transmission Operator Credential

1. Direct the restoration of the transmission system following a major system outage, load shedding, islanding or blackout.
2. Direct and/or control switching of bulk-power system elements at switching stations, generating stations, and transmission line terminals.
3. Direct and/or approve the real-time operation of the bulk power transmission system.
4. Coordinate outages of transmission system elements with all impacted systems to ensure transmission system reliability.
5. Direct and/or control actions to mitigate thermal, stability, and voltage limit violations.
6. Direct and/or control actions to mitigate actual and/or expected operating reliability limit violations.
7. Direct and/or control operations between the host balancing authority and any transmission operating entities that exist within the host balancing authority's boundaries to ensure transmission reliability.
8. Direct and/or control voltage levels, reactive resources, and coordinates Mvar flows with neighboring systems.
9. Directs or initiates shedding load to alleviate system emergency conditions.

Balancing and Interchange Operator Credential

1. Balance loads and resources (such as generation, dispatchable load and/or interchange) to maintain system frequency at a scheduled level.

2. Evaluate, modify, and implement a resource plan for the current operating period to balance system load and resources.
3. Operate AGC to dispatch generation resources within the entity's metered boundaries.
4. Procure alternate source of energy when the reliability coordinator curtails transactions or calls for resource re-dispatch.
5. Direct actions to correct abnormal frequency.
6. Direct procurement of replacement energy upon a loss of a generating or interchange resource.
7. Direct the separation or shutdown of generators that are unsafe to operate during or after an area disturbance.
8. Ensure adequate contingency reserves are available.
9. Request an energy emergency alert (EEA), or other similar capacity alert, when resources (such as generation, dispatchable load and/or interchange) and contingency reserves are inadequate to meet demand.
10. React to a capacity emergency by ordering on all available generation and/or scheduling energy purchases and/or requesting emergency assistance from other systems.
11. Confirm and implement interchange schedules and schedule changes.