



## MARCH 2021 BOARD UPDATES: 2021 WINTER STORM URI & OTHER ITEMS

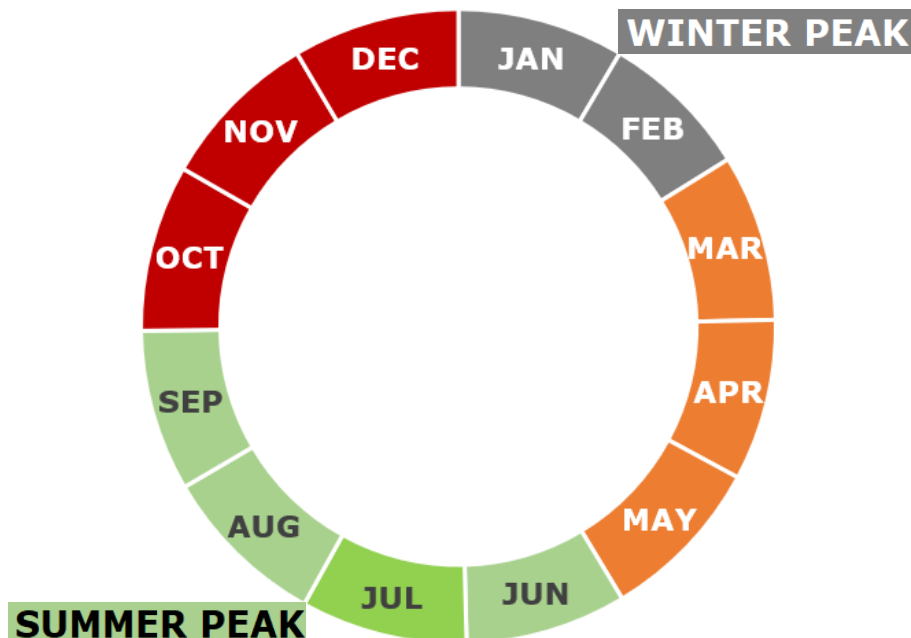
### I. **Planned Maintenance on all Generating Units occurs during off-peak months [initially proposed as] April, May, October and December.**

#### **A. TEXAS HAS HISTORICALLY BEEN ONLY A SUMMER-PEAKING STATE:**

1. June – September (4 months)
2. Maintenance outages have been scheduled annually during an 8-month period from October – April, in coordination with ERCOT.
  - 22 Fossil Units
  - 2 Nuclear Units

#### **B. NEW WINTER PEAK – PENDING OFFICIAL STATE DESIGNATION:**

1. No official designation has been made yet; new guidance is expected to come from the state level.
2. In the interim as a proxy, we currently anticipate that it probably will be two months: January and February.





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### **C. PURCHASED POWER:**

1. The compressed schedule for the outage window for the state will also increase power purchase requirements.

### **D. POTENTIAL INCREASED COSTS FOR OPERATORS:**

1. **OVERTIME:** The compressed schedule to a non-contiguous 6-month period will require increased overtime to perform the same planned work.
2. **CONTRACTORS:** This could also increase contractor costs.

### **E. MAINTENANCE DURATION:**

1. Some maintenance projects can also require more than 60 days to perform.
2. We are looking into an alternative that leaves some transitional cushion:
  - a. October – mid-December (2.5 months); and
  - b. March – mid-May (2.5 months).



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- II. Consider adding back-up fuel oil storage at strategic gas-fired generating units' locations, with de-rated capacity, to run continuously for a minimum of 10 days.**

**PRIORITIZED:**

**A. LEE EAST PEAKING UNITS 5-8:**

1. Already dual-fuel with 7-days of storage capacity.
2. Capital costs initially estimated at ~\$3.5 million to retrofit storage capacity for 10 days, with a potential Q4 2021 completion.
3. Will require an increased air permit. The timing is unknown.
4. We will also have to pay for the increased level of fuel oil inventory, including the maintenance.

**B. LEE WEST PEAKING UNITS 1-4:**

1. Can be converted to dual-fuel.
2. Capital costs initially estimated at \$1.8 million / unit (\$7.2 million total), plus ~\$10 million for a 10-day fuel storage and handling facility.
3. Will require new air permits, which could take up to 2 years.
4. We will also have to pay for the increased level of fuel oil inventory, including the maintenance.

**C. O.W. SOMMERS:**

1. Fuel oil system evaluation is planned to start in April 2021.

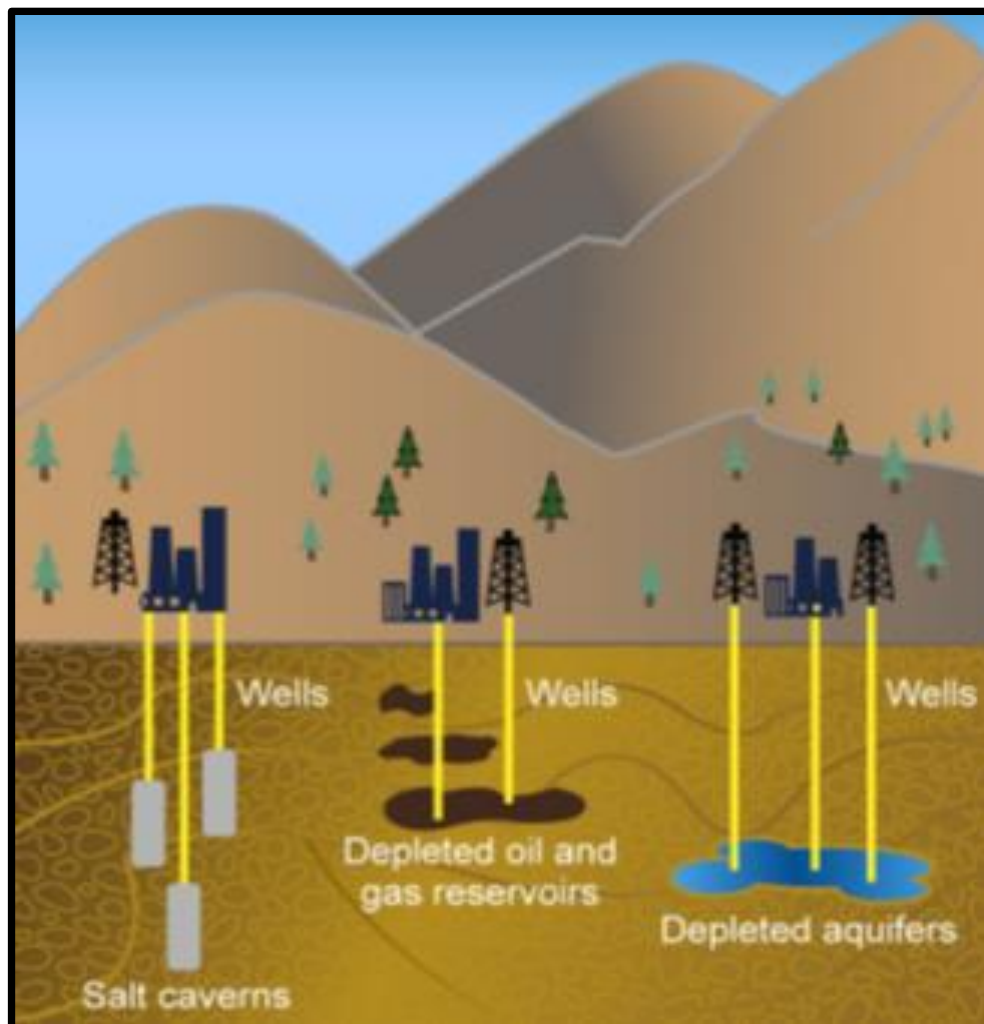
**D. AVR CT1 & CT2:**

1. Older Units.
2. Will need to assess further.

**III. Natural gas storage in salt domes located within close proximity to San Antonio to avoid pipeline delivery issues during winter freezing temperatures.**

**A. TYPES OF NATURAL GAS STORAGE:**

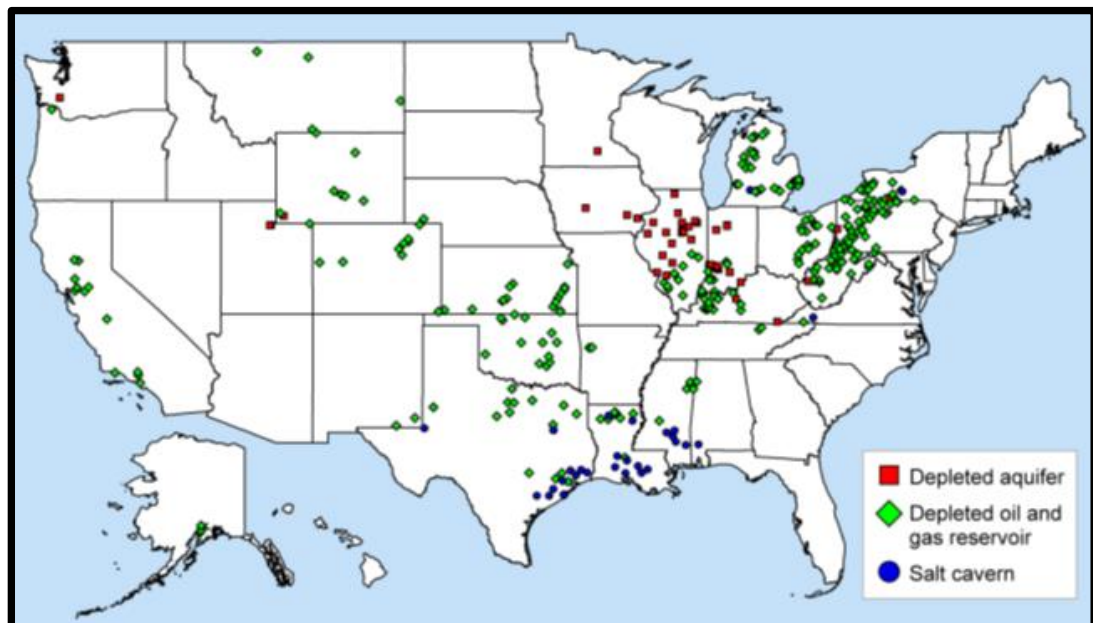
1. Depleted oil and gas reservoirs
2. Depleted aquifers
3. Salt caverns



Source: Partially from the GAO analysis of Pipeline & Hazardous Materials Safety Administration data and Energy Information Administration information.

### **B. CURRENT POSSIBLE SITES CLOSEST TO US:**

1. Most are salt caverns or depleted reservoirs near the Texas gulf coast.



### **C. HISTORICAL REASONS:**

1. We utilize storage to support the very dynamic, instantaneous and daily swings in gas demand for gas-fired electric generation and the gas distribution system, and to help supply our needs on peak gas demand days.
2. Our natural gas demand is very volatile, driven by weather, renewables and power market hourly and daily changes (firming).
3. Our current levels of natural gas storage have been sufficient in prior cold weather events.

### **D. WE CURRENTLY HAVE:**

1. 5 BCF (Billion Cubic Feet – standard unit measurement for natural gas supply/demand) of natural gas storage under contract on two different pipelines.
  - 3 BCF at one location; and
  - 2 BCF at another.
2. Daily draws are limited. You can only get so much out. This naturally controls supply.



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### **E. EXPLORING THE POTENTIAL NEED TO COVER NEW WINTER-PEAK SUPPLY LEVELS:**

1. Now initially estimated at ~12 BCF of salt dome storage.
2. Need higher draw levels of ~750,000 MMBtu/day.

### **F. TRANSPORT - STORAGE TO PIPELINES CONNECTIONS:**

1. It is better to have natural gas storage directly connected to our pipeline system; however, this is currently not available.
2. We need to contract for storage capacity on the pipelines connected to our system.

### **G. MORE EVALUATION IS NEEDED:**

1. Based on the recent February 2021 cold weather event, we need further evaluation.



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- IV. Weatherize/Winterize/Freeze Protection are key to gas fired generating units' components, i.e., piping, pumps, valves, metering equipment, etc.**
- A. CONDUCTED PRIOR ENGINEERING ASSESSMENTS, BASED ON 2011 EVENT:**
1. We addressed all recommendations.
- B. NEW DATA CONSOLIDATION & REVIEW:**
1. Preliminary work is currently underway.
- C. EXPECT NEW REGULATIONS:**
1. We anticipate additional guidance from Regulators on a new freeze-protection standard.
- D. WE WILL AGAIN OBTAIN THIRD-PARTY ASSISTANCE:**
1. We will then initiate a new formal, third-party plant freeze protection evaluation that will be based on the most appropriate design standards.



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### V. Other Fuel Considerations:

#### A. **NEW ASSESSMENTS:**

1. We will also look at the breakdown in the natural gas delivery systems.

#### B. **RESILIENCY SYSTEMS:**

1. We need to study what more we can do.
2. We also need to study what large commercial and industrial customers can do.

#### C. **FINANCIAL HEDGES:**

1. We are considering how to enhance our program.





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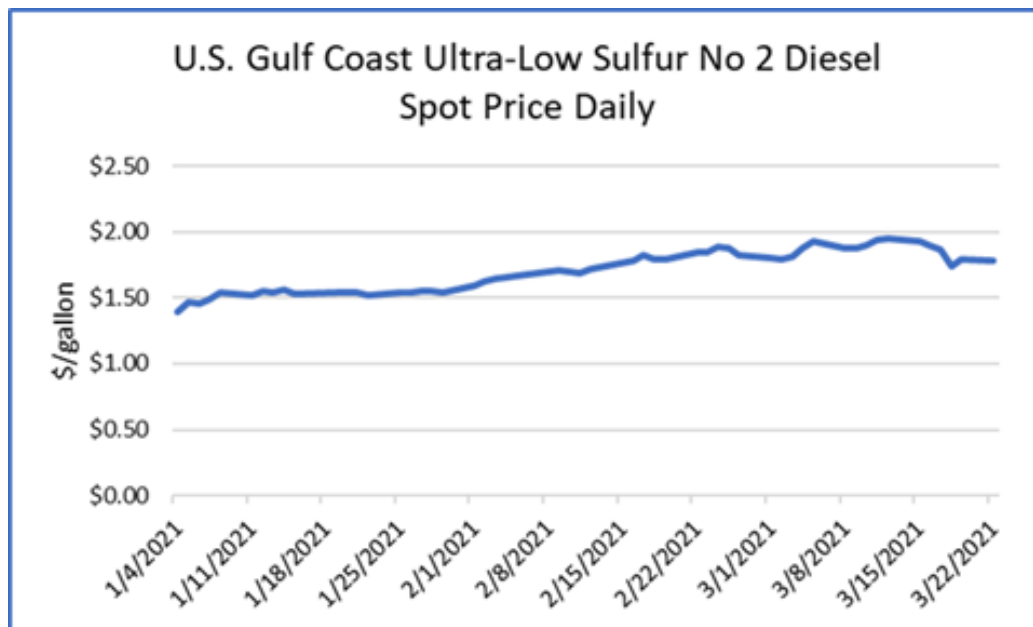
### VI. Fuel Oil cost relative to Natural Gas: Did fuel oil pricing increase during the weather event the way gas did?

#### A. ENVIRONMENTAL CHALLENGE:

1. We must consider emissions and regulatory implications with our community.

#### B. MINIMAL FUEL OIL VOLATILITY:

1. During the February 2021 cold weather event, fuel oil prices (Ultra-Low Sulfur No. 2 Diesel) did not spike to extreme levels like natural gas did.
2. Wholesale fuel oil prices only increased from about \$1.50 per gallon to nearly \$2.00 per gallon during and after the event, due primarily to refineries that shut down during the cold weather.
3. The refineries have restarted operations and are working to restore production.





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**VII. Just in case you need to rotate outages at the retail level, ensure the Distribution System Engineers and Control Center Dispatchers complete an inventory of ALL distribution circuits/feeders to know which ones to rotate to start with and which to timely restore. Keep SAWS, NSA, hospitals, etc. on and select mostly residential customers to rotate.**

**A. EVENT MAGNITUDE & DURATION MATTER:**

1. For an event with the magnitude experienced in 2021's Winter Storm Uri, as many circuits as possible will need to be shed to reduce the duration of the load shed periods for all.

**B. INTERNAL TEAM EFFORTS HAVE BEEN LAUNCHED:**

1. System Operations and Customer Engagement are working to update our list of proposed critical customer loads, so we can assess how we can best serve critical customers in an event like this in the future.
2. Some short-term improvements are being pursued, such as changes to our load shed programming and optimization of circuit designations (critical, load shed, or Under frequency).
3. Load shedding is done in a standard way across the industry, especially relative to large systems.
4. There are no immediate solutions that are off-the-shelf. Systems will need to be upgraded or created to address this need more effectively.
5. This effort will be complemented by our effort to work with additional large commercial and industrial customers to invest in resiliency infrastructure (i.e., back-up generators, batteries, etc.).
6. We began re-engaging with customers, including SAWS, to get their thoughts and consider new vendor solutions together.

**C. CRITICAL CIRCUIT DESIGNATIONS ARE BEING REVIEWED & RE-THOUGHT:**

1. Our critical customers include those often discussed such as hospitals and public safety, as well as others such as critical infrastructure which, for example, includes the network that flows fuel to our plants and natural gas systems.
2. There are many critical needs across our service territory and we are working to engage with these customers, understand their needs, and look for solutions which may include customer-side solutions in many cases (i.e., back-up generators, batteries, etc.).



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### VIII. How is the *FlexPOWER Bundle*<sup>SM</sup> coming along?

#### **A. THERE WILL BE A STATUS PRESENTATION AT THE MARCH 2021 BOARD MEETING:**

1. There will be regular updates to the Board, City Council and the Community.

#### **B. IT IS STILL IMPORTANT TO COMPLETE THIS INITIATIVE:**

1. Power plants continue to age.
2. These replacements need to be completed carefully.
3. This process will give us up-to-date information about what solutions are most viable.

#### **C. AFTER THIS RFP IS COMPLETED, WE WILL NEED TO CONSIDER OTHER VERSIONS FOR THE FUTURE:**

1. Future versions of the Bundle will need to also focus on addressing our winter peak.
2. Winter Storm Uri lessons need to be included in future Resource Plans and proposals.



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### IX. When do we expect to restart disconnects?

#### A. **DISCONNECTS SUSPENDED $\approx$ 1 YEAR:**

1. We have not done disconnects for a year.

#### B. **CONTINUING PAYMENT PLANS, INCLUDING WAIVED LATE FEES FOR PROGRAM PARTICIPANTS:**

1. We continue to work with our customers proactively.
2. We launched the Energy Angels Program.

#### C. **PROJECTED REACTIVATION TIMING:**

1. We expect to restart disconnects in the late spring or early summer, as vaccinations reach critical mass.