




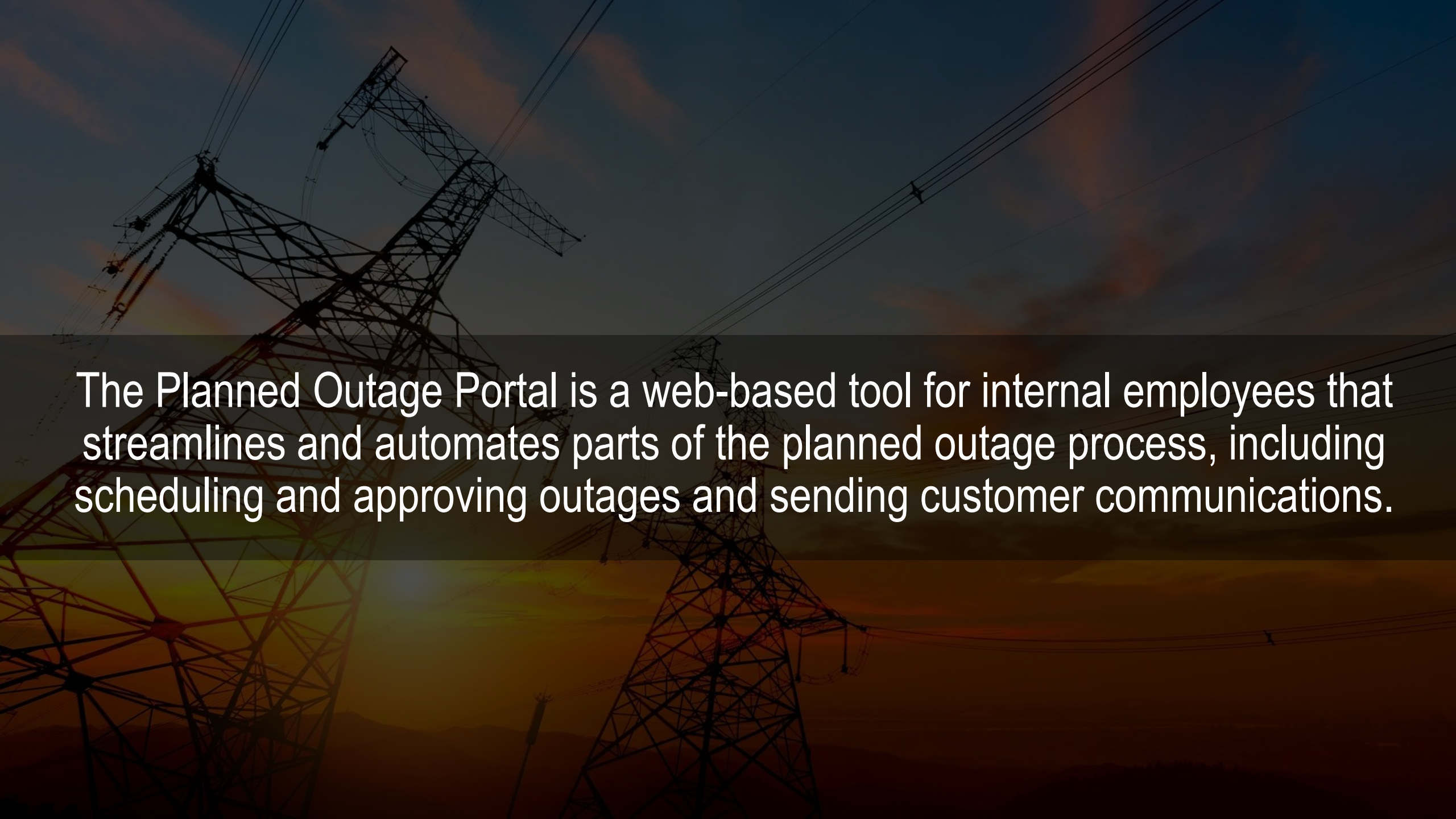
# Duke Energy's Planned Outage Portal Streamlines the Service Outage Planning Process



**Brad Cone**  
Sr. Product Owner,  
Duke Energy

A utility worker wearing a white hard hat and a high-visibility safety vest is positioned in a white bucket truck. The worker is looking towards a large metal lattice tower structure. The scene is set outdoors with many trees, some of which are bare and some have green leaves. The sky is a clear, light blue. The bucket truck's arm is extended from the bottom right towards the center of the frame.

**DUKE ENERGY**  
PLANNED OUTAGE PORTAL

The background of the image shows several high-voltage power transmission towers (pylons) silhouetted against a sky with a warm, orange and yellow glow, suggesting a sunset or sunrise. The towers are made of a complex lattice of metal beams. Power lines stretch across the sky from the towers. A semi-transparent dark horizontal band is overlaid across the middle of the image, containing the text.

The Planned Outage Portal is a web-based tool for internal employees that streamlines and automates parts of the planned outage process, including scheduling and approving outages and sending customer communications.

# AGENDA

- Identifying the Need
- Starting the Work
- The Journey to Build the Planned Outage Portal
- Designing the new Experience: Demo
- Customer Communication
- Fast Facts
- Up Next



# The Old Way of Doing Things

*The vision for the Planned Outage Portal was borne from a disparate and manual process that varied depending on which state requested the planned outage.*

## FROM

- Customers notified **in different ways** and sometimes not at all
- **Generic** alerts for the type of outage and do not specify if planned
- **Highly manual** process for requesting and approving outages
- **Error – prone process** that differs by state
- **Long lead time** to get outage approved, scheduled, and communications out to customers
- **Limited visibility** internally around outages
- **Several steps** in approval process that take hours, sometimes days, to complete
- **Multiple systems** used for each step in the process

## TO



### CENTRALIZED ONE-STOP SHOP

Create a simple, standardized tool for requesting, approving and scheduling communications



### SIMPLIFIED PROCESSES

Automate existing processes to increase efficiency for Duke Energy and improve customer sentiment



### STANDARDIZED MESSAGING

Send timely and templated communications to customers in their preferred channel, specifying details of the planned outage

**DEP Outage Call Entry Contingency Form**

Account Number: \_\_\_\_\_ Service Address: \_\_\_\_\_

Call Back Phone Number: \_\_\_\_\_ City: \_\_\_\_\_

Date Outage Reported: \_\_\_\_\_ State: \_\_\_\_\_

Time Outage Reported: \_\_\_\_\_ Zip: \_\_\_\_\_

*\*If address is NOT found in CIM BUI, ask the caller for the nearest address.*

Select Outage Type:  
 Complete/Partial     911 Dispatcher(Fire/Police)     Flickering/Voltage     Extreme Urgency/Life Threatening

Outage Notifications:  
 Text     Phone Call     Do Not Notify

Requested By: \_\_\_\_\_

Phone # to receive Text or Call: \_\_\_\_\_ Latest Call/Text Back Time: \_\_\_\_\_

Operational Outages and BPOs

SharePoint Sites

Version History    Alert Me  
 Shared With    Workflow history  
 Edit Item    Delete Item  
 Manage    Actions

Documents	Title	Category
Shared Documents	Durham Emergency Outage	Special Event
Job Aides & Guidelines for this site	Jurisdiction	DEC (West)
Site Administration	Location	Durham, NC
Archived Planned Outage Calendar 2009-2012	Start Time	6/25/2022 14:00
	End Time	6/26/2022 4:00
Site Pages	Description	844 CUSTOMERS AFFECTED DUE TO A VEHICULAR INCIDENT IN THE DURHAM, NC AREA. THIS OUTAGE BEGAN 2PM ON 6/25 AND WILL BE COMPLETED BY 4AM ON 6/26. THE CUSTOMERS BEGAN TO BE NOTIFIED OF THIS OUTAGE AT 7:11PM ON 6/25/2022. THE CUSTOMER LIST AND EMAIL ARE ATTACHED.
Lists		
Scheduled Outages & Special Events Calendar		
Tasks	All Day Event	
Archived 2013 Special Events Calendar	Recurrence	
Current Events- DEC & DEP	Workspace	
Discussions	Link to Doc	
Team Discussion	run workflow	
Sites	Attachments	Ashe St Sw Sta 1201 Durham Emergency Outage.xlsx Call List and Script Ashe St. - Durham Emergency Outage 6-25-2022.msg
People and Groups		
Recent	Content Type: Event	
Archive 2021 Planned Outages	Created at 6/25/2022 19:39 by Bohmann, Michelle Curry	
Archive-2017-2018 Planned Outages_Special Events	Last modified at 6/25/2022 19:39 by Bohmann, Michelle Curry	
Archive-2019 Planned Outages_Special Events		
Archive-2020 Planned Outages_Special Events		

ONE

channel (voice) used to communicate with customers around planned outages

FIVE

separate tools and locations used to retrieve, upload and communicate information between approvers and requesters

FORTY - FIVE

minutes (sometimes over the span of days), on average, to submit and approve an outage

ZERO

visibility into all of the planned outages occurring for a given state at one time

DOZENS

of emails, chats, phone calls and conversations to schedule one planned outage

## BUSINESS CASE

2020

Duke Energy finalized the business case to build the Planned Outage Portal in house.

## PLANNING & DESIGN

2021

Over the course of the year, we strove to understand current pain points, user needs and the best way to create the Planned Outage Portal.

## BUILD, ITERATE AND LAUNCH

2022

Began to build and iterate on the designs of Planned Outage Portal, soliciting frequent feedback from leadership and users. Launched with an extended pilot in Florida before continuing in other states over the course of one quarter. Collected feedback and implemented enhancements, most notably improving map performance.



### Planned Outage Portal

Florida Scaled Rollout Update

Thank you for your continued patience as we've worked to incorporate your feedback and adjust the timing of the Planned Outage Portal rollout. We have completed feedback sessions with all Florida users this week and **have decided to continue testing and enhancing the tool based on your suggestions through late-March.**

Based on your feedback, we are working on the following enhancements prior to rollout:

- **Permissions** – Providing everyone with access to the map feature (we know that many have difficulty accessing it)
- **Outage Naming** - Allow requesters and super-users to name planned outages before submitting for approval (to match CDO naming conventions)
- **Field Contact** - Ability to add 'field contact' to the outage request
- **Reminder Notification** - Add a 24-hour reminder notification for requesters / approvers when request is submitted
- **Outage Impact** - Display the area (polygon) for the impacted outage on the map

**To provide additional feedback around your current process, please take a few minutes to fill out this survey.**

#### What's Next?

Please continue to use the testing link for the planned outage portal. We will send another communication once the map permissions are fixed.

**QA Link:** <https://pop-web-qa.duke-energy.app/>

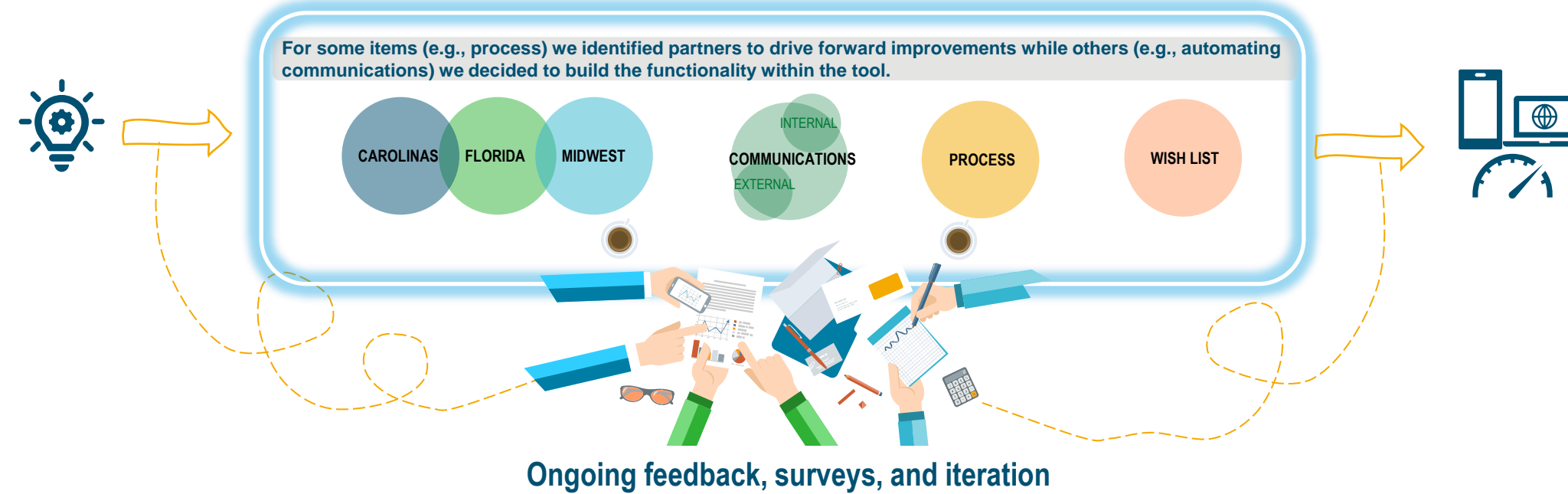
As a reminder, in the test environment:

You Can	You Cannot
<ul style="list-style-type: none"><li>▪ Search by Device ID</li><li>▪ Search on Map</li><li>▪ Go through steps of requesting outage</li><li>▪ View / export customer list</li><li>▪ View and filter all planned outages on dashboard – some are test planned outages</li><li>▪ Request, approve, cancel, and reschedule outages</li></ul>	<ul style="list-style-type: none"><li>▪ Schedule a real planned outage (coming soon)</li><li>▪ Send communications</li><li>▪ Generate an email to the approver / requester</li><li>▪ Break anything 😊</li></ul>

*One of several pilot launch communications for Florida*

# Communication and Pain Point Analysis

Over the course of several months, we launched into a pain point analysis around communications and process, understanding jurisdictional differences, and wish list items that users would want represented in the tool.



## FOCUS GROUPS AND INTERVIEWS

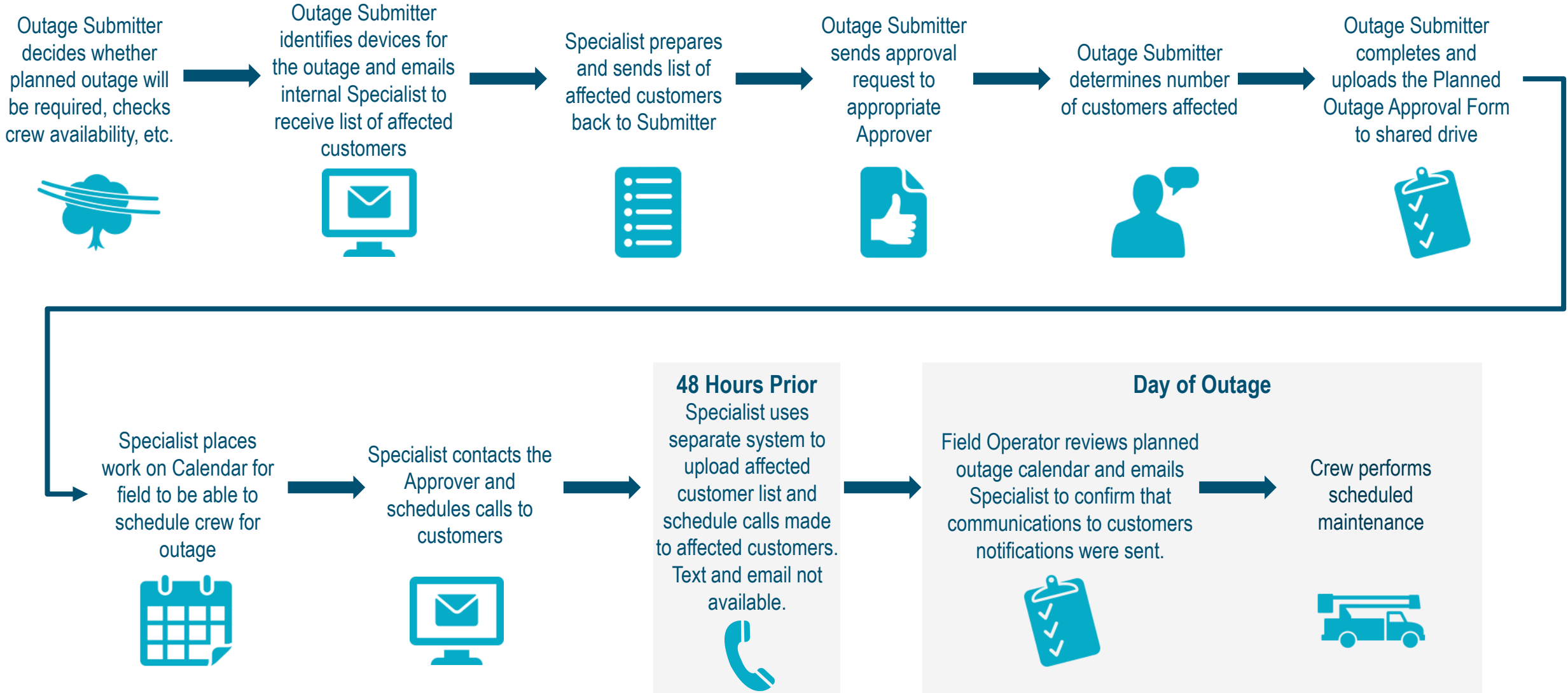
We gathered individuals involved with planned outages at all points in the process and sought to understand their biggest pain points and wish list items.

## PROCESS REVIEW AND ROLE IDENTIFICATION

Ensuring that the process and the planned outage tool we were building aligned and created a symbiotic approach to how we handled planned outages.



# Planned Outage Process – Before the Tool



# Building the planned outage portal was made possible by:



## CREATING AN IN-HOUSE SOLUTION

Building this tool internally allowed for customization and added operational efficiencies.



## BUILDING IN THE CLOUD

Utilizing Amazon Web Services (AWS) allowed us to produce a faster, more reliable product.



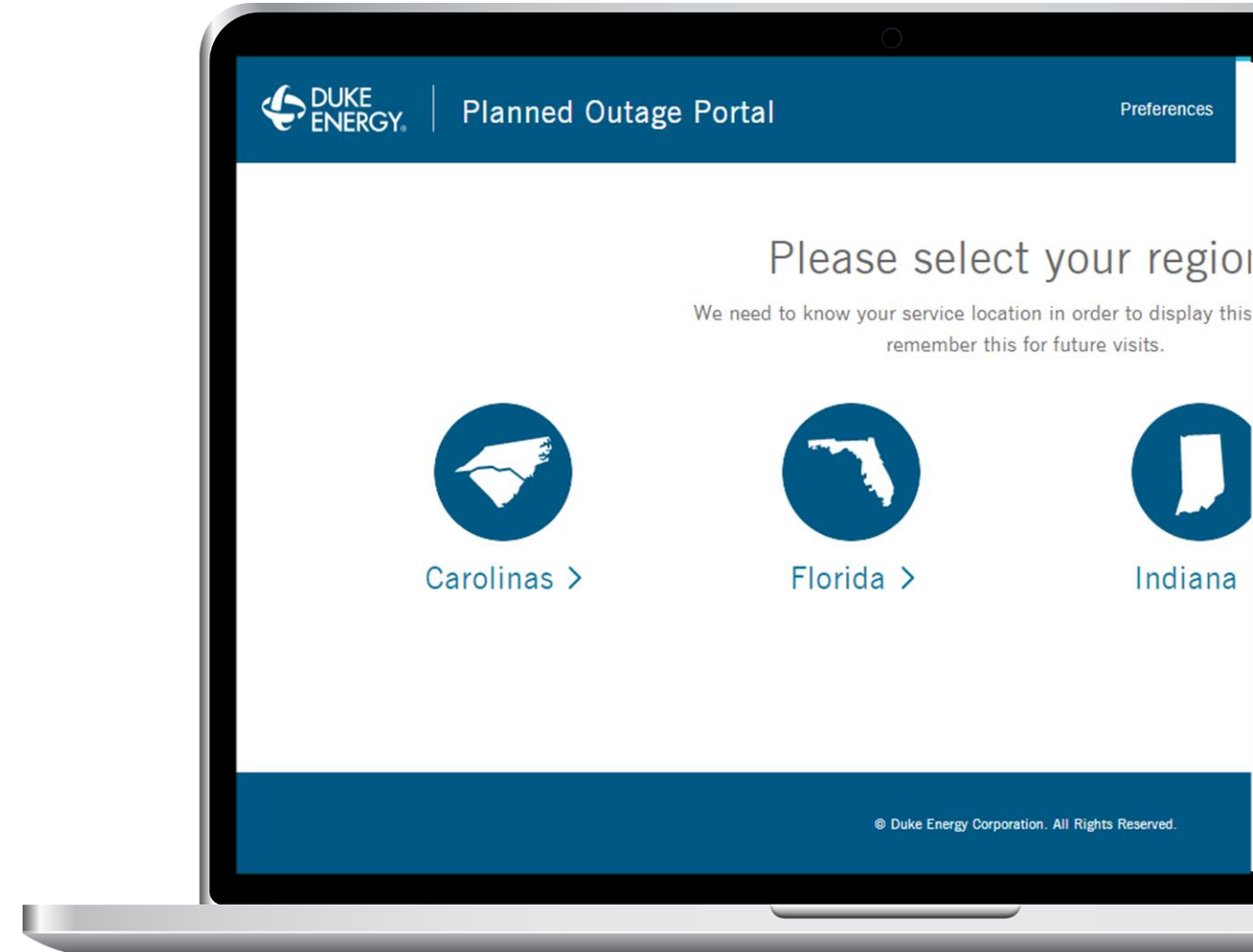
## HAVING A DEDICATED DURABLE TEAM

An agile development team allowed for real-time improvements based on feedback.

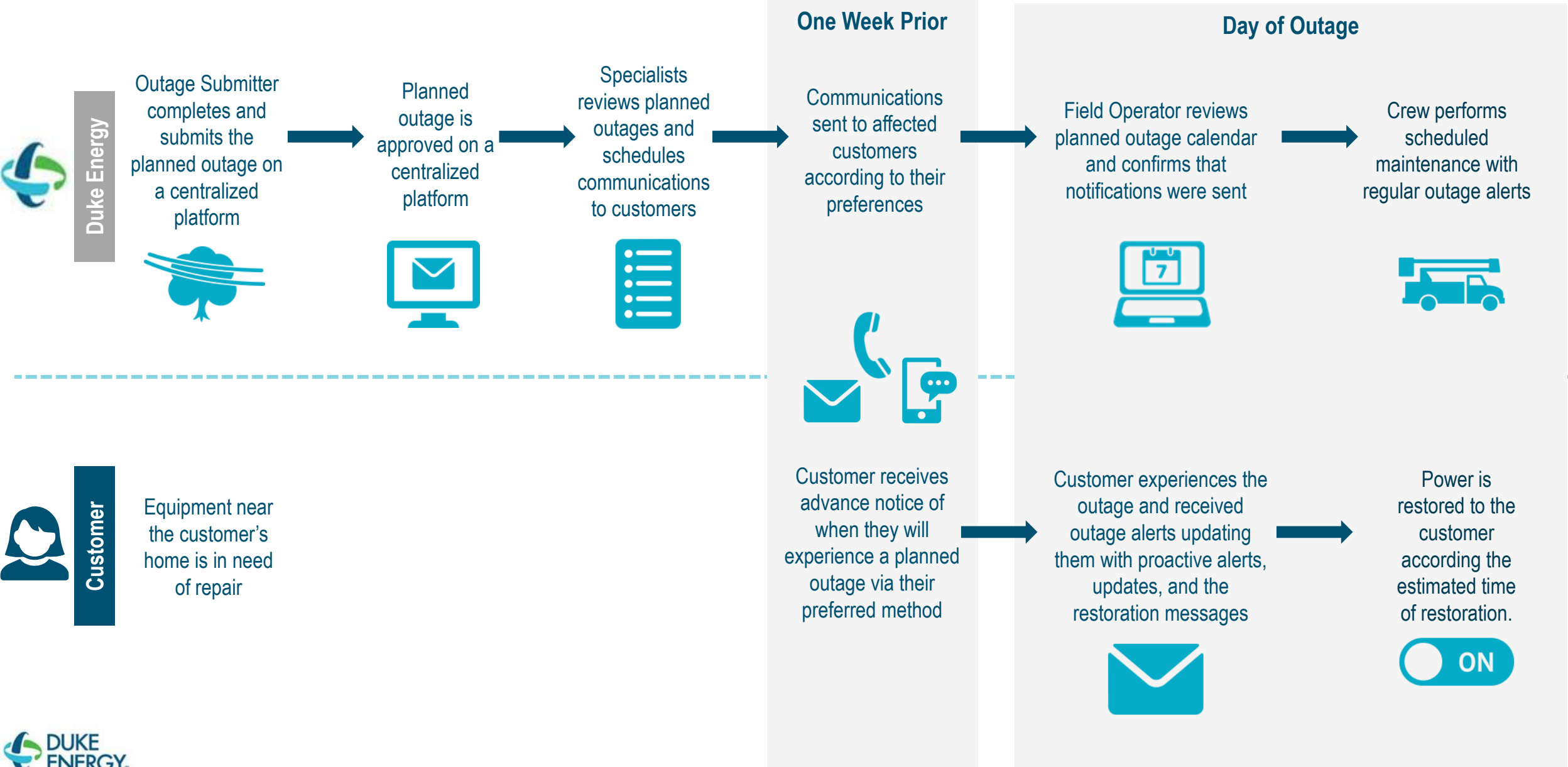


## LEVERAGING INNOVATIVE TECHNOLOGY

Serverless technologies and enterprise application programming interfaces (API's) allowed for real-time data and customer updates and to match customer data with devices used in the field for the first time ever.



# Planned Outage Process – with the tool





**FOUR**

channels used to communicate with customers around planned outages

**ONE**

streamlined tool to request and approve outages as well as schedule communications

**FIVE**

minutes, on average, to submit and approve an outage

**ENTERPRISE**

visibility into all planned outages occurring for at one time

**TWO**

automatically generated emails – one to the approver and one to the requester once approved

Pending Requests								
Request ID	Outage Name	CMI	Requestor	Approver(s)	Date & Time	Duration	Zone	
<a href="#">4124</a>	Robbinsville 1204	292,140			02/13/2023 8:00 AM	9h	MOUNTAINS	<a href="#">Review Request</a>
<a href="#">4092</a>	5682 Boomer Rd	12,720			02/13/2023 9:00 AM	4h	OH/KY NORTH	<a href="#">Review Request</a>
<a href="#">4106</a>	44816935-1	180			02/14/2023 9:00 AM	1h	TRIANGLE NORTH	<a href="#">Review Request</a>
<a href="#">4107</a>	44816935-1	120			02/14/2023 9:00 AM	1h	TRIANGLE NORTH	<a href="#">Review Request</a>
<a href="#">4109</a>	44816935-1	3,120			02/14/2023 9:00 AM	1h	TRIANGLE NORTH	<a href="#">Review Request</a>
<a href="#">4110</a>	44816935-1	180			02/14/2023 9:00 AM	1h	TRIANGLE NORTH	<a href="#">Review Request</a>
<a href="#">4118</a>	WO# 46525928	5,580			02/14/2023 9:00 AM	3h	SOUTH COASTAL	<a href="#">Review Request</a>
<a href="#">4111</a>	44815745-3	960			02/14/2023 11:00 AM	1h	TRIANGLE NORTH	<a href="#">Review Request</a>
<a href="#">4112</a>	44815745-3	960			02/14/2023	1h	TRIANGLE	

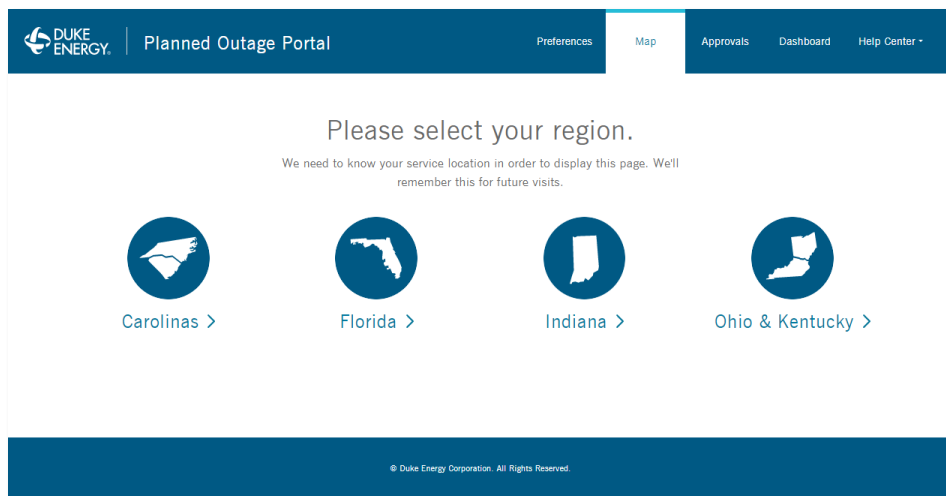
# Planned Outage Roles

*There are four primary roles we defined and assigned for the Planned Outage Portal:*

- 1 Outage Requester:** Coordinates and gathers information ahead of the outage to ensure crew availability, device location and that outage is necessary. Submits necessary details for outage request.
- 2 Outage Approver:** Reviews outage request for accuracy, impact and business necessity.
- 3 Specialist:** Supports requesters and approvers where needed and schedules proactive communications to go out to customers. Specialists also cancel and re-schedule outages when applicable.
- 4 Operations:** Require a view of all planned outages for their area to ensure proper scheduling and coordination of crews, equipment and use of resources.

## SEAMLESS END TO END EXPERIENCE

To deliver on an experience focused on our customer, we started with simplifying how our employees put in a planned outage request. By navigating to a simple site, we created an intuitive design intended to take the guess work and frustration out of the mix.



Using a familiar interface, similar to popular web-based maps, outage requesters may initiate a search and select the specific device(s) that is impacted by the planned outage to proceed through the request flow.

Unique icons are utilized to easily represent device types for the outage requester along with an impact area polygon view to assist with the planning of the request.



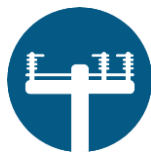
fuse



circuit breaker



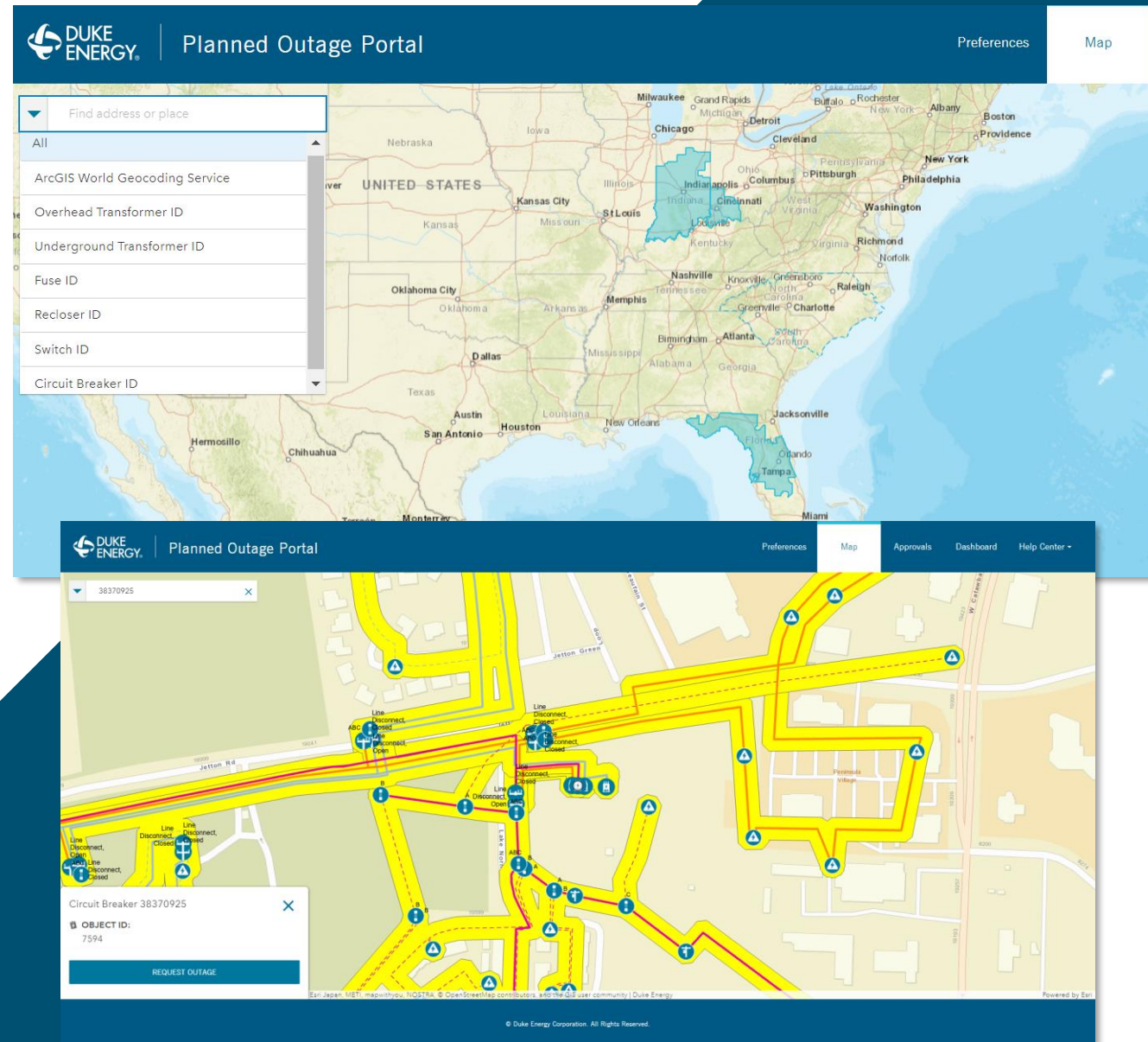
overhead transformer



switch



underground transformer



After a requester selects the device impacted by the planned outage, they can:

- View impacted customer list and count
- Understand if any customers are businesses, critical care facilities (e.g., nursing homes), government entities, or other important information
- Select date, time and duration of the outage
- Review the customers minutes interrupted (CMI) for outage

Select Date    Outage Details    Contact    Review

Select the time and date below for your planned outage.

930  
Customers Affected

[View Customer List](#)

[Export Customer List](#)

Select Outage Date and Time  
01/31/2023 12:00 AM

Initial Proposal Duration  
1 hour, 15 minutes

Hours    —    01    +

Minutes    —    15    +

Customer Minutes of Interruption (Auto Generated)  
69,750

CONTINUE



Requesters can provide additional information around the reason for the outage and comments for the approver or specialist when reviewing the request.

The requester's information is automatically populated into the next step where they can select a primary and optional secondary approver. The list of approvers are managed by a security group which was identified at the start of the project and is easily amended.

Select Date    **Outage Details**    Contact    Review

Anything else we should know?

Reason for Outage

Planned Outage Name

Additional comments

Comments cannot exceed 250 characters. 0 / 250

Field Contact Name

Field Contact Phone Number

PREVIOUS    CONTINUE

[Cancel](#)

Select Date    **Contact**    Review

Contact and approver information.

**Requestor's Contact Information**

Requestor Name  
Brad Cone

Requestor Email  
Brad.Cone@duke-energy.com

**Approver**

Select an Approver

**Additional Approver (Optional)**

Select an Approver

PREVIOUS    CONTINUE

[Cancel](#)

The requester then reviews a summary of their request, with the option to edit, before submitting the request for approval.

Upon submission, the assigned approver(s) will receive a system generated e-mail notification of an outage that requires their review. The link will direct them to the 'dashboard' to review the outage details.

('Reminder, Planned Outage ID 294 Review Required')

POP\_AWS  
To Cone, Brad  
Retention Policy inbox (90 days)



1:12 PM

Expires 4/18/2023

A Planned Outage is Pending your Approval. Please visit the Planned Outage Portal to [view](#). Region: DEC  
Zone: CENTRAL Op\_Center: MOORESVILLE Requested\_Device\_Id: 41087404 Estimated\_Duration: 1  
Initial\_Scheduled\_Dt: 2023-01-31 00:00:00

Anyone at Duke Energy can view the Dashboard of planned outages. This calendar view is used to assist the operations team with a quick view of daily, weekly and monthly activity.

Note: Certain details of the planned outages are restricted to specific security groups (e.g., transmission information).

The dashboard view, in addition to the calendar, also includes details around the outage request which can be filtered.

### Planned Outage Requests

MY OUTAGES | ALL OUTAGES | HISTORY

Q Search By Account #, Device ID, Request ID

Filter

Jurisdiction: DEP

Outage Scheduled Date: [Calendar Icon]

Zone: [Dropdown]

Status: [Dropdown]

Operation Center: [Dropdown]

CLEAR FILTERS

Request ID	Outage Name	Status	CMI	Requestor	Approver(s)	Date & Time	Duration	Zone	Comms Date
<a href="#">3771</a>	42857200	<span style="color: orange;">⊙</span> Pending Approval	6,480	[Blurred]	[Blurred]	01/23/2023 8:00 AM	9h	TRIANGLE NORTH	-
<a href="#">3770</a>	SCOTTS HILL CHURCH	<span style="color: green;">✔</span> Approved	63,720	[Blurred]	[Blurred]	01/31/2023 1:00 PM	6h	COASTAL	<a href="#">Schedule</a>
<a href="#">3758</a>	39208983-3								
<a href="#">3748</a>	316 E Boardwalk								

< May 23, 2023 >

- ⊙ Pending Approval
- ✔ Approved
- 📅 Communications Scheduled
- 📧 Communications Sent

Tuesday

all-day

10am	Morehe - 4289, 41845	Zebulon - 41845	Zebulon - 41845	Goldsb - 43234	Wilmin - 42881	Wilmin - 42906	Wilmin - 42906	Marion - 38483	Wilmin - 65135	Wilmin - 41782	Wilmin - 41783	Wilmin - 41789	Raleigh - 43537	Greenw - 38656	Raleigh - 41850	Hender - 3867	Clemso - 38802	Little R - 40556	Little R - 40556	9:30 - 10:00 - 38526	10:00 - 11:30 - 38526
11am	11:00 - Hender																				
12pm																					
1pm	12:30 - 1:00 - Clemso - 38802	12:30 - 1:30 - Hender	1:00 - 5:00 - Raleigh	1:00 - 4:00 - Greenw																	
2pm																					
3pm	2:30 - 4:00 - Clemso - 38610	2:30 - 4:00 - Clemso - 38610																			
4pm																					
5pm																					

Once the outage is approved, specialists can go into the Planned Outage Portal to schedule a date and time for automated communications to go out to impacted customers.

If the outage is cancelled, specialists can easily re-schedule or cancel the outage which will trigger automated communications to go out to customers notifying them of the change.

### Schedule Communications

The communication will be sent to all affected customers

Reason for Outage  
Grid Improvements

---

Select Communications Date and Time

---

[SUBMIT](#)

[Cancel](#)

### Schedule Communications

The communication will be sent to all affected customers

Reason for Outage  
Grid Improvements

---

Reason for Scheduled Change ▼

---

New Event Scheduled Date and Time  
01/18/2023 9:00 AM 📅

---

New Duration  
2 hours

Hours	—	02	+
Minutes	—	00	+

---

New Event Communications Date and Time  
01/16/2023 9:00 AM 📅

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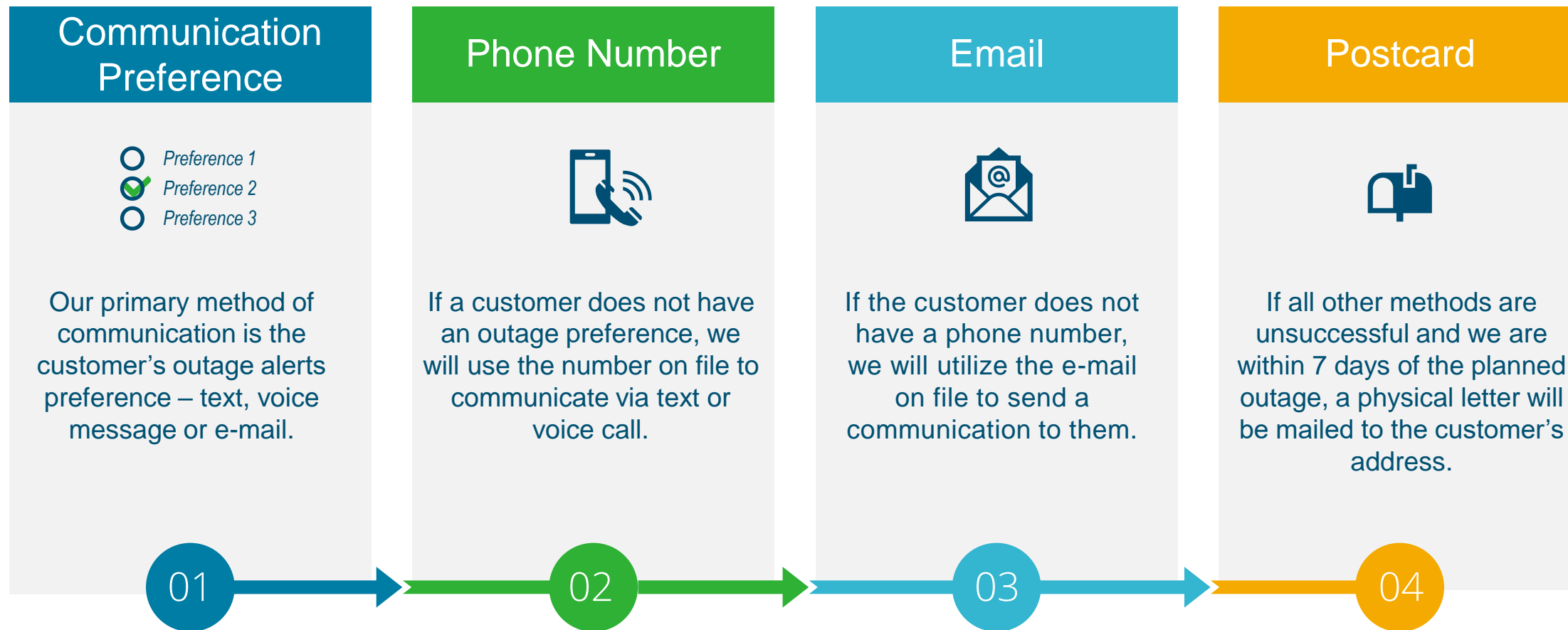
Comments

Comments can not exceed 250 characters. 0 / 250

[SUBMIT](#)

# Communicating with the Customer

When scheduling a planned outage, we will attempt to contact the customer using the sequence of methods below, defaulting to their outage communication preference and using a physical postcard as our fallback option if other methods fail.



# CUSTOMER COMMUNICATIONS

Customers receive messages via text, e-mail, voice call or postcard at least 48 hours in advance of the planned outage (unless it is an emergent issue). The messages we send relate to:

- **Equipment Failure**
- **Grid Improvements**
- **Vegetation Management**
- **Emergent Issues**
- **General Cancelations**
- **General Cancellation and Reschedule**
- **Weather Related Cancellation & Reschedule**

Duke Energy: Equipment improvements will be made on Feb 24. Service will be interrupted to 123 Main\*\* for approx 5 hours at 8 AM. We apologize for the inconvenience. If we are unable to complete the work, you will be notified. Learn more about planned maintenance at <http://duk.us/27>. Text STOP to cancel alerts.

Duke Energy: A temporary interruption to electric service is needed for your area & is expected to affect 123 Main\*\*. Crews will make repairs to damaged equipment & estimate the interruption to last approx 6 hours, beginning at 10 AM. We apologize for the inconvenience. Text STOP to cancel planned maintenance alerts.

Duke Energy: You were notified that service in your area was scheduled to be temporarily interrupted. Due to unforeseen circumstances, the planned outage is now cancelled. We will inform you in advance if the work is rescheduled. We apologize for any inconvenience this adjustment may cause. Text STOP to cancel alerts.

Duke Energy: You were notified that electric service in your area would be temporarily interrupted on Aug 12. Due to unfavorable weather, the planned outage was rescheduled to occur on Aug 18 at 11 AM lasting approximately 6 hours. We apologize for the inconvenience. Text STOP to cancel planned maintenance alerts.

Once communications are sent to customers, the dashboard will automatically update with the status of the communication and e-mail or phone number to which the notification was delivered.

< Back Export

### Affected Customers List

Transformer ID	Account Number	Name	Phone Number	Email	Address	City	State	Zip Code	Account Conditions	Notification Status
437358118						SEMINOLE	FL	33772	-	SMS-
437357488						SEMINOLE	FL	33772	-	Failure
437358118						SEMINOLE	FL	33772	-	Sms-
437290008						LARGO	FL	33772	-	Email-

Another feature of the portal is the ability for anyone at Duke Energy to go in and set a preference to be notified about approved outages in a specific state, zone or operations center.

### Notification Preferences

Enroll to receive notifications via email regarding outage requests in your area.

[ENROLL](#)

DUKE ENERGY | Planned Outage Portal

### Notification Preferences

Select the Jurisdiction, Zone, and Op Centers that you would like to get notifications for below.

#### Select a Jurisdiction

You can only select one (1) Jurisdiction at a time.

- Duke Energy Carolinas (DEC)
- Duke Energy Progress (DEP)
- Florida
- Ohio & Kentucky
- Indiana

#### Select Zone(s)

- Central
- Mountains
- PeeDee
- Triad
- Triangle North
- Upstate

#### Select Operation Center(s)

<input type="checkbox"/> Mountains	<input type="checkbox"/> PeeDee
<input type="checkbox"/> Spindale	<input type="checkbox"/> Lancaster
<input type="checkbox"/> Shelby	<input type="checkbox"/> Fort Mill
<input type="checkbox"/> Marion	<input type="checkbox"/> York
<input type="checkbox"/> Hickory	<input type="checkbox"/> HARTSVILLE
<input type="checkbox"/> ASHEVILLE	<input type="checkbox"/> KINGSTREE
<input type="checkbox"/> HAYWOOD	<input type="checkbox"/> SUMTER
<input type="checkbox"/> SPRUCE PINE	<input type="checkbox"/> Chester
<input type="checkbox"/> Cherokee	
<input type="checkbox"/> Franklin	
<input type="checkbox"/> Hendersonville	
<input type="checkbox"/> Robbinsville	





The Planned Outage Portal was designed to not only be an intuitive and optimized submission flow for the requester but to also create transparency for our customers.

### **CONTACT CENTER RECORDS**

A call center specialist will soon be able to see if a customer received a communication about a planned outage within the account notes.



### **AUTOMATED COMMUNICATIONS**

The Planned Outage Portal automatically triggers communications to go out to the customer ahead of the planned outage.

### **PREFERRED CHANNEL**

Customers receive communications in their preferred channel rather than just via a voice call.

### **SEAMLESS CUSTOMER DATA**

For the first time at Duke Energy, we are able to associate a customer data set with a device within seconds, pulling complete and robust customer records.

### **BUILT IN CUSTOMER MINUTES INTERRUPTED (CMI) CALCULATOR**

Visibility into the customer minutes interruption can allow us to reduce cost of total outage events and minimize total impact to customers when we schedule a planned outage event.

# The Rollout

*It took several months to implement the Planned Outage Portal to over 2,000 users.*



## FEEDBACK LOOPS

Kept in frequent contact with our users, constantly asking and incorporating feedback.



## TRAINING AND COMMUNICATIONS

- Dedicated overview sessions and weekly support sessions for questions
- Built a site with FAQs, recordings of sessions and helpful documentation
- Set up mailbox that was monitored daily



## SPONSORSHIP AND LEADERSHIP ALIGNMENT

Asked leaders to help roll the tool out and reinforce adoption

**Outage Super User Matrix**

**ACTION**

- Edit Selected Device
- Edit Scheduled Outage Date
- Edit Survey
- Edit Reason for Outage
- Edit Approver for Outage
- Edit Date of Scheduled Commencement
- Cancel Outage
- Reschedule Outage

**Planned Outage Portal - Usage and Feedback Survey**

54 Responses | 13:46 Average time to complete | Active Status

**Top POP Feedback Shared**

Since April, we have opened feedback channels via e-mail, meetings with super users, individual troubleshooting meetings, updates in key stakeholder meetings and via outage tickets.

**Contractor access**

Contractors with a NAM ID can now access POP via their Citrix portal.

**Weekly POP Updates**

- POP Weekly Update 11/04/22.pdf
- POP Weekly Update 10/03/22.pdf
- POP Weekly Update 10/01/22.pdf
- POP Weekly Update 09/14/22.pdf

**Planned Outage Portal**

**Training Recordings**

- Reggie / Approver Training May 25, 2020
- Reggie / Approver Training May 18, 2020
- Wah / Super User Training May 16, 2020

**Resources**

- SAG Planned Outage Portal
- Planned Outage Portal Training PPT

**75%**

of employees say that the Planned Outage Portal has made the process slightly or significantly better than before.

**TOP 3**

categories employees have cited that the planned outage portal has improved: ability to send communications to customers, request process is much faster, and everything is in one place.

**6**

states served with updated devices that can pull back customer lists within seconds.

**3,500**

unique requests for planned outages have been submitted since launching the planned outage portal.

**>400k**

communications sent to customers in 2022:

32k voice calls  
85k emails  
283k text messages

**40**

less minutes to complete a request and approval of a planned outage end to end (from 45 minutes down to 5).

# What are customers saying?

THREE-DAY NOTICE. ACTUAL OUTAGE CLOSELY MATCHED THE PLANNED TIME THAT WAS COMMUNICATED. EMAIL CONFIRMATION WAS SENT WHEN POWER WAS RESTORED. GOOD JOB!

LOVED THE NOTICE AND EXPLANATION OF OUTAGE!

RECEIVED PROMPT COMMUNICATION INCLUDING SOME EXPLANATION OF THE REASON FOR THE OUTAGE AND ESTIMATE OF OUTAGE LENGTH.

IT WAS PLANNED IN THE MOST CONVENIENT TIME OF THE NIGHT. EVERYONE WAS ASLEEP. THE TEMPERATURE HAD COOLED SO AC WAS NOT NEEDED. GREAT PLANNING ON YOUR GUYS' PART. AND THE REPAIR OR FIX DID NOT TAKE LONG. WAS QUICKER THAN WAS EXPECTED.

THE NOTIFICATION EMAILS ABOUT THE OUTAGE WERE CLEAR AND INFORMATIVE. I KNOW THAT THERE IS NO 'IDEAL' TIME FOR A PLANNED OUTAGE BUT AS I WORK FROM HOME THIS WAS IMPACTFUL.

# Up Next

The possibilities for this are endless...

- Scheduling customers in impacted zone for more targeted outage, minimizing CMI
- Targeting multiple devices above transformers
- Leveraging backbone of application to send communications by device for other initiatives
- Automating data offered by POP for other enterprise initiatives (e.g., equipment inspections / drone flights)
- Continued iteration based on feedback

# QUESTIONS?

*PowerUp* @ Chartwell's  
**OutageConference**

*PowerUp*

 Chartwell's

OutageConference