Certification Examination Content Outline
Balancing, Interchange, and Transmission Operator (BT)
Effective February 13, 2017

	Knowledge Area	Score Questions
1	Resource and Demand Balancing	31
1.a	Interchange Scheduling and Coordination	4
1.b	Reserves (Spinning and Non-Spinning)	5
1.c	Automatic Generation Control (AGC)	5
1.d	Area Control Error (ACE)	5
1.e	Frequency	4
1.f	Load Forecasting	4
1.g	Generation Equipment	4
2	Transmission	28
2.a	Protection and Control	5
2.b	Voltage and Reactive	6
2.c	Electrical Current	2
2.d	Reconfiguration and Switching	5
2.e	Operating Limits	5
2.f	Transmission Equipment	5
3	Emergency Preparedness	11
3.a	Current and Next-Day Planning	4
3.b	Severe Weather, Natural Disasters, and Geomagnetic Disturbances	4
3.c	Anticipated Capacity Deficiency	3
4	Emergency Response	16
4.a	System Restoration	4
4.b	Response to System Disturbances	4
4.c	Response to Capacity Emergencies	3
4.d	Response to Loss of Control Center	2
4.e	Response to Loss of Analysis and Monitoring Tools	3
5	Contingency Analysis and Reliability	21
5.a	Contingency Analysis	4
5.b	Network Analysis Tools (e.g. State Estimators)	4
5.c	Response to Results of Contingency Analysis	4
5.d	System Operating Limits (SOL)	5
5.e	Interconnection Reliability Operating Limits (IROL)	4
6	Communications and Data	13
6.a	Reporting Requirements	3
6.b	Communication Methods (e.g. Three-Part Communication, RCIS)	4
6.c	Data Validity and Verification	4
6.d	Telemetry and Communications Equipment	2

In addition to the 120 scored questions, there will be an additional 20 experimental questions that do not count toward an examinee's score.

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	Tasks
1	Adjust flow control devices within the transmission area to maintain reliability.
2	Approve Arranged Interchange from ramping ability perspective.
3	Calculate and monitor area control error.
4	Curtail Confirmed Interchange that adversely impacts reliability.
5	Deploy reliability-related services.
6	Determine reliability-related services requirements for balancing generation and load, and transmission reliability.
7	Develop emergency procedures.
8	Develop Interconnection Reliability Operating Limits to protect from instability and Cascading.
9	Develop system limitations such as System Operating Limits and Total Transfer Capabilities, and operate within those limits.
10	Develop system restoration plans.
11	Direct and coordinate system restoration.
12	Direct implementation of emergency procedures including load shedding.
13	Direct revisions to generation maintenance plans as permitted by agreements.
14	Direct revisions to transmission maintenance plans as permitted by agreements.
15	Formulate an operational plan (generation commitment, outages, etc.) for reliability evaluation.
16	Identify, communicate, and direct actions if necessary to relieve reliability threats and limit violations.
17	Implement Confirmed Interchange.
18	Implement emergency procedures.
19	Implement system restoration plans.
20	Interpret actual and contingency reliability analyses.
21	Monitor and adjust reactive resources to maintain transmission voltage within defined limits.
22	Monitor and deploy transmission assets, protective relaying systems, and Special Protection Systems (SPS/RAS).
23	Monitor and report control performance and disturbance recovery.
24	Monitor and update all reliability-related parameters within the reliability area.
25	Monitor and update telemetry of reliability-related parameters within the reliability area.
26	Operate in the Balancing Authority Area to maintain load-interchange-generation balance.
27	Operate within established Interconnection Reliability Operating Limits.
28	Perform actual and contingency reliability analyses.
29	Provide balancing and energy accounting, and administer inadvertent energy paybacks.
30	Review generation commitments, dispatch, and load forecasts.

Revision History

Date	Revisions
02/13/2017	Initial Release
05/20/2020	Template Updated