Resiliency Update:
Proposed M-13 Changes

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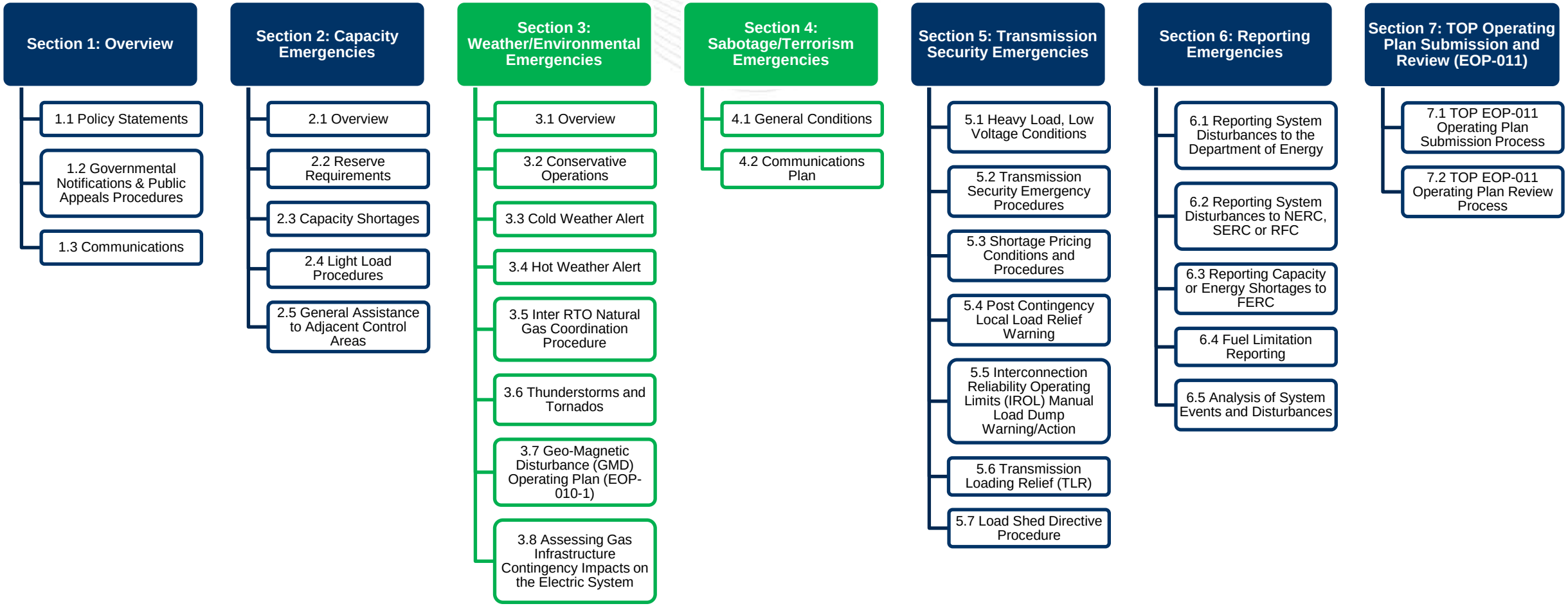
This is NOT a first read

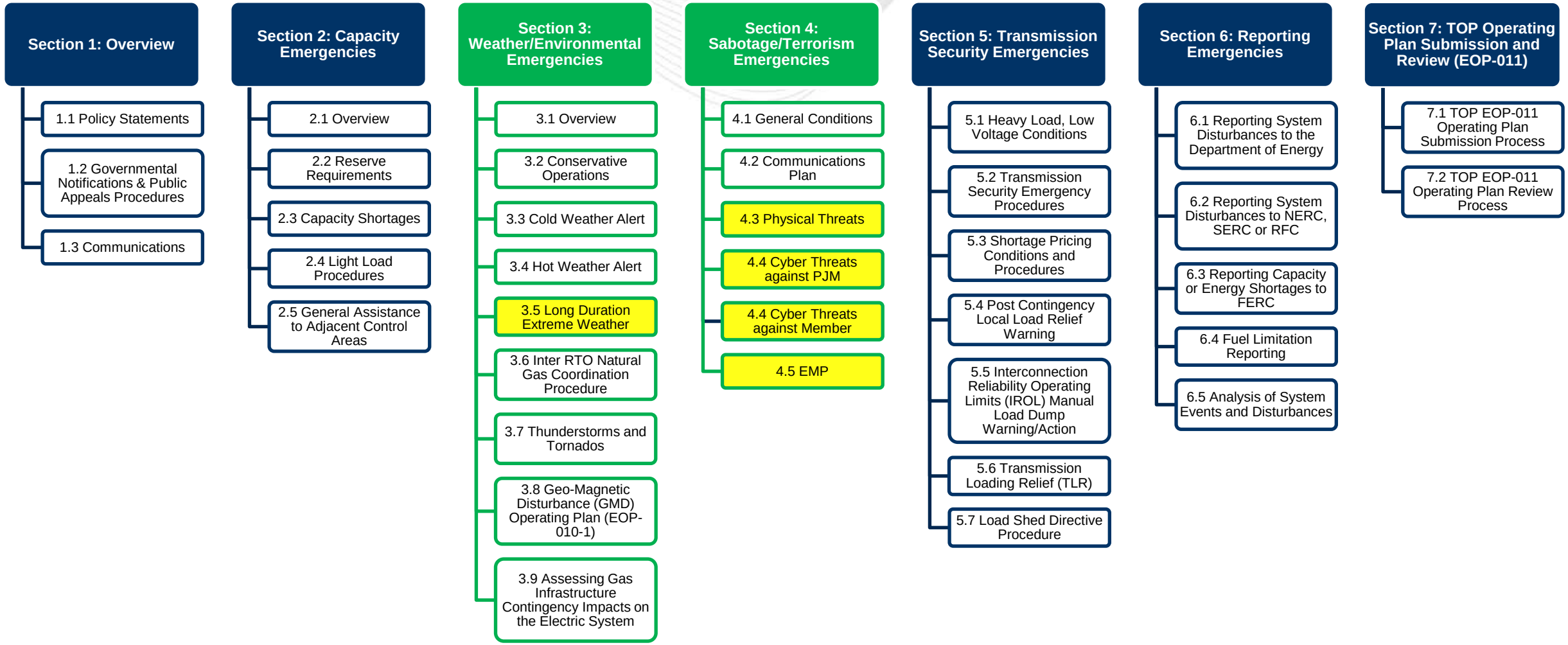
Purpose of this presentation is to review changes proposed by the SOS-T before drafting manual language

Restructure Sections

PJM Manual 13: Emergency Operations Current Structure



PJM Manual 13: Emergency Operations Current Structure



New Controlling Actions

PJM Change Freeze

- During conservative operations, a Production System Change Freeze will be in effect: PJM will refrain from updating any business application systems, programs, data, systems software, hardware and any other aspect of the information-processing environment at PJM

“The production change freeze is a procedure that is implemented to ensure a stable production environment over a defined period of time. A production change freeze is declared if PJM management decides conditions warrant it. Typical reasons for declaring a change freeze include extreme weather, system conditions, business continuity events, or staff availability.

The production change freeze has two objectives. First, it is designed to ensure staff is available for critical activities, should the need arise. Second, it is designed to help ensure a stable technical environment to support PJM's business and reliability functions.

The change freeze announcement will identify start date/time and the predicted duration or end date/time of the freeze period. At any point during the change freeze window, system conditions will be evaluated and an announcement regarding the lifting or extension of the change freeze will be made.”

Other Control Actions

- **Clarify increase in "Operating Reserves" as "30 Minute Reserves"**
  - Adjustments generally consistent with those made in Day-Ahead

- **For Extreme Weather expected to last more that 72 hours, where wide-scale fuel disruptions are expected:**

  (Extended cold-weather or blizzard conditions.)

  (Impacts of extreme weather (i.e. Hurricane damage) expected to last more than 3 days.)

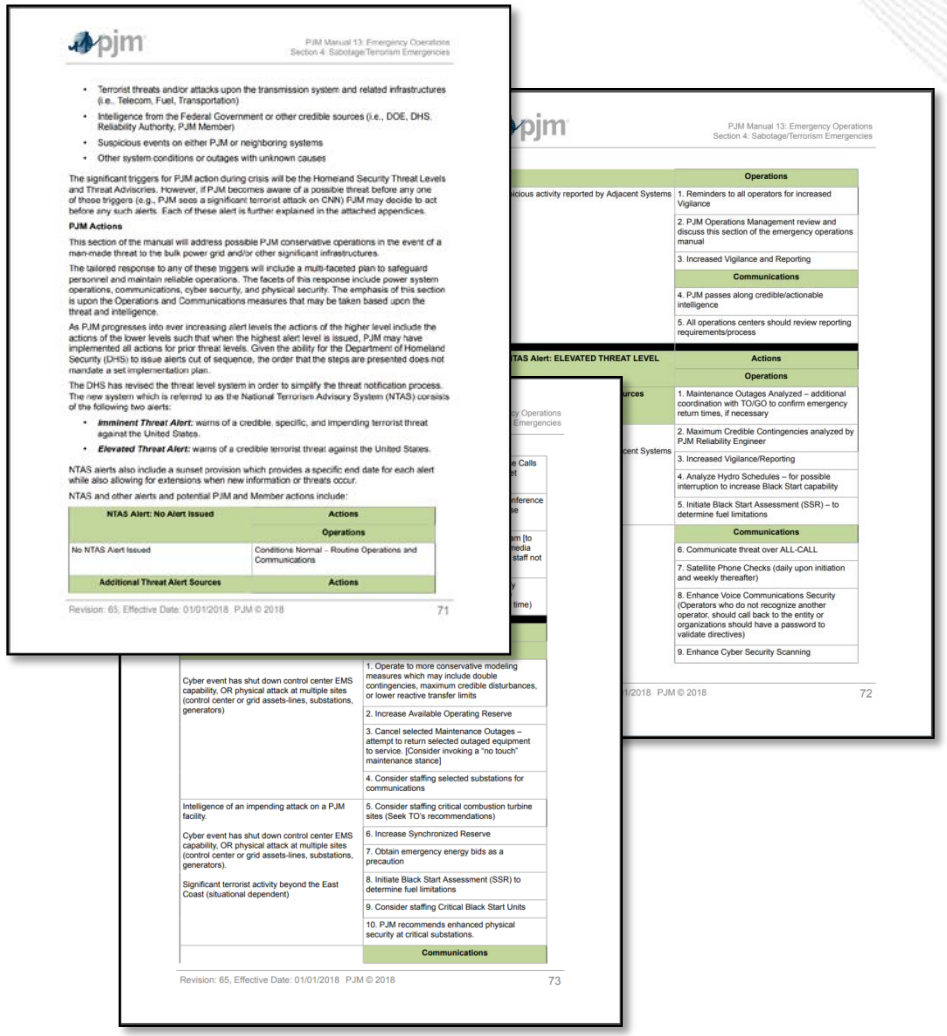
  (Other weather conditions expected to cause extended wide-scale fuel disruptions)

  - **Extend "Resource Limited Unit" reporting for generators to evaluate a time frame beyond 72 hours, as needed.**
  - **Report any other constraints that will restrict generator run times.**

Disable Auto-Reclosing relays

- Some companies may elect to manually disable Auto-Reclose Relays on certain lines that experience multiple re-close attempts during storms or other times during increased likelihood of “non-self-clearing” faults. TO’s may disable auto-reclose at their own discretion. However, Transmission Owners are required to inform PJM when they disable auto-reclose on any transmission facilities.

Section 4: Sabotage/Terrorism Emergencies
Physical Attacks Vs Cyber Attacks



- Re-format – remove table and present actions in “PJM Actions” / “Member Actions” format to match rest of manual
- Subsection for Physical Attack
  - Unchanged
- Breakout Subsection for Cyber Attack against PJM
  - Loss of ICCP/EMS
  - Loss of internet
  - Loss of telecommunications
- New Subsection for Cyber Attack against member company (GO/TO)
- New Subsection for EMP attack

New Controlling Actions for Cyber Attacks

- Manual Dispatch Instructions
- Verbal Communication Protocols
- Company View Mode
- PJM Operations Emergency Response Team (OERT) Actions
- PJM Incident Response Team (IRT) Actions
- SOS-T Conferences
- RCIS Reporting
- All-Call Alerts
- NERC Reliability Guideline: Generating Unit Operations During Complete Loss of Communications