

Speeding up Response and Providing an Equitable Automated Callout System

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Agenda

About Lakeland Electric

Evaluate need for automated callout

Build business case for automated callout

Lakeland Electric's solution

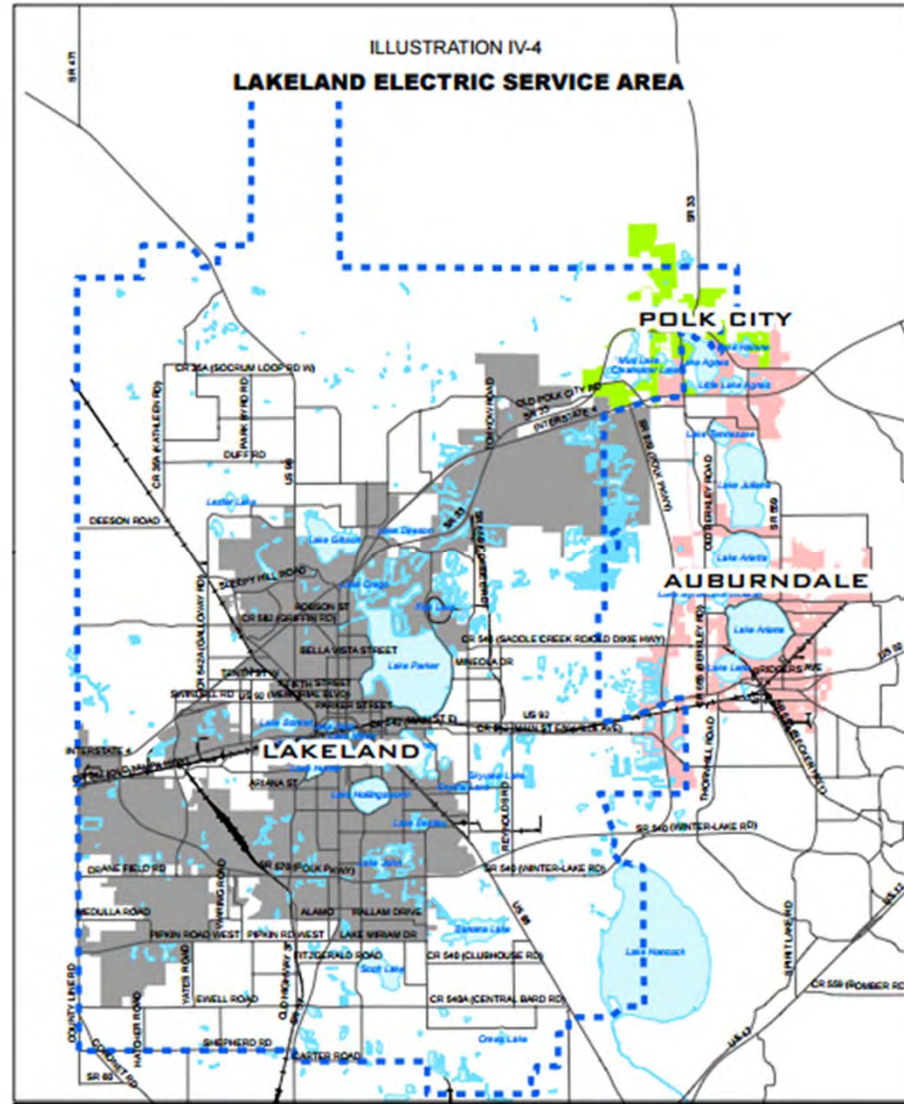
Lakeland's Quantify benefits and results

About



- Third largest public power utility in Florida
- >1,000 MW of generation capacity from two plants and one 50 MW peaking station.
- Approx. 550 employees, including 280 UWUA Local 604 employees
- 120,000 elec. accounts, 83% residential

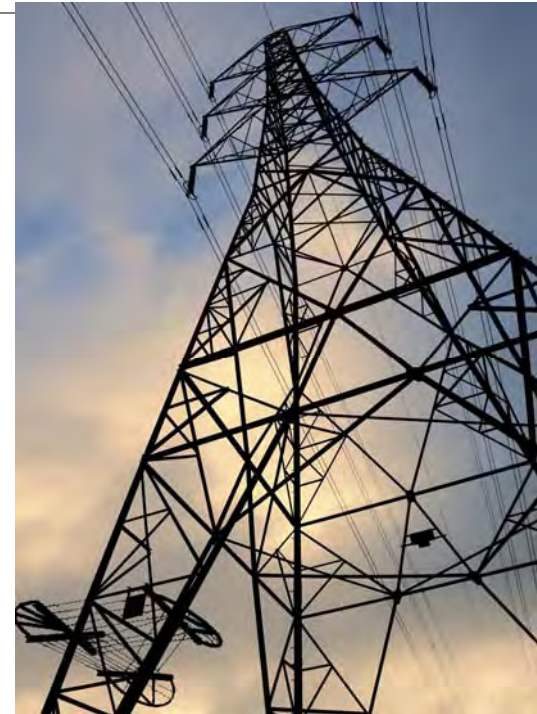
Lakeland Electric Service Area



Daily Operations

20 line crews, along w/ service and lighting crews

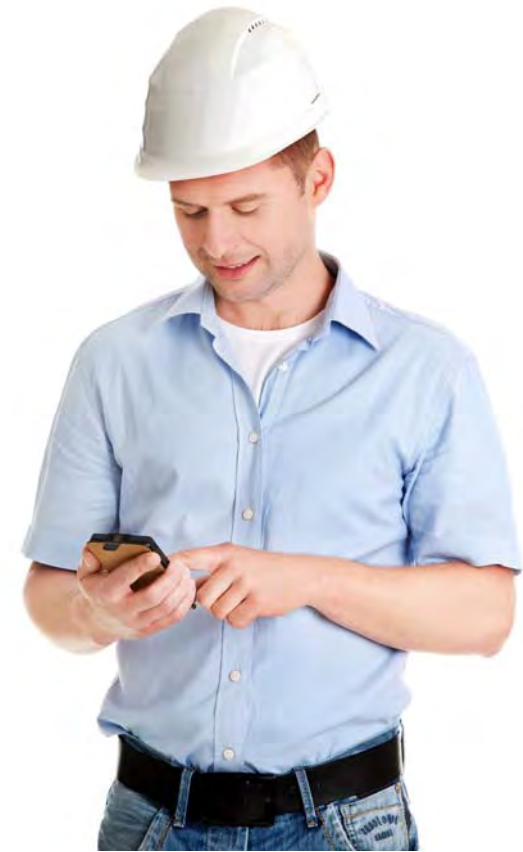
- After-hours field coverage is one-man trouble crew
- After-hours = w/e, holidays and M-F: 1530 – 0700
- Crews segregated by type of work and equipment



Callout

“An order to report for emergency or special work at an unusual time or place.”

Source: Institute of Electrical and Electronics Engineers



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Challenges w/ Manual Callout

Callout triggers	Consequence
Power failure, system control operators research what happened	Manually dial resources to restore power
Trees fall on series of poles, leaking transformer	Operator must find personnel to clear trees, another call to Apparatus Shop to clean oil
Additional crews beyond electric needed	Call supervisor overseeing external contractors, supervisor begins call tree

Unplanned events = 45 min. to 1 hr. managing callout

Business Challenge

- 1) Manual callout robbed time from System Operators and Supervisors for critical planning, preparation and managing power restoration.
- 2) As linemen waited for crew-building to happen, manual callout: delayed response and restoration up to an hour or more, racked up O/T pay and affected, in part, CAIDI.

Evaluating Manual Callout



Manual dialing

- Callouts take up to 1 hr./event
- Small callouts take up to 30 min./event



Supervisor time is valuable

- Callout response low



Delays restoration, updating OMS

Conclusions about Manual Callout

Inefficiencies

- Response required system operator or supervisors' time
- Operators kept multiple lists, b/c supervisors had diff. callout strategies
- Slow acceptance rates

Grievances

- Inconsistent process
- Clerical errors when tracking

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AREAS OF OPERATIONAL IMPACT FOR UTILITIES

Work Load Management

What would a 10% crew productivity improvement mean?

ARCOS achieves these improvements through: More work completed/week with the same available resources

- Right Sizing Crews for available work
- Right Sizing Jobs and Distribution of Assignments
- Efficiency through visibility to common assignments

Direct Labor Costs Reduction

- **What would reduction in Overtime of 20% mean?**
- **ARCOS reduces OT through:** Awareness & Visibility to resources and schedule in real-time Reduces Overtime
 - Schedule awareness Maximum Hours & Number of hours worked
 - Manage resource allocation based on Rate, Time worked, & Qualification
 - Eliminate over assigning resources

Operational Savings

- **What would Supervisors in the field vs. in the office mean?**
- **ARCOS reduces time & associated costs through:** Supervisors and Planning spend less time managing morning shuffle for available resources and assets
 - Who is and is not available eliminating hours of gathering information
 - Visibility to best available resources and required assets
 - Supervisors spend more time in the field improving efficiency and safety

Operational Process Improvement

- **What would an overall improvement in efficiency across all regions mean?**
- **ARCOS enables operational improvement through:** Identifying the best practices and most efficient resources
 - Identifying most common work & best practices across all regions
 - Leverage most efficient/safest practices for training and onboarding
 - Standardize crew/team makeup for most efficient utilization
 - Improvement CAIDI, SAIDI, & SAIFI

Building the Business Case

Typically, 492 callouts made per year

Supervisor costs for manual callout (avg. time spent: 1 hr.)

- Assume \$60/hr. loaded cost for supervisor
- Assume 1.35 callouts/24 hrs./yr. (based on real data)
- \$81/day
- Total \$29,565/yr.

Crew costs for “wait time”

- 4-person crew waits 60 min. in 50% of manual callouts
- 492 callouts x 50% = 246 callouts
- Assume \$45/hr. per lineman
- Overtime = \$67.50/hr. per lineman
- 4-person crew = \$270/hr.
- Total \$66,420/yr.

What value are we getting for \$95,985 per year?



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Defining the Solution

Callout solution must:

- Adhere to union rules, be configurable
- Reduce callout effort for system operators & supervisors, free them for value-added work
- Improve consistency
- Track & analyze data
- Eliminate or reduce grievances
- Be easy to use and supported by vendor

Decision: Automate callout

Selecting an Automated Solution

Chose ARCOS automated callout system because ...

- Offered speed, reliability & compliance
- Included automated callout, employee scheduling & list management
- Provided hosted solution accessible via the internet



Automated Callout by the Numbers at Lakeland Electric

Year	No. of callouts	Avg. per month	Employees required	Employees filled	Calls made by ARCOS to fill req'mnts
2013	465	38.75	1205	1145	6093
2014	500	41.67	1297	1242	7453
2015	512	42.67	1353	1262	6983
2016*	482	48.20	1281	1229	6957

*As of October 24, 2016

Callout Detail Report

CalloutID: 63861

Type: Normal

Reason: N/A

Location: Energy Delivery

Desc: pull light pole at 9123 Samaritan Av

WorkStart: 10/22/2016 17:06 ET

Owner: Thomas, Matthew B.

Env: PROD

Subcallouts (CO IDS)

CoIDClass	#Req	#Filled	Status	Loc
66356	Lineman Apprentice	1 1	Done	Energy Delivery
66357	Lineman-4	1 0	Running	Energy Delivery

Accepts

Name	Loc	Class	CoID
Hendrick, Steven A.	Energy Delivery	Lineman Apprentice	66356

Alert Reason: Status change for cold: 66356

Callout Recap Report

Selected Range: Oct 21, 2016 15:30:00 - Oct 24, 2016 05:30:13

Callouts to Selected Rosters

Callout ID	Type	Eff. Date/Time *	Department	Additional Info	Co Id	Class / WG / Query	#Req	#Filled	Accepted	Work Start	Work End
63859	Normal	10/22/2016 11:47:00	Energy Delivery	Locate for water dept at 3033 Craftsman park Dr Creator: Thomas, Matthew B.	66354	Locator	1	1	Hansen, Eric L. (011554)	10/22/2016 12:05	10/22/2016 13:46
63861	Normal	10/22/2016 17:06:00	Energy Delivery	pull light pole at 9123 Samaritan Av Creator: Thomas, Matthew B.	66356	Lineman Apprentice	1	1	Hendrick, Steven A. (021809)	10/22/2016 17:08	10/22/2016 18:52
					66357	Lineman-4	1	1	Redfern, Matt (016872)	10/22/2016 17:30	10/23/2016 17:53

Roster Members on Exception as of: Oct 24, 2016 05:30:13

Name	VRU ID	Department	Status	Comment	Start	End
Allen, Cody	020349	Energy Delivery	Vacation	Changed status.	10/21/2016 16:58	**
Allen, Roman	018303	Energy Delivery	Vacation	Changed status.	10/21/2016 19:54	**
Allred, Allen	019000	Energy Delivery	Vacation	Changed status.	10/19/2016 16:11	**
Anderson, Robert L.	021892	Energy Delivery	Vacation	Changed status.	10/20/2016 17:04	**

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Quantifiable Benefits

Manual Callout	Automated Callout
60 min./callout (avg.)	1 min./callout
\$60/hr. = cost supervisor	\$60/hr. = cost supervisor
1.35 callouts per 24-hr. shift per yrs.	1.35 callouts per 24-hr. shift per year
+\$29,565/yr <u>+\$66,420*/yr</u> =\$95,585	\$33,809/year
+\$ 81.00/day <u>+\$182.97*/day</u> =\$262.97/day	\$92.62/day
	ARCOS system paid for itself in less than 18 mos.

* Crew wait time while filling crew callout

Results

Tangible	Before	After
Duration/callout	≥ 45 minutes	≤ 1 minute
Callout grievances	Multiple	None
Consistency	None	Always
Accountability	Sporadic	100%

Add'l Benefits of Automated Callout

Intrinsic value

- Consistent
- Accountable
- Measurable
- Reduced or eliminated grievances

Supervisors and System Operators can ...

- Focus on operations during outages
- Look into what line crews need in advance
- Improve safety culture w/ more time in field

Return on Investment

Annual Cost

- \$95,585:
Manual
- \$65,000:
ARCOS

Annual Savings

- \$30,585

Lessons Learned

Create Change-Management Plan

- Involve union leadership from beginning
- Train supervisors & system operators at rollout
- Educate the linemen
- Ask for vendor support on launch day

