

# 2022 Winter Preparation Webinar



Jan 27 2023

NOVEMBER 2, 2022



BUILDING A SMARTER ENERGY FUTURE®

# Level 1 Safety Review

- Be aware of your surroundings and safety precautions
  - Know your safe locations and exit routes
  - Active Shooter Protocol: Run, Hide or Barricade, and last resort, Fight
  - Review safety protocols for the buildings in which you visit, these may have changed since your last visit.
  
- If traveling, please use your device hands-free or hang up and rejoin when no longer mobile
  
- Safety Moment: Winter Season brings all new challenges for your preparedness. Review your prep kits and make sure it is in good standing. After assembling your kit remember to maintain it so it's ready when needed:
  - Replace expired items as needed.
  - Review your travel kit and adjust it for winter travel
  - Re-think your needs every year and update your kit as your family's needs change.

# Review of Participation

- Due to numerous changes over the past years, it is important we account for attendance in these meetings.
- During an Operation Excellence review, it was suggested that roll call be conducted to ensure leadership is present for the Departments reporting out

Department
Transmission
Fuel, System & Optimization
Regulated & Renewable Energy
Nuclear
Customer Delivery
Demand Side Management
Corporate Communication





# SAM HOLEMAN

## VICE PRESIDENT SYSTEM OPERATIONS

Opening Comments



# KEN DAVIN

## MANAGER POWER TRADING SOUTHEAST

Fuel, System & Optimization Status



# Carolinas Power – As-Available Capacity Agreement DEC/DEP

- We will continue to leverage the As-Available Capacity Agreement that enables DEC and DEP to sell each other capacity when one entity is short reserves, and the other entity has excess.
- So far in 2022, the agreement was leveraged 63 times, for over 131,000 MWH of capacity.
- Of the 63 transactions in 2022, all but 3 were DEP to DEC.
- There were only 2 As-Available transactions during the past winter... both DEC to DEP.
- To be able to transact under the As-Available agreement, there must be firm point-to-point transmission out of the source BA, and firm transmission available on the sinking BA to obtain a DNR reservation.

# Carolinas Power – Capacity Availability – Inside DEC

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Generator	Owner	BA	MW	Comments
Cleveland County	Southern Company	DEC	185	Potentially available for Capacity Purchase. Unsold capacity also used for SOCO's pool load
Rowan	Southern Company	DEC	150	Potentially available for Capacity Purchase. Unsold capacity also used for SOCO's pool load
Cleveland	NCEMC	DEC	185 & 135	May need portion for their load... 8:30 AM strike w/ SOCO
Rowan	NCMPA	DEC	150	May need portion for their load... 8:30 AM strike w/ SOCO
Cleveland	NCMPA	DEC	185	May need portion for their load... 8:30 AM strike w/ SOCO
Kings Mountain CC	CPP	DEC	100 to 150	Varies based on customer load.

# Carolinas Power – Capacity Availability – Outside DEC/PEC

Generator	Owner	BA	MW	Comments
Hillabee	Exelon	SOCO	300	Subject to transmission limits.
Yadkin Hydro	Macquarie	YAD	Up to 175	Macquarie markets power out of Yadkin.
PJM	Macquarie	PJM	200+	Macquarie can supply firm generation out of PJM that can be tied to DNR
SOCO Sources	Macquarie	SOCO	300	Macquarie has options on firm gen. Has firm path out of SOCO.



# Coal Inventories Full Load Burn Days (FLB) Remain Adequate

Station	FLB Days 9/30/22	Projected FLB Days 12/31/22	Current Internal FLB Day Target	Constrained FLB 12/31/22	Station	FLB Days 9/30/22	Projected FLB Days 12/31/22	Current Internal FLB Day Target	Constrained FLB 12/31/2022
Allen 1&5	13	21	18	-	Crystal River	45	50	45	-
Belews Creek	48	51	30	43	Cayuga	39	50	25	35
Cliffside 5	30	38	30	-	Edwardsport	26	54	20	-
Cliffside 6	33	38	30	-	Gibson	36	58	45	42
Marshall	43	56	30	32	East Bend	41	47	30	-
Mayo	26	30	33	28					
Roxboro	33	41	33	38					

Difference in Projected FLB Days versus Constrained FLB is based on planned deliveries versus anticipated actual deliveries  
FLB projections based on June Stochastic Mean burn projections

# Continued Coal Transportation and Supply Chain Challenges

- Despite deliveries continue to lag contracted volumes adequate supply expected to meet winter demand
  - Contracted at upper end of projected procurement needs for Q4 2022 and 2023 to ensure adequate delivered supply
  - Updated dispatch pricing to reflect economics of market supply chain dynamics
  - Diversified transportation modes for coal and coal related consumables where possible
  - Continued engagement with railroad and suppliers
- Supply chain issues expected to last into 2023
  - Railroads and coal producers continue to right-size labor, but labor shortages persist
  - Suppliers impacted by rising costs and tight downstream supply chains – labor, fuel, explosives, equipment
  - Rising costs putting operations at risk of closure reducing supplier diversity
  - Company's delivered coal costs expected to reflect rising production costs but mitigation efforts working to limit impact
    - Expanding focus of successful fuel flexibility program

# Rail Transportation Strike Update

- Tentative agreement reached prior to the September 16th strike deadline
  - Railroads moved back to normal operations
    - Coal and other bulk commodities last to be laid down and first to be moved back into operation
  - Unions have through late November to fully ratify Agreement, full ratification is expected
    - To date four have ratified and eight are pending ratification
  - In the event of a failed ratification, parties have agreed to maintain status quo pending further discussions. As such, a failed ratification does not present risk of an immediate service disruption
- Should a full-scale rail service disruption occur the Company has fuel supply contingencies in place including but not limited to:
  - Progressive dispatch plan that provides least cost response to disruption
  - Ability to meet higher than anticipated natural gas burn
  - Increased on-site fuel oil inventories
  - Improved redundancy and resilience of trucking availability for:
    - Fuel oil replenishment
    - Critical environmental reagents such as limestone and ammonia
- A strike disruption is no longer anticipated; however, continued coal supply chain constraints are expected as the railroads continue to hire, train, and most importantly, retain personnel.



# Natural Gas Winter Operations Focus

- Natural Gas Market
  - Since the beginning of the year, November 2022 to March 2023 NYMEX natural gas strip is up ~43% at ~\$5.72 MMBtu/day
  - US natural gas storage levels are 3.1% less than last year at this time and 5.1% below the five-year average.
  - Natural gas production is currently ~97 Bcf/day and has increase over the past several months
  - Elevated Asian/European LNG delivered prices supporting export demand for US gas supply
- Supply and Pipeline Management
  - Transco Pipeline daily operational restrictions (OFO's): 24-hour monitoring and coordination (Gas Dashboard) between Power Trading, ECC and Unit Commitment is critical to avoiding pipeline imbalance penalties
  - Supply sufficient to meet peak expected daily winter burn forecast
  - Carolinas and Florida physical supply set-up incorporates diverse contracts to manage supply and daily volatility
  - Incremental Firm Transportation purchased for operational management
  - Carolinas and Florida utilize storage withdrawals and injections to manage intraday burn deviations
  - Midwest utilizes an asset manager and market to secure firm supply, enhance reliability and manage pipeline integrity mandates



# Fuel Oil Inventory and Management

- Gas - Fuel oil economics : ~\$4.34MMBtu vs ~\$31.26 MMBtu
- Carolinas CT and CC on site storage tanks are ~ 80% full, ~ 88 FLB hours inventory across the system
- DEF CT and CC on site storage tanks ~ 65 FLB hours inventory across the system
- DEC and DEF Offsite storage approximately 98,000 barrels
  - DEC 41,000 barrels / DEF 57,000 barrels
- Emergency Trucking agreements in place for priority deliveries
- If necessary, Open delivery window at plants to 24-hours.
- Daily communication of Fuel Oil Inventory levels including 7-day forecasts
- Leverage power markets, daily optimization of firm natural gas deliverability



# RICK LLEWELLYN

## DIR RRE FLEET OPS & GOV

Regulated & Renewable Energy Status

# Regulated & Renewable Energy

- Winter reediness update
  - Carolina Regulated Renewable – No exceptions.
  - Carolina Natural Gas – No exceptions for seasonal preparations.
    - Wayne County 11 derated to 168 MWs due to combustion issues.
    - HF Lee unit 1B limiting starts due to row 10 and 11 compressor blade issues.
    - Sutton, heat trace added to fuel oil recirc line.
  - Carolina Coal - No exceptions for seasonal preparations
    - Allen potential derate of 10MW on U1 due to condenser flow degradation
  - Midwest – No exceptions.
  - Florida – No exceptions for seasonal preparations
    - Intercession City P7 through P10 derated to 67MW
    - DeBerry P7 through P10 derated to 67MW



# Regulated & Renewable Energy

- NERC EOP-011-2

- Procedures issued in Fusion
- PMs created in Maximo
- Required training courses completed

- R7.** Each Generator Owner shall develop, maintain, and implement one or more cold weather preparedness plan(s) for its generating unit(s). The cold weather preparedness plan(s) shall include the following, at a minimum: *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-Time Operations]*
- 7.1.** Generating unit(s) freeze protection measures based on unique factors such as geographical location and plant configuration;
  - 7.2.** Annual maintenance and inspection of generating unit(s) freeze protection measures; and
  - 7.3.** Generating unit(s) cold weather data, to include:
    - 7.3.1.** Generating unit(s) operating limitations in cold weather; and
    - 7.3.2.** Generating unit(s):
      - 7.3.2.1.** minimum design temperature; or
      - 7.3.2.2.** minimum demonstrated historical performance during cold weather in the previous 5 years;
  - 7.4.** Awareness training on the roles and responsibilities of site personnel contained in the cold weather preparedness plan.



# RICK GREEN

## NUC CFAM - OUTAGE

Nuclear Status

# Nuclear Generation

## Site roles and responsibilities for hot weather

- Operations:
  - Align and checks heating system and ventilation operation prior to cold weather, verifies equipment is working properly during cold weather, and performs special checks during extreme cold weather
- Maintenance:
  - Repairs equipment identified by OPS during performance of their procedure
- Online Work Management
  - Ensures all outstanding work on freeze sensitive systems/components is scheduled to complete before November
  - Ensures special emphasis codes are placed on work orders to ensure proper priority is placed on repairing any defective equipment.

# Nuclear Generation

## Site roles and responsibilities

- Online Work Management (con't)
  - Leads critique of equipment operations/site response after extreme cold weather periods.
- Site Management
  - Ensures status of work is reported out frequently in plant status meeting.

## Corporate office roles and responsibilities

- Sites reports status of procedure implementation and corrective work on Friday fleet call during hot weather season preps. Corporate office provides challenges and feedback to readiness.
- Ensures operating experience is shared across the fleet related to hot weather issues

# Nuclear Generation

- Cold Weather Preparation Status of Plants
  - Progress and Completion Timeframe (as of 10/25/22)

Site	Total work orders outstanding
BNP	1
CNS	11
HNP	0
MNS	7
ONS	1
RNP	4

The following is the only challenge to the Nov 1<sup>st</sup> Milestone date for completion of Winter readiness activities: Install temp power for cold weather operations (BNP, long duration PM currently WIP, expected finish 11/16/22).



# Nuclear Generation

- Emergency Diesel Generator (EDG) Maintenance Windows in Winter Months

Site	EDG window
BNP	0
CNS	2 1A-2/6, 1B-2/23
HNP	0
MNS	1 2B-3/11 M2R28
ONS	0
RNP	0

- Summer Events
  - No events occurred relative to hot weather or inadequate preparedness for the hot weather season.



# GREG DISHER

MGR GRID MGMT

Customer Delivery

# Customer Delivery

## Bank Repair Location(s)

- **Brook St Ret (DEC)** work being performed on Bank #1 transformer replacement, all circuit load transferred to Bank #3 LTC. Analyzed Contingency Switching for Distribution
- **Tri-City (DEF)** from Hurricane Ian damage, transfer load for neighboring substations
- **Morehead 115Kv (DEP)** on mobile and substation rebuild have backup mobile on-site.
- **Asheboro South 115kV (DEP)** on mobile and substation rebuild, switching contingency in case failure of mobile.
- **(DEMW)** no locations with concerns

## DEF's Capacitor Fleet:

- Year-to-date, \$5.1M has been spent on the capacitor fleet.
- Since the beginning of the year, there has been a 34% decrease in the number of capacitors out-of-service.
- System power factor is between 0.99 and Unity.

## Return to Normal Conditions

- Circuits are RTN where possible to account for winter loading conditions

# Customer Delivery

	Duke Energy West (DEC)	Duke Energy East (DEP)	Duke Energy Florida (DEF)	Duke Energy Midwest (DEMW-IN & OH)
<b>Voltage Reduction</b>	None	Two Emergency Levels <ul style="list-style-type: none"> <li>• EM1 - 2.9%</li> <li>• EM2 - 5.0%</li> </ul>	Normal CVR (Conservation Voltage Reduction) w 2-levels <ul style="list-style-type: none"> <li>• Level 1 - 2.5%</li> <li>• Level 2 - 3.0%</li> </ul>	Continuous Energy Reduction and Demand Reduction targeting 2%
<b>Load Shed</b>	<b>Shed:</b> Automated <b>Rotation Plans:</b> Automated <b>Rotation Interval:</b> 15 min  <b>Total Load:</b> ~8643 MW	<b>Shed:</b> Automated <b>Rotation Plans:</b> Automated <b>Rotation Interval:</b> 15 min  <b>Total Load:</b> ~4000 MW	<b>Shed:</b> Automated <b>Rotation Plans:</b> Automated <b>Rotation Interval:</b> 15 min  <b>Total Load:</b> ~5400 MW	<b>Shed:</b> Automated/Manual <b>Rotation Plans:</b> Manual <b>Rotation Interval:</b> Manual*  <b>Total Load:</b> ~2750 MW





# MARK KAMETCHES

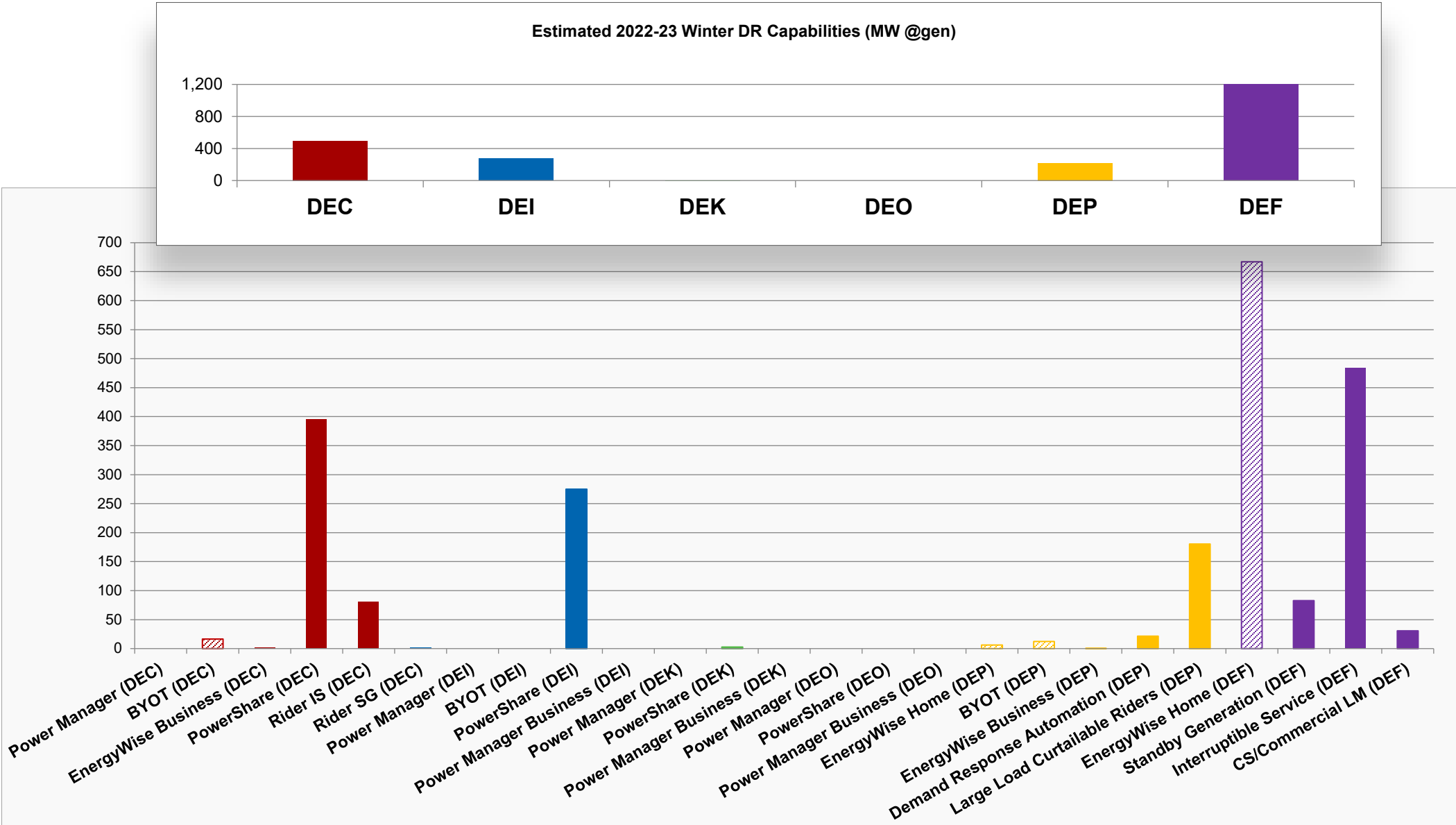
## SR PRODUCTS & SERVICES MGR

Non-Residential DSM Status

# Customer Delivery - DSM

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# Non-Residential DSM

## Winter 2022-23 Preparedness Activities

- Coordination with internal stakeholders
  - Complete annual training sessions
  - Update internal distribution lists
  - Provide updates on program capabilities in advance and during tailgate/event calls
  - Review/update event-related IVR Call Center scripts and Help files as necessary
- Customer interaction
  - Coordinate C&I customer engagement through LAM to ensure readiness, accuracy of contact information, and understanding of contractual commitments
  - Conduct pre-season notification system tests and review of standard event messaging templates
- Functional updates and testing of systems
  - Schedule push of new software releases for internal and vendor-hosted program/device management systems
  - Continued monitoring of control/paging networks
  - Investigate and replace/remove inactive or disconnected devices

# Customer Delivery – Non-Residential DSM

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WINTER 2022-23 PREPAREDNESS ACTIVITIES LARGE BUSINESS DEMAND RESPONSE PROGRAMS	Date Task Scheduled to be Completed					
	DEF	DEP	DEC	DEI	DEK	DEO
<b>Coordination with internal stakeholders</b>						
Conduct annual training sessions	-	3/29/2022	3/29/2022	10/24/2022	10/24/2022	
Provide updates on program capabilities	Ongoing	10/31/2022	10/31/2022	Ongoing	Ongoing	
Update IVR scripts and Help files, as necessary	-	-	-	Ongoing	Ongoing	
Update internal distribution lists	Ongoing	-	-	Ongoing	Ongoing	
<b>Customer interaction</b>						
Engage participants to ensure readiness	Ongoing	12/15/2022	12/15/2022	12/31/2022	3/31/2022	
Conduct pre-season notification system tests	Ongoing	5/26/2022	5/19/2022	5/26/2022	6/2/2022	
<b>Functional updates and testing of systems</b>						
Schedule software updates for headend systems	11/4/2022	4/29/2022	4/29/2022	Ongoing	Ongoing	
Verify operability of control networks	Daily	Monthly	Monthly	-	-	
Replace inactive/obsolete devices	Ongoing	Ongoing	Ongoing	-	-	





# BRIAN LUSHER

## MGR RESIDENTIAL DEMAND RESPONSE

Residential DSM Status

# Residential DSM

## Winter 2022-23 Preparedness Activities

- Coordination with internal stakeholders
  - Complete annual training sessions
  - Update internal distribution lists
  - Provide updates on program capabilities in advance and during tailgate/event calls
  - Review/update event-related IVR Call Center scripts and Help files as necessary
- Customer interaction
  - No customer notification planned (other than DEF bill message) for Residential events
- Functional updates and testing of systems
  - New software releases tested for DEC/DEI/DEK vendor-hosted device management systems
  - Continued monitoring of control/paging networks
  - Investigate and replace/remove inactive or disconnected devices

# Customer Delivery - Residential DSM

WINTER 2022-23 PREPAREDNESS ACTIVITIES RESIDENTIAL DEMAND RESPONSE PROGRAMS	Tasks Scheduled to be Completed					
	DEF	DEP	DEC	DEI	DEK	DEO
<b>Coordination with internal stakeholders</b>						
Conduct annual training sessions	October	BYOT - Nov.	BYOT - Nov.	-	-	
Provide updates on program capabilities	Ongoing	Ongoing	Ongoing	-	-	
Update IVR scripts and Help files, as necessary	-	-	As needed	-	-	
Update internal distribution lists	Ongoing	Ongoing	Ongoing	-	-	
<b>Customer interaction</b>						
Periodic Customer Contact	Bill Message	None	None	-	-	
<b>Functional updates and testing of systems</b>						
Appliance Type	Thermostat Heat Strip Water Heater Pool Pump	Thermostat Heat Strip Water Heater	Thermostat Heat Strip	No winter capability	No winter capability	No approved programs
Schedule software updates for headend systems	11/4/2022	-	November	-	-	
Verify operability of control networks	Monthly	Monthly	Monthly	-	-	
Replace inactive/obsolete devices	Ongoing	Ongoing	Ongoing	-	-	



# LOREE ELSWICK

## DIRECTOR COMMUNICATIONS

Corporate Communications Status



# Corporate Communications

- Summer Event Review:
  - May 18-19: DEC Yellow Hands Off
  - May 20: DEC Orange
    - Internal energy conservation appeal to Carolinas teammates
    - Distributed “soft appeal” energy conservation news release
    - Updated OneNote to deliver consistent messages across all platforms (media, customer, stakeholder, etc.)
    - Received media calls – reporters asked if we have “sufficient resources”
    - Reviewed, updated and prepared messages – including mass channels and customer channels with “hard appeal” energy conservation messages and potential messages for load shedding communications
- May 2022: NERC Summer Reliability Assessment
  - High level of media interest in Indiana
    - Developed DEI MISO key messages – including what MISO is and why it’s important for DEI
    - Developed templates for news releases, customer emails, CCO talking points etc.
    - Created LAM scripts for voluntary energy conservation
    - Created automated outage alerts for customers during load shedding event
  - Peaked media interest in the Carolinas

# Corporate Communications

- June 13-16: DEC Yellow Hands Off
  - Updated and distributed internal energy conservation appeal to Carolinas teammates
  - Received media calls – reporters asked if we have “sufficient resources”
  - Set summer peak usage record on June 13
- July 5: DEOK and DEI Yellow Hands Off
- August 28: DEP Orange
- August 29-31: DEC Yellow Hands Off – moving to Orange on Aug. 29 (potential red for Aug. 30)
  - Internal energy conservation appeal to Carolinas teammates
  - Updated messages for appeal that removed the “extreme weather” content – reference demand
  - Received approximately 145 social media comments on DEP Energy Wise Program
  - Prepared all messages for Red and Purple status – including news release, social media assets, customer messages, etc.
- September 12: DEC Yellow Hands Off
- September 19: DEC Yellow Hands Off – potential to move to Orange on Sept. 20 (remained Yellow Hands Off)



# Corporate Communications

- Winter Preparedness
  - Reviewed Corporate Communications training
  - Reviewed Public Messages
    - Updated messages with revised language
    - Developed templates
    - Updated key messages and talking points
    - Fully trained corporate communications team
    - Prepared to active the JIC/JIS
- Developing messaging for potential Black Start event

# Corporate Communications Message Updates



DUKE ENERGY.

**ALERT:  
OUTAGES  
POSSIBLE**

Record cold is driving energy demand to critical levels. Help conserve electricity and avoid rolling blackouts.

[LEARN HOW](#)

This graphic features a low-angle shot of a high-voltage electrical transmission tower against a clear blue sky. The tower's lattice structure is prominent, and power lines extend from it. The bottom of the image shows a blurred, light-colored ground surface, possibly snow or a road.



DUKE ENERGY.

**EMERGENCY  
POWER  
OUTAGES**

Record cold has pushed energy demand above available supplies. Please power down nonessentials.

[GET DETAILS](#)

This graphic is similar to the one on the left, featuring a low-angle shot of a high-voltage electrical transmission tower against a clear blue sky. The tower's lattice structure is prominent, and power lines extend from it. The bottom of the image shows a blurred, light-colored ground surface, possibly snow or a road.

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