2022 RTP:
TPL-001-5.1 Known Outages

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Transmission Planning Assessment

March 2022 RPG Meeting

TPL-001-5.1

2.1.4. When known outage(s) of generation or Transmission Facility(ies) are planned in the Near-Term Planning Horizon, the impact of selected known outages on System performance shall be assessed. *These known outage(s) shall be selected for assessment consistent with a documented outage coordination procedure or technical rationale by the Planning Coordinator or Transmission Planner. Known outage(s) shall not be excluded solely based upon outage duration.* The assessment shall be performed for the P0 and P1 categories identified in Table 1 with the System peak or Off-Peak conditions that the System is expected to experience when the known outage(s) are planned. This assessment shall include, at a minimum known outages expected to produce more severe System impacts on the Planning Coordinator or Transmission Planner's portion of the BES. Past or current studies may support the selection of known outage(s), if the study(s) has comparable post-Contingency System conditions and configuration such as those following P3 or P6 category events in Table 1.

Transmission Outages

- Market Notice W-A011422-01
  - Sent to All NERC-registered Transmission Owners (TOs), Transmission Planners (TPs), and ERCOT-registered TDSPs on January 14th, 2022
  - Requested known outage information and a documented technical rationale (if applicable)
- The collected outages will be studied under P0 and P1 conditions
  - Separate cases will be used to study these conditions
  - They will not be added to the RTP base cases

Resource Outages

- Market Notice W-B011422-01
  - Sent to all NERC-registered Generator Owners (GOs), Generator Operators (GOPs), and ERCOT-registered Resource Entities on January 14th, 2022
  - Requested known outage information
- These outages will be reviewed using ERCOT's proposed technical rationale
- Selected outages will be studied under P0 and P1 conditions
  - Separate cases will be used to study these conditions
  - They will not be added to the RTP base cases

Proposed Resource Outage Technical Rationale

- Summer Peak Data Analysis:
  - Evaluated the top 20 load hours for the past 10 years (200 hours total)
  - Evaluated the data by month and hour

Month:	Count:	Percent:	Note:
January	0	0%	
February	0	0%	
March	0	0%	
April	0	0%	
May	0	0%	
June	7	3.5%	Last occurred in 2012
July	51	25.5%	95.5%
August	141	70.5%	
September	1	0.05%	Last occurred in 2014
October	0	0%	
November	0	0%	
December	0	0%	
Total:	200		

Hour Ending:	Count:	Percent:	Note:
1	0	0%	
2	0	0%	
3	0	0%	
4	0	0%	
5	0	0%	
6	7	0%	
7	0	0%	
8	0	0%	
9	0	0%	
10	0	0%	
11	0	0%	
12	0	0%	
13	0	0%	
14	0	0%	
15	20	10%	100%
16	52	26%	
17	66	33%	
18	50	25%	
19	12	6%	
20	0	0%	
21	0	0%	
22	0	0%	
23	0	0%	
24	0	0%	
Total:	200		

Proposed Resource Outage Technical Rationale

- Summer Peak Proposed Rationale:
  - Outages must overlap with July or August of RTP study years
    - Outages less than 1 day in length must also overlap any of the hours ending 15 – 19
    - The outages during the hour with the greatest amount of coincident generation on outage will be used
- Preliminary Results:

Study Year:	MW On Outage:	Details:
2024 SUM:	617 MW	Wind: 547 MW Batteries: 70 MW
2025 SUM:	523 MW	Wind: 523 MW
2027 SUM:	772 MW	Wind: 741 MW PE: 31
2028 SUM:	322 MW	Wind: 322 MW

Proposed Resource Outage Technical Rationale

- Min Load Data Analysis:
  - Evaluated the bottom 20 load hours for the past 10 years (200 hours total)
  - Evaluated the data by month and hour

Month:	Count:	Percent:	Note:
January	2	1%	
February	32	16%	78%
March	43	21.5%	
April	81	40.5%	
May	16	8%	
June	0	0%	
July	0	0%	
August	0	0%	
September	0	0%	
October	10	5%	
November	15	7.5%	
December	1	0.5%	
Total:	200		

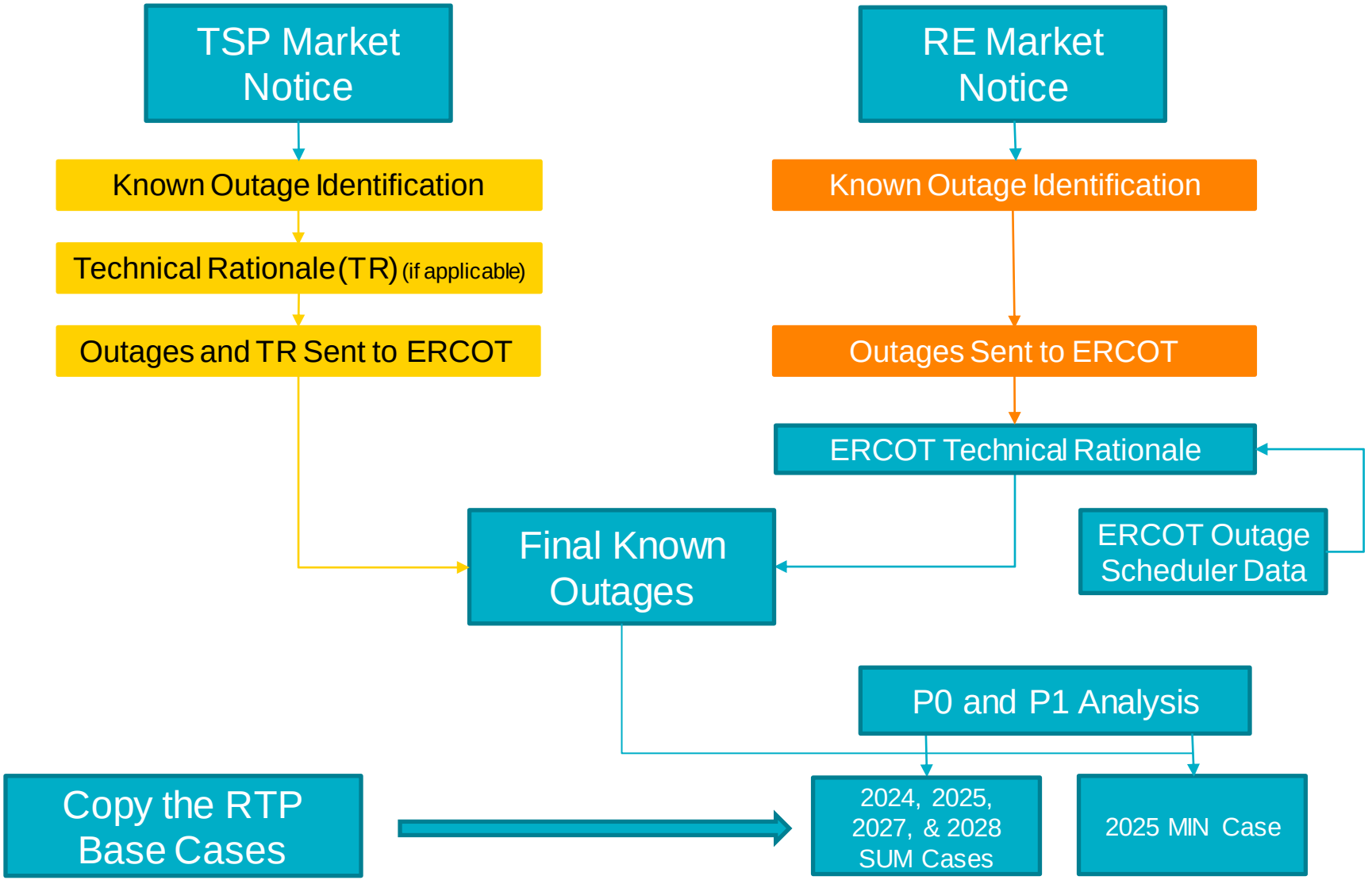
Hour Ending:	Count:	Percent:	Note:
1	1	0.5%	
2	4	2.0%	
3	44	22.0%	95.0%
4	77	38.5%	
5	51	25.5%	
6	18	9.0%	
7	3	1.5%	
8	2	1.0%	
9	0	0%	
10	0	0%	
11	0	0%	
12	0	0%	
13	0	0%	
14	0	0%	
15	0	0%	
16	0	0%	
17	0	0%	
18	0	0%	
19	0	0%	
20	0	0%	
21	0	0%	
22	0	0%	
23	0	0%	
24	0	0%	
Total:	200		

Proposed Resource Outage Technical Rationale

- Min Load Proposed Rationale:
  - Outages must overlap with February, March, or April of the RTP Min case study year
    - Outages less than 1 day in length must also overlap any of the hours ending 3 - 6
    - The outages during the hour with the greatest amount of coincident generation on outage will be used
- Preliminary Results:

Study Year:	MW On Outage:	Details:
2025 MIN:	13,621 MW	Combined Cycle: 4,642 MW Coal: 5,900 MW Natural Gas: 2,619 MW PUN: 219 MW PE: 150 MW Wind: 92 MW

Known Outage Summary



Further Resources

- NERC TPL-001-5.1
- NERC TPL-001-5 Technical Rationale
  - Discussion on known outages begins on page 12

Questions?

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