Joint Operating Committee
July 17th, 2014

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July 17th, 2014 JOC

- JOC Rules Overview
- DSO 216 INC Allocation Change
- DSO 216 Re-Design for 15 Minute Scheduling
  - DSO 216 Trigger Levels
  - DSO 216 Timing Levels

July 17th, 2014 JOC

JOC Rules:

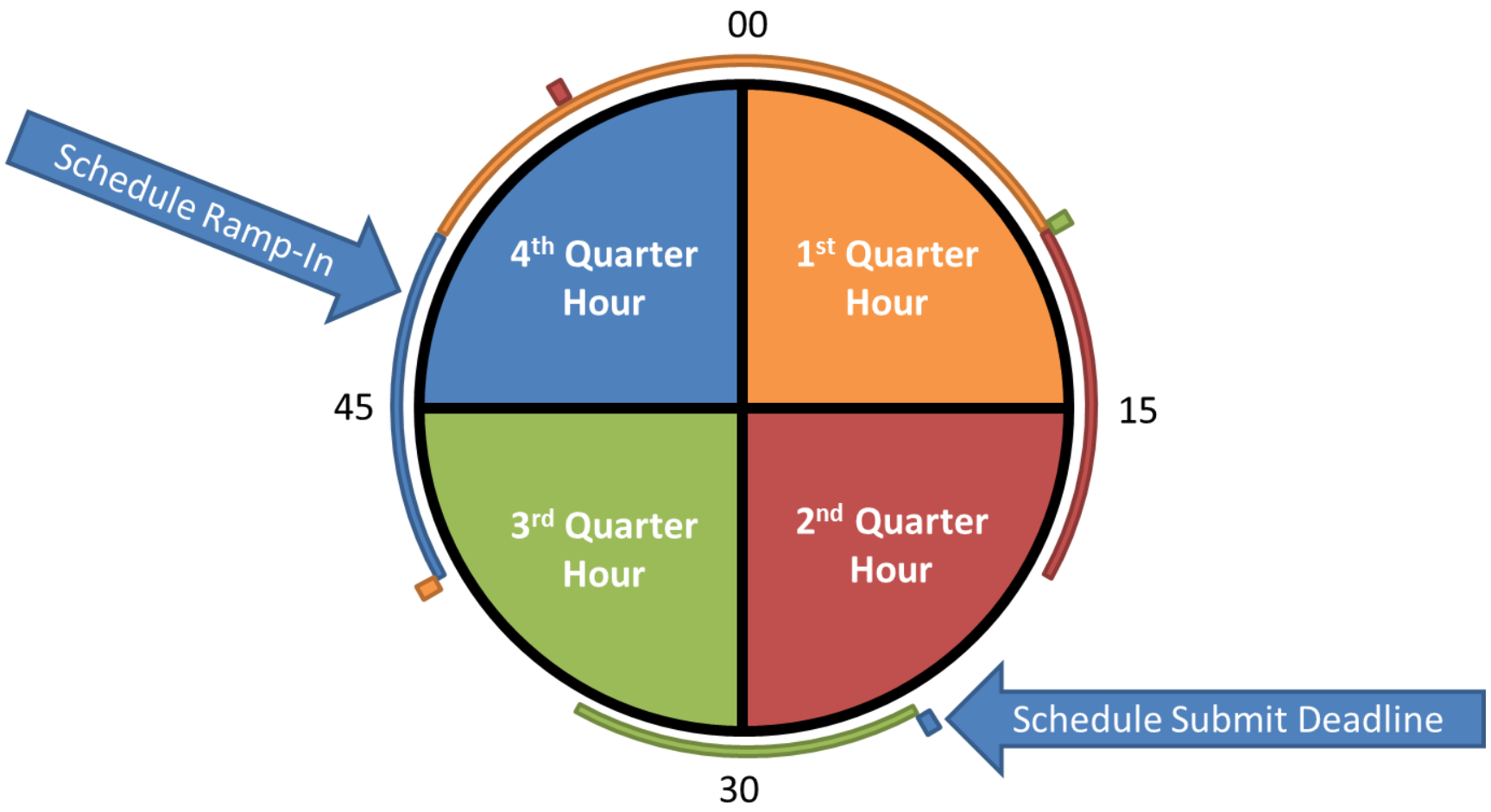
1. JOC meetings are open meetings to all interested parties, though they are targeted towards generation owners/operators.

2. Non-JOC member participation can be limited to ensure JOC members (BPA and generator owners/operators) are able to address all issues.

DSO 216 INC Allocation Change

- A bug has been identified in the allocation of INC reserves code that results in ~30 MW of over allocation to Wind plants on a pro-rata basis.
- The bug fix was implemented this week (July 16th, 2014) and resulted in a slight reduction in the INC reserve allocations on iCRS and Target Schedule signals sent to the plants.

DSO 216 Re-Design for 15 Min Schedules



DSO 216 Re-Design for 15 Min Schedules

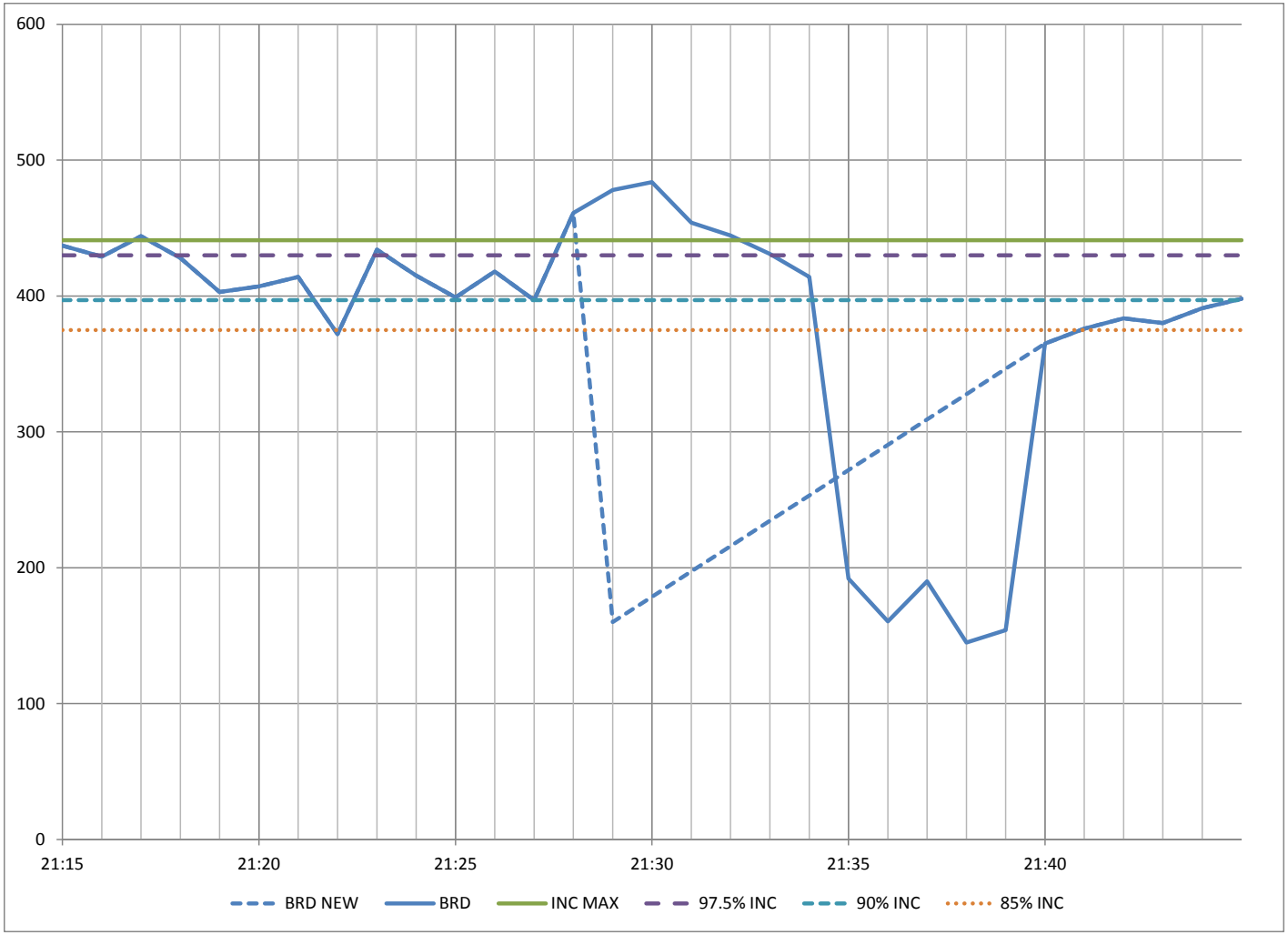
DSO 216 Level Trigger Thresholds

- Level at which BRD must be above for a DSO 216 event to initiate.

DSO 216 Level	Current Value	Proposed Value
Warnings	85%	85%
Level 1	90%	90%
Level 2	100%	97.5%

- Decreasing Level 2 to 97.5% gives time for DSO 216 to implement prior to over-deploying the FCRPS, which can be intensified by 15 min scheduling.

DSO 216 Re-Design for 15 Min Schedules



Level 2 Event

- 97.5% Trigger
- No Dispatch Review Time

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Alarm Trigger Threshold = 30 Sec

- This is the duration of time of which Balancing Reserves Deployed must remain above a the defined Trigger Threshold for a DSO 216 Alarm to be issued to Dispatch.

- No change recommended.

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Dispatcher Review Time

- The time from a DSO 216 Alarm in which BPA Dispatchers have to review the event, discard the event or implement the event immediately
- After this time, the event will auto-implement, if criteria for the DSO 216 Alarm still exist.

DSO 216 Re-Design for 15 Min Schedules

Dispatcher Review Time, continued

- Current Dispatcher Review Time = 4.5 Minutes

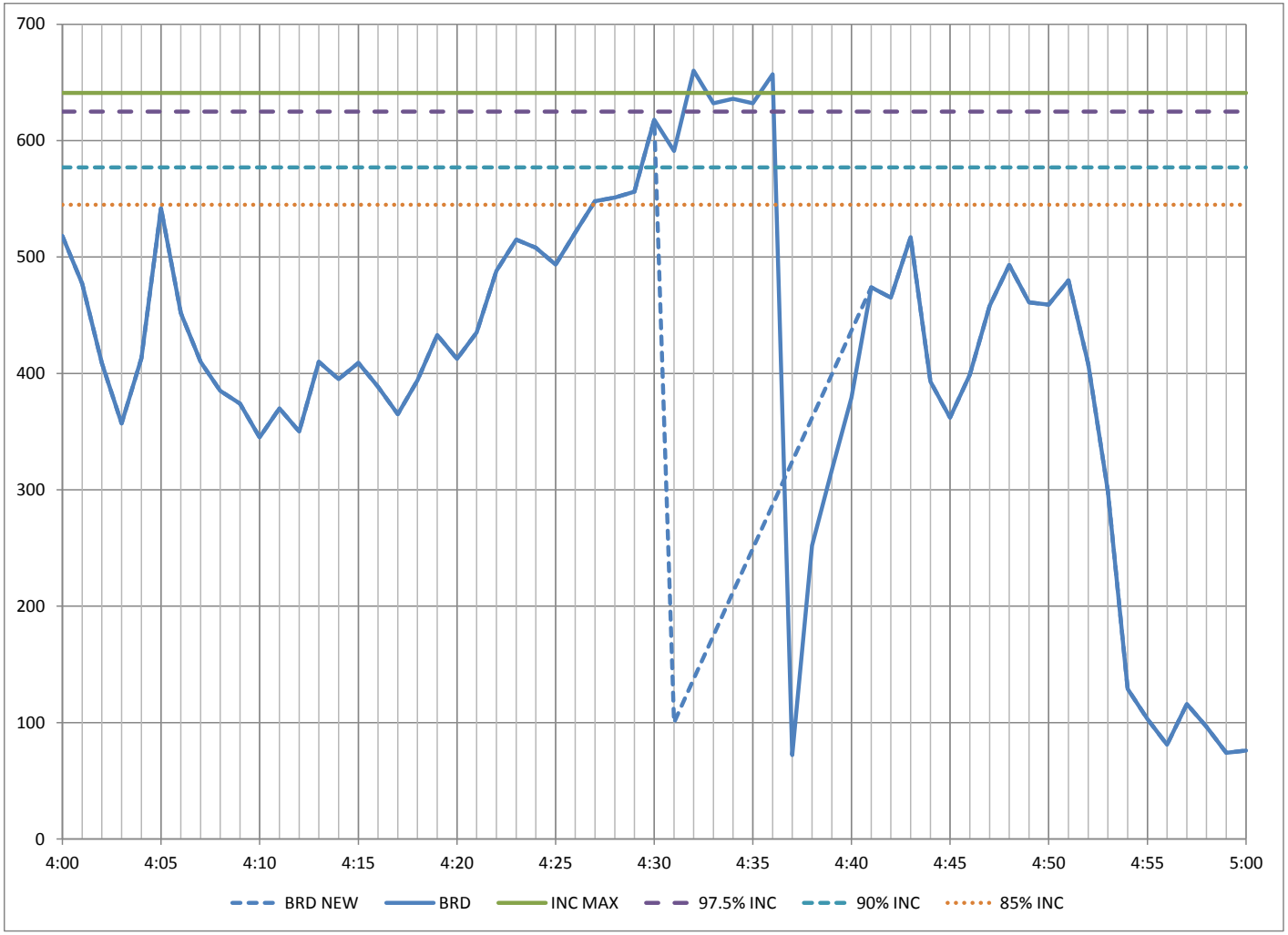
- Proposed Review Time = 0 Minutes with Auto-Suspend for certain system events:
  - DC RAS
  - AC RAS
  - Large ACE Detection
    - Large ACE without corresponding Frequency change indicates a telemetry error.

DSO 216 Re-Design for 15 Min Schedules

Dispatcher Review Time, continued

- Why?
  - Dispatch rarely discards events
  - DSO 216 is explicitly designed to <u>only</u> impact the parties that are causing the problem.
  - Dispatch has the ability to Suspend DSO 216 for system problems in addition to the events listed above.

DSO 216 Re-Design for 15 Min Schedules



Level 1 Event

- 30 Sec Alarm Trigger Threshold
- No Dispatch Review Time

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Minimum Time Between Event Levels

- Once a DSO 216 event level has been implemented, the system will pause for a specified amount of time before it will begin re-evaluating the Balancing Reserves Deployed for the next level.

- Currently the length of time the system pauses before re-evaluating Balancing Reserves Deployed is 10 minutes

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Minimum Time Between Event Levels, continued

- Proposed Minimum Time Between Levels is 5 Minutes
  - With 15 minute scheduling windows, 10 minutes is too long of a period to wait to re-examine use of Balancing Reserves Deployed.
  - Wind Curtailment events are reflected within 5 minutes of the onset of the event in the Balancing Reserves Deployed.
  - Wind Limit event performance has shown that 5 minutes is easily attainable. Wind parties will still be given 10 minutes before strikes are assessed.

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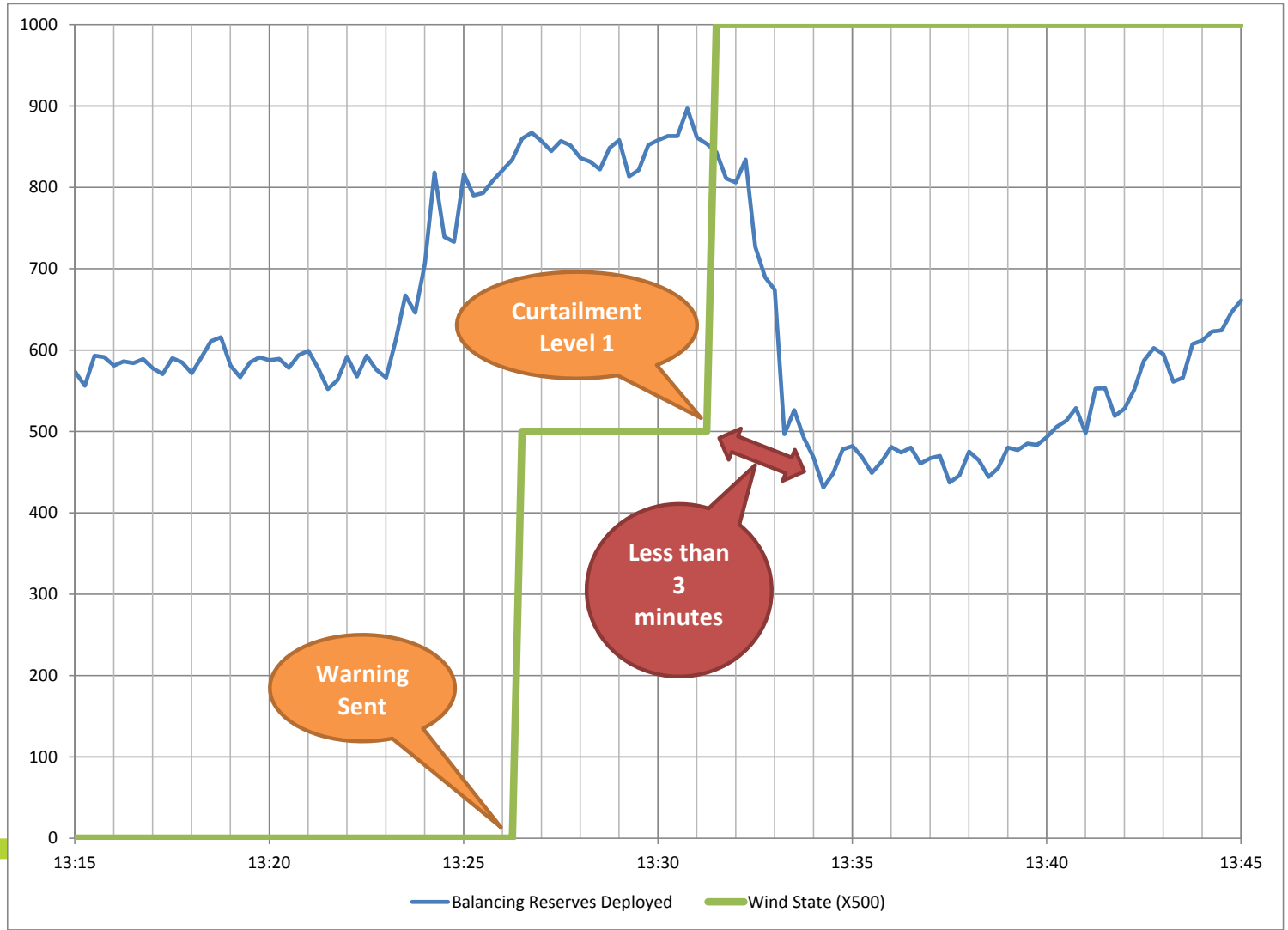
- Balancing Reserves Deployed response to a Curtailment



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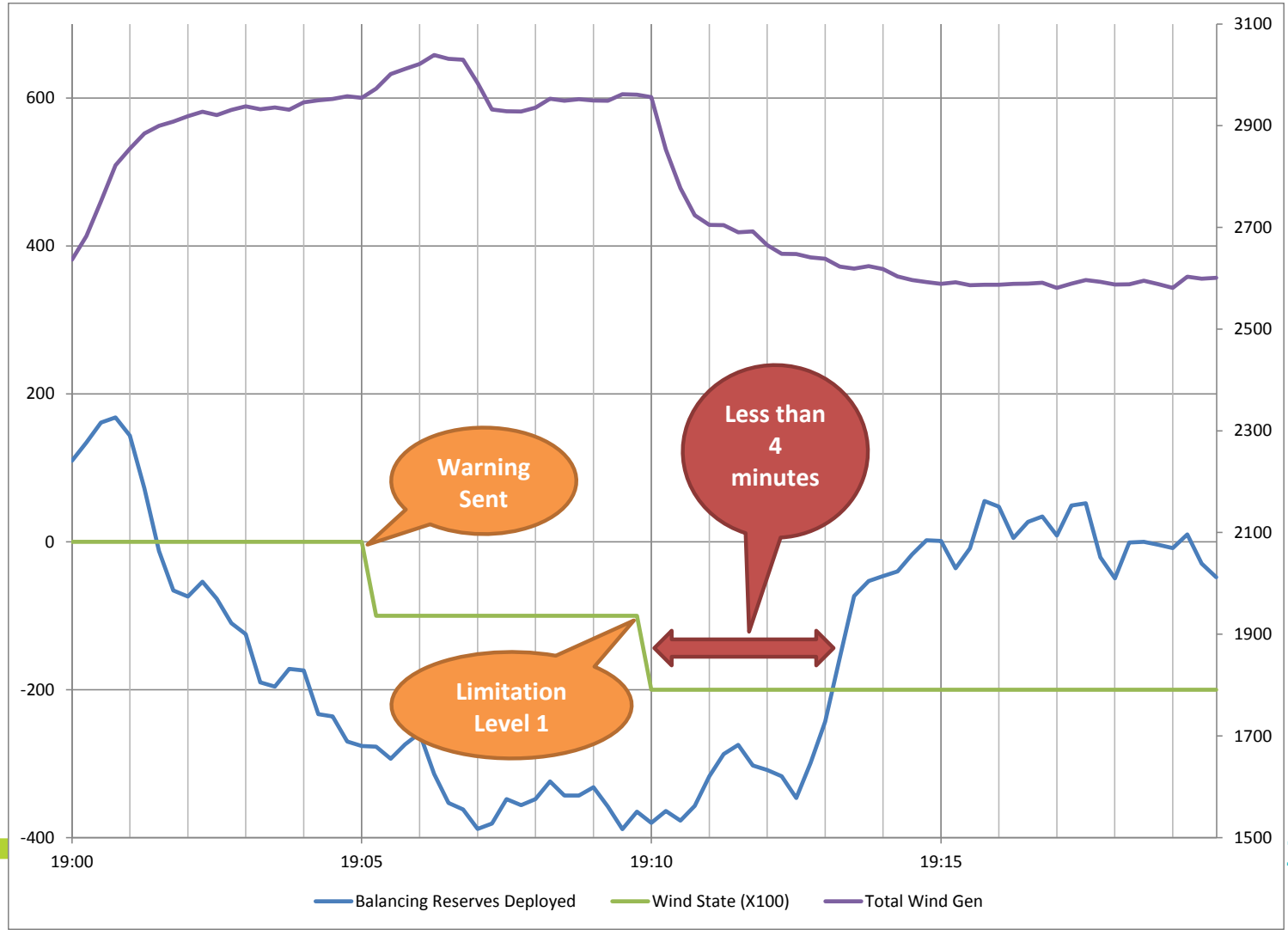
- Balancing Reserves Deployed response to a Limitation



DSO 216 Re-Design for 15 Min Schedules

In-Effect Periods

- The length of time in which the system remains in DSO event level.
- If a prior level is in effect, the next level can be reached during this time
- Currently:
  - Both Curtailments and Limitations are in effect for the remainder of the hour
  - During Limitations, the Wind State Flag resets to Normal at the top of the hour
  - During Curtailments, the Wind State Flag resets to Normal at 10 minutes prior to the top of the hour.

DSO 216 Re-Design for 15 Min Schedules

In-Effect Periods, continued

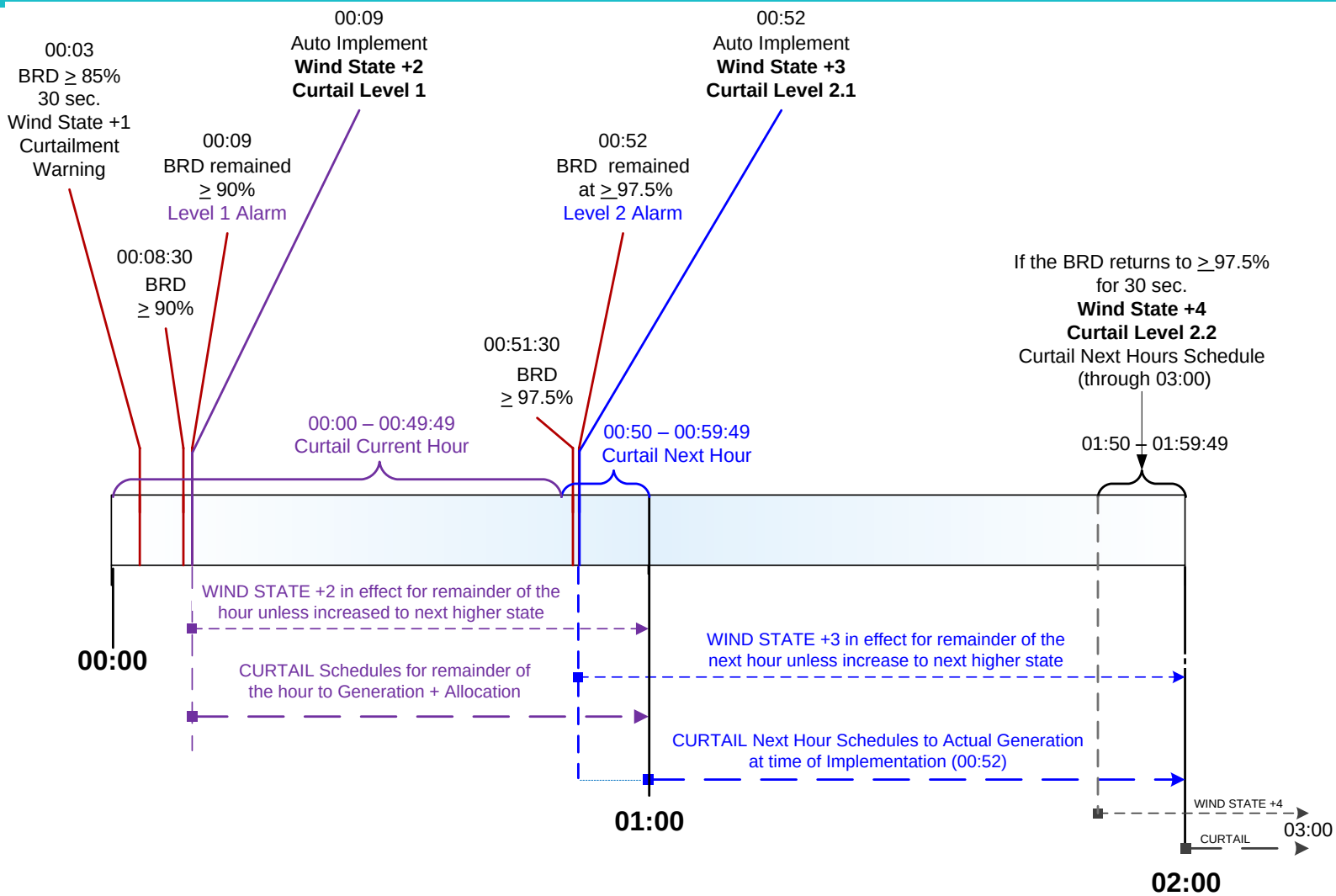
- Proposed In-Effect Periods when Events are implemented at:
  - xx:00 – xx:49:59
    - Limitations remain in-effect until to the top of current hour (1 hour max)
    - Curtailments apply to eTags currently in-effect and until to the top of current hour (1 hour max)
      - Reliability Limit placed on the current hour's eTags, not allowing adjustments above the Reliability Limit
    - Next higher Level can be reached anytime until the top of the current hour (1 hour max).

DSO 216 Re-Design for 15 Min Schedules

In-Effect Periods, continued

- Proposed In-Effect Periods when Events are implemented at:
  - xx:50 – xx:59:59
    - Limitations remain in-effect until to the top of next hour (1 hour 10 min max)
    - Curtailments apply to eTags in-effect for the next hour (1 hour max)
      - Reliability Limit placed on the next hour's eTags, not allowing adjustments above the Reliability Limit
    - Next higher Level can be reached anytime until the top of the next hour (1 hour 10 min max).

DSO 216 Re-Design for 15 Min Schedules



DSO 216 Re-Design for 15 Min Schedules

Blackout Periods

- During a blackout period, DSO 216 events are not implemented.

- Currently:
  - Limitations are not implemented between 10 minutes prior to the top of the hour and the top of the hour.
  - Curtailments are not implemented between 15 minutes prior to the top of the hour and the top of the hour.

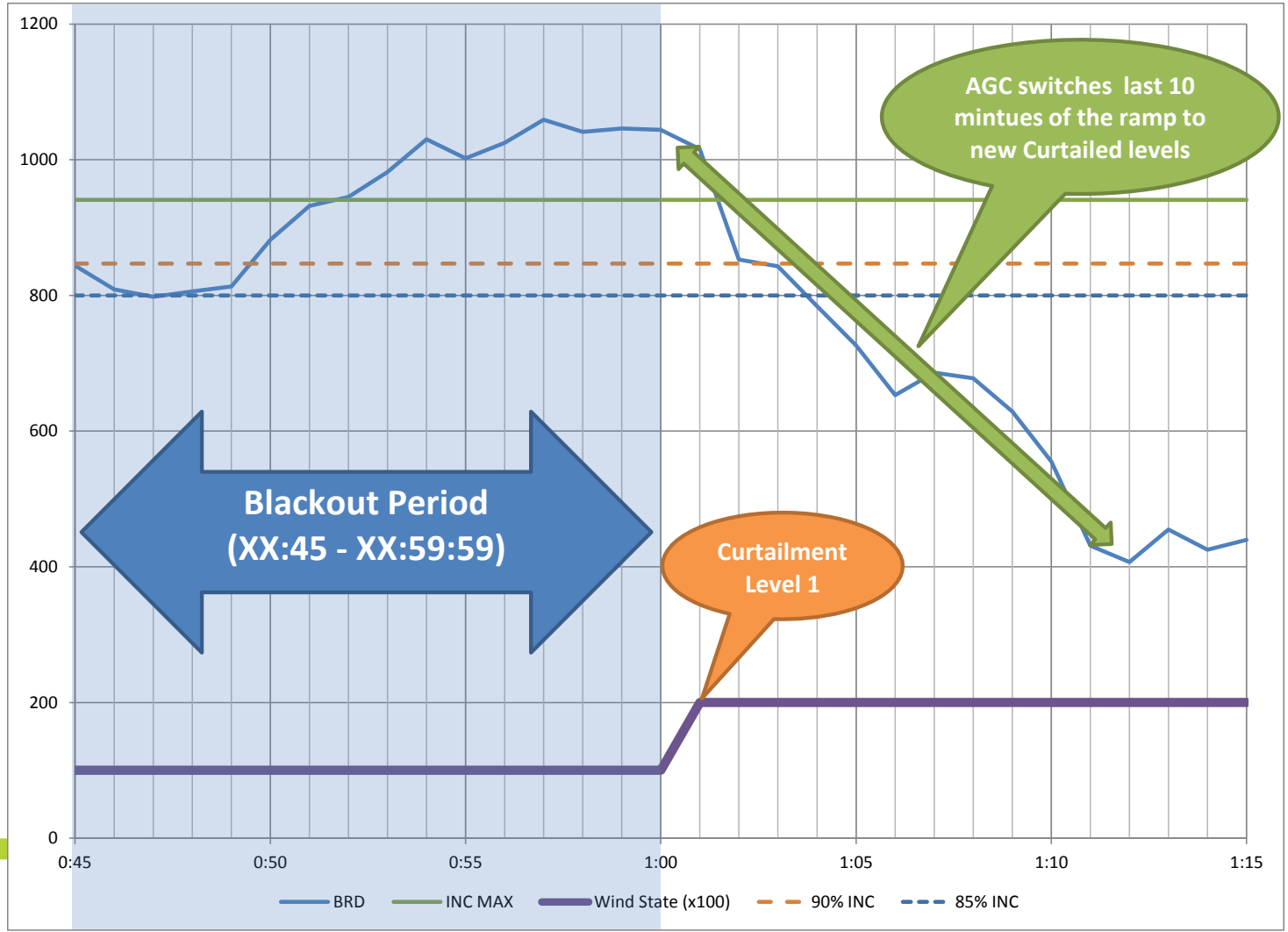
DSO 216 Re-Design for 15 Min Schedules

Blackout Periods, continued

- Proposed Blackout Period = None
  - With 15 minute scheduling and the current blackout periods, it is possible that a schedule could exist completely within the blackout period.
  - Limitation Events with the new In-Effect Period can carry forward beyond the top of the current hour.
  - Curtailment Events with the new In-Effect Period can provide relief beyond the top of the current hour

DSO 216 Re-Design for 15 Min Schedules

Example of Blackout Period causing Over-deployment



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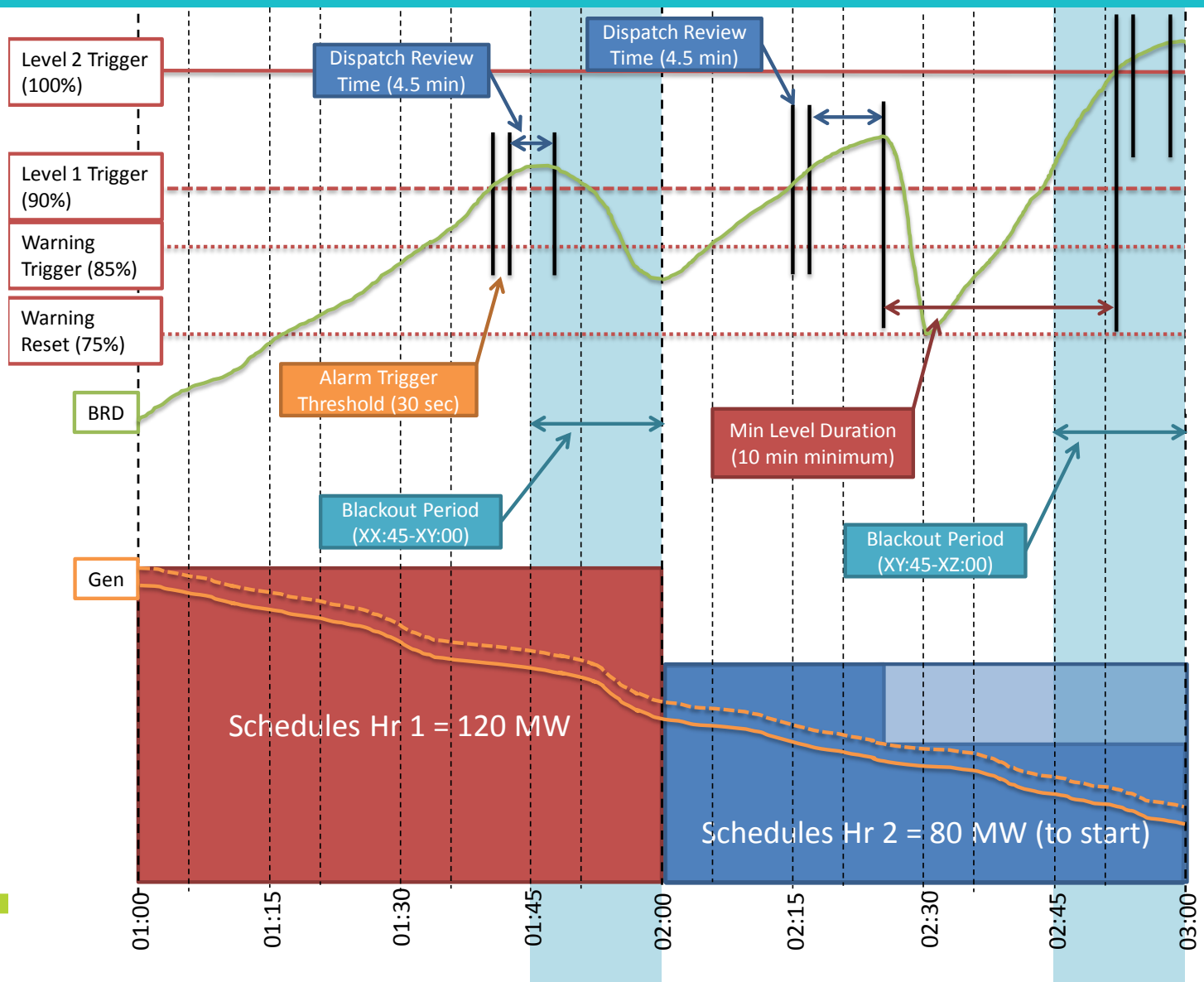
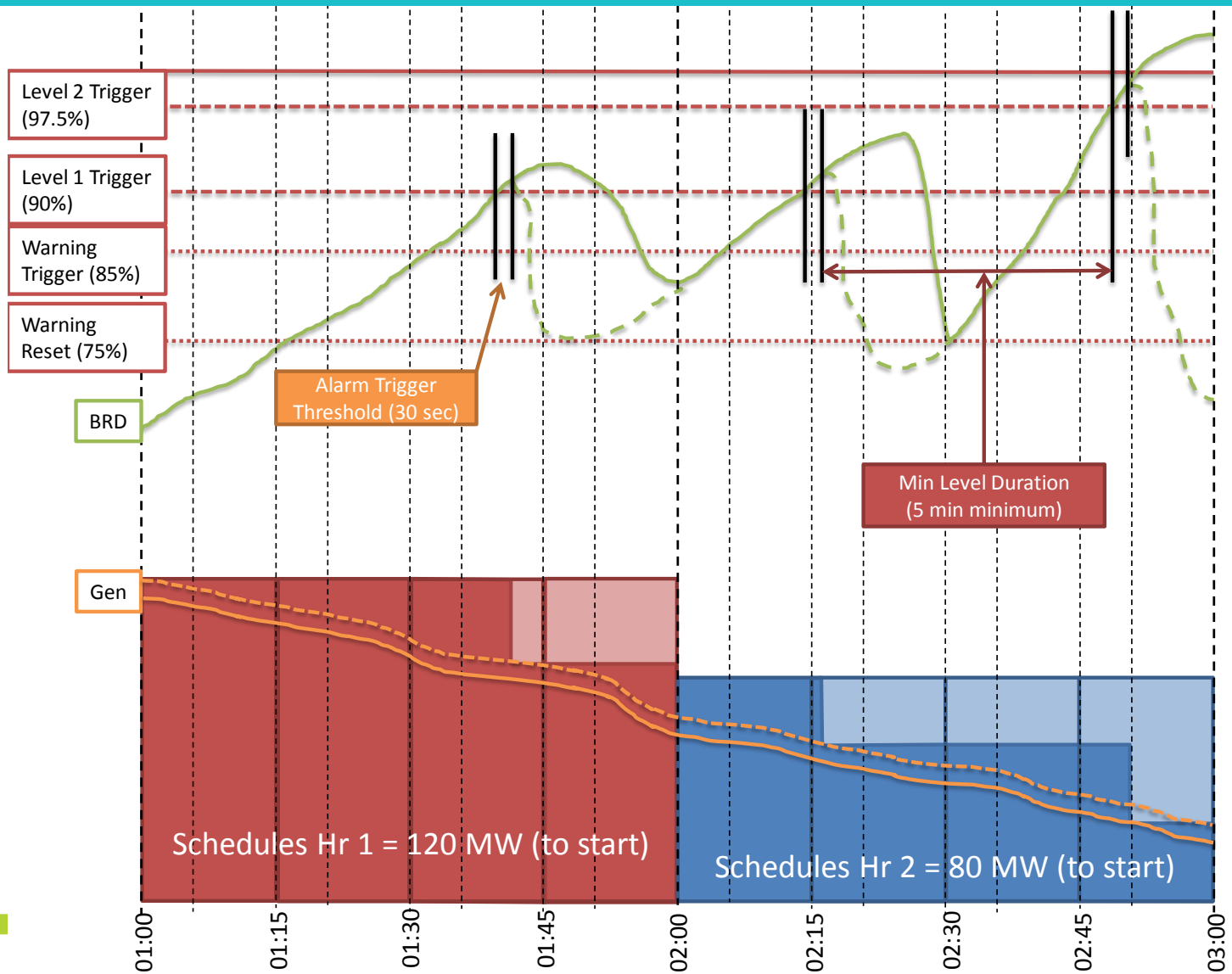


TODAY

DSO 216 Re-Design for 15 Min Schedules



As Proposed

DSO 216 Re-Design for 15 Min Schedules

Summary

- Level 2 Trigger Threshold = 97.5%
- Alarm Trigger Threshold = 30 Sec
- Dispatcher Review Time = 0 Minutes w/auto suspend
- Minimum Time Between Event Levels = 5 Minutes
- In-Effect Periods are implemented at:
  - xx:00 – xx:49:59 to the top of current hour (1 hour max)
  - xx:50 – xx:59:59 to the top of the next hour (1hr. 10 min. max)
  - If a prior level is in effect, the next level can be reached.
- Blackout Periods = None

DSO 216 Re-Design for 15 Min Schedules

Questions ?