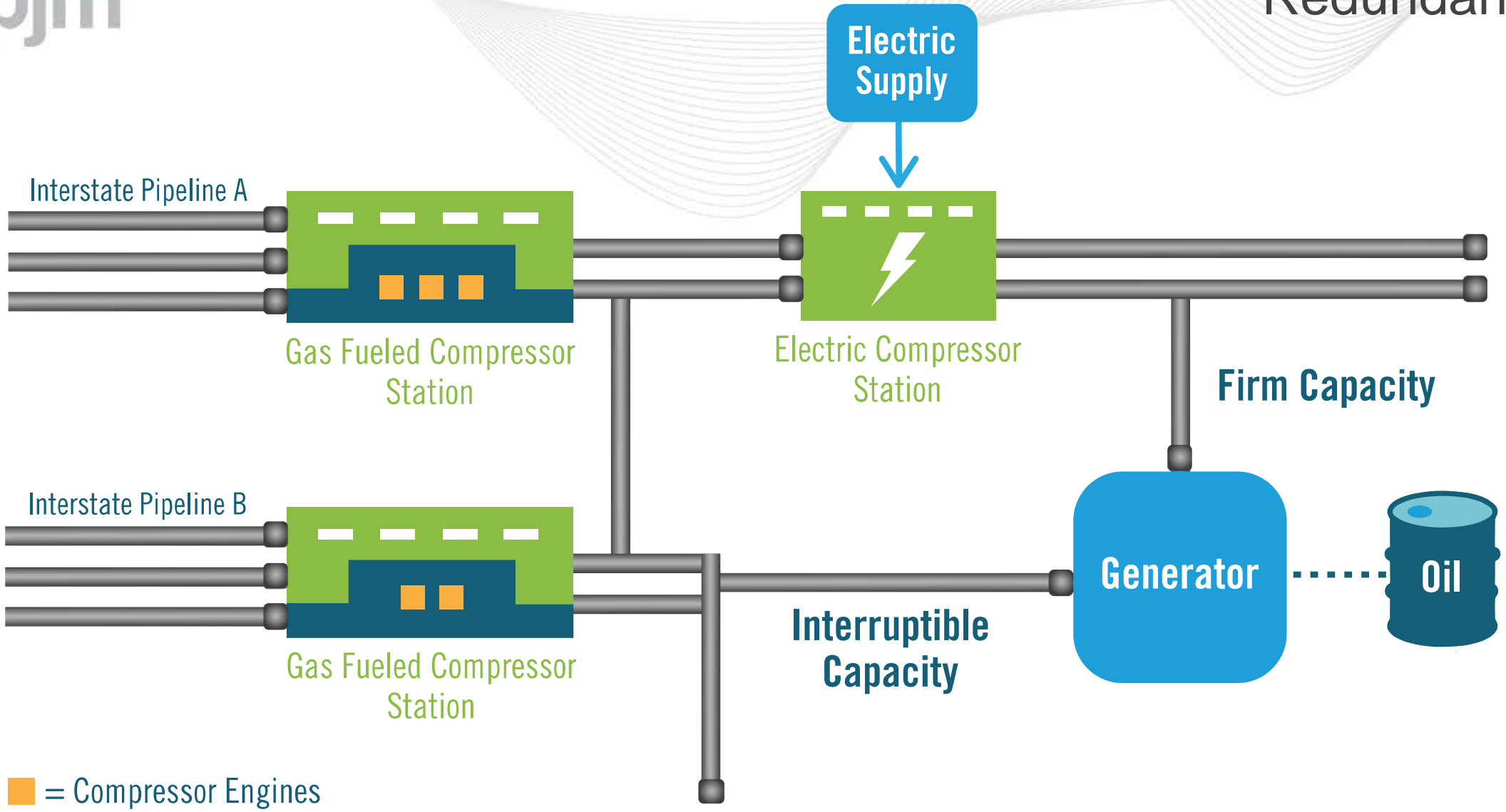


Gas Contingency - Assessment and Actions

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■ = Compressor Engines

Conservative Mode

- Credible cyber or physical threats to natural gas infrastructure **and**
- Contingency violations > load dump

Normal Mode

- Hot / Cold Weather Alert, Capacity Emergency, OFO, Pipeline Maintenance, Force Majeure **and**
- Contingency violations > load dump **and**
- Contingency occurs



Gas Pipeline Contingency Process Summary

	Normal Mode – Constrained Electric/Gas System Conditions	Conservative Mode - Cyber/Physical Threat Conditions
Procedure Triggers	Cold/Hot Weather Alert Capacity Emergency Pipeline Operational Flow Orders (OFO) Pipeline Maintenance Outages / Force Majeures	Pipeline Cyber/Physical Threat
Decision Criteria	Compressor station / Gas pipeline sufficiently redundant?	Credible threats to multiple pipelines in the same area?
Pre-Contingency Control	Status Quo Pre-Contingency Re-dispatch (control to load dump ratings)	Same Pre-Contingency Fuel/Pipeline switch
Post-Contingency Control	Status Quo Post-Contingency Fuel/Pipeline Switch	Same

- Estimate time to switch
- Communicate operational limitations to switch
- Fuel arrangements
- Update offers
- Notify PJM when complete