

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for recovery of costs associated)
with named tropical systems during the 2015,)
2016, and 2017 hurricane seasons and)
replenishment of storm reserve subject to)
final true-up, Tampa Electric Company.)

DOCKET NO. 20170271-EI
FILED: MARCH 4, 2019

TAMPA ELECTRIC COMPANY'S
ANSWERS TO SEVENTH SET OF INTERROGATORIES (NOS. 85 - 109)
OF
OFFICE OF PUBLIC COUNSEL

Tampa Electric files this its Answers to Interrogatories (Nos. 85 - 109) propounded and served on February 15, 2019 by the Office of Public Counsel.

TAMPA ELECTRIC COMPANY
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INDEX TO OPC'S SEVENTH SET OF INTERROGATORIES (NOS. 85 – 109)

<u>Number</u>	<u>Witness</u>	<u>Subject</u>	<u>Bates Stamped Page</u>
85	Young	Refer to testimony of Gerard Chasse at page 6, lines 1-4. Please provide a detailed explanation whether in achieving the objective of Tampa Electric's Disaster Preparedness and Recovery Plan to safely, efficiently and effectively restore power to customers as quickly as practical during and following a severe weather event, the Company will ignore assessment of costs or will the Company attempt to minimize costs through efficient planning and coordination with outside resources utilized as part of the restoration process.	1
86	Young	Refer to testimony of Gerard Chasse at page 10, lines 9-12. Does the annual updating of the plan include provision for contracting with outside resources as to their availability to respond during a storm event? If so, provide a list of contractors who were under contract prior to Hurricane Irma and whose services were utilized during the restoration process for Hurricane Irma.	3
87	Young	Refer to testimony of Gerard Chasse at page 11, lines 19-24. Please provide a listing of the 298 suggestions that have been implemented.	4
88	Young	Refer to testimony of Gerard Chasse at page 15, lines 21-25 and page 16. Please explain how many days prior to the anticipated storm impact the first task is implemented and how it is determined when this task will be performed?	24
89	Chronister	Refer to testimony of Jeffrey Chronister at page 17, lines 3-23. The testimony indicates plant is debited based on the actual costs. Please explain in detail how the Company tracks labor and contract labor during the storm restoration associated with capital work so that it is able to record the actual cost of labor and contract labor for capital work. If not actually tracked, please explain how the labor and contract labor is classified as actual cost.	25
90	Chronister	Refer to the response to OPC Interrogatory No. 64 in set 3. Please provide the number of hours that resulted in each storms capitalized labor amount and contractor labor amount (i.e. there is no quantity listed). If there are other costs included in the capitalized labor and contractor amount, please identify the other cost and the amount of that cost for each respective storm. If the labor and contractor amount was calculated using a formula, please	26

		provide for each storm the calculation for that amount.	
91	Chronister	Refer to testimony of Jeffrey Chronister at page 18, lines 3-25. Please explain how the capitalized amount of \$38.9 million was calculated and whether the calculation is consistent with the methodology used in Hurricane Irma.	27
92	Chronister	Refer to the response to OPC Interrogatory No. 64 in set 3. Please provide an updated response for Hurricane Irma such that the total matches the \$8.737 million in Revised Exhibit No.__(JSC-1) Document 1.	28
93	Young	Refer to testimony of S. Beth Young at page 13, lines 14-21. Please identify what cost category on Revised Exhibit No.__(JSC-1) Document 2 the \$3,956,147 is included in. If more than 1 category provide a summary by category.	29
94	Young	Refer to testimony of S. Beth Young at pages 13-40. Please provide a summary listing of foreign crews that were under contract for 2017 restoration prior to the 2017 hurricane season. The list should identify the contractor and the contract period. If none were under contract, please provide an explanation as to why TECO does not proactively contract for emergency situations such as hurricanes, tornados and wind/rain storms.	30
95	Young	Refer to testimony of S. Beth Young at page 28, lines 18-21. Please provide a list of contractors that specified a minimum number of hours, what those hours were, and whether the minimum applied to mobilization/demobilization and standby time.	32
96	Young	Refer to testimony of S. Beth Young, Revised Exhibit No.__(SEY 1), Document 2. Please provide a listing of contractors that provided damage assessors and if those contractors also provided line crews for restoration please indicate so next to the contractor's name.	33
97	Djak	Refer to testimony of Sarah L. Djak at page 16, lines 6-10. Did the Company apply any guideline or hard rule as to what number of hours were reasonable to travel the 500 miles? If so, what was the number of hours and please explain how that number was determined to be reasonable? If not, how did the Company determine the travel time billed was reasonable?	34

98	Djak	14. Refer to testimony of Sarah L. Djak at page 26, lines 1-23. Were contracts and rate sheets or Master Service Agreements included in the review binders during the review performed by TECO? If not, please explain why not and whether you agree that contracts, rate sheets and Master Serve Agreement should be included for review purposes?	35
99	Djak	Refer to testimony of Sarah L. Djak. Would you recommend a similar review be followed for future storms? If not, why not? If so, what if any changes would you recommend to the process?	36
100	Chronister	Refer to the responses to OPC Interrogatory No. 18, Interrogatory No. 21, Interrogatory No. 45 and Interrogatory No. 69. Please explain why one response (i.e. 18) states there is no regular payroll in the Company's request for recovery and the other response (i.e. 21) identifies \$1,133,450 of regular payroll is included in Hurricane Irma costs. Please explain why, if regular payroll is included as stated in Interrogatory No. 45, what TECO has relied on as justification for including that regular payroll (what is allowable under the Rule and what support exists showing the cost to be incremental) and provide supporting cost detail for those dollars included.	38
101	Chronister	Revised Exhibit No.__(JSC-1) Document 2 and Document 3. Please provide a summary of Document 3 amounts showing a breakdown of costs as listed in Document 2. (i.e. Contractor cost of \$79,168 is xx line clearing, xx contractors, etc.)	39
102	Chronister	Refer to the responses to OPC Interrogatory No. 17. Please provide an updated breakdown of Hurricane Irma labor costs that totals to the \$8.713 million shown on Revised Exhibit No.__(JSC-1) Document 2.	40
103	Chronister	Refer to the responses to OPC Interrogatory No. 19, Interrogatory No. 42 and Interrogatory No. 46. Please explain how the Company determined that the bonuses for T.S. Colin were incremental, when the response to Interrogatory No. 42 suggests that the amount of payroll charged to base O&M costs are not separable from the \$295.4 million reflected on Schedule C-35. If base O&M is separable, please provide a breakdown of the \$295.4 million between O&M, capital, other and below the line as described in the response.	41

104	Young	Refer to the response to OPC Interrogatory No. 49. Please explain what was relied on in responding to this request and why invoices would suggest crews of 4 or 5 for foreign line crews (i.e. see Bates 2-3; 3973; 3980; 4189, etc.)	42
105	Chronister	Refer to the response to OPC Interrogatory No. 60. The response only references Tampa Electric time sheets and native contractors. Please explain in detail how TECO accounts for foreign contractors performing capital work and provide a sample calculation of costs capitalized during the storm for poles and wires by foreign contractors. If foreign crew costs are not capitalized, please explain why not.	43
106	Chronister	Refer to the response to OPC Interrogatory No. 64. Please provide supporting detail for each storm that shows the number of hours the resulted in the labor dollars listed and the contractor dollars listed. Also explain whether contractor dollars include equipment costs and/or other costs charged by the contractor.	44
107	Chronister	Refer to the response to OPC Interrogatory No. 70. Please explain how the actual is recorded during the restoration process, whether special reporting is utilized, and who is responsible for reporting the labor incurred.	45
108	Chronister	Refer to the response to OPC Interrogatory No. 77. The response to part (a) explains adjustments reflected for the smaller storms. Please explain why the invoiced amounts for Irma do not appear to be adjusted in a similar manner.	46
109	Chronister	Refer to the response to OPC Interrogatory No. 58. Please provide a calculation showing how the \$168,000 adjustment for Irma was determined.	47

Jeff Chronister
Controller, Accounting

Sarah Djak
Sr. Regulatory Accounting Analyst

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85. Refer to testimony of Gerard Chasse at page 6, lines 1-4. Please provide a detailed explanation whether in achieving the objective of Tampa Electric's Disaster Preparedness and Recovery Plan to safely, efficiently and effectively restore power to customers as quickly as practical during and following a severe weather event, the Company will ignore assessment of costs or will the Company attempt to minimize costs through efficient planning and coordination with outside resources utilized as part of the restoration process.

A. Cost is as a key component of Tampa Electric's Disaster Preparedness and Recovery Plan as it relates to efficiently and effectively restoring power. Tampa Electric generally devotes significant resources to efficiently plan and coordinate with outside resources both in advance of weather events and during the restoration process. Tampa Electric subscribes to a paid weather forecasting service and monitors the National Weather Service, National Hurricane Center, NOAA's Storm Prediction Center, as well as local and national television weather forecasters. Weather data is monitored daily or more often as conditions warrant in order to provide ample advance warning of the potential for severe weather impacting Tampa Electric's service area and to facilitate efficient planning and coordination by the company in advance of any weather event.

Modeling tools and up to date weather information are used together in advance of any pending storms to estimate potential damage in terms of manhours of restoration required and number of customer outages in Tampa Electric's service territory. Several scenarios (less severe, most likely, more severe) are modeled to provide a range of outcomes. From the results of the model, and with a determination of a targeted restoration time, the number of required resources is determined. After review by Electric Delivery ("ED") management, the desired number of outside resources is determined, and designated ED personnel begin efforts to secure them.

In general, the company plans to acquire resources by calling upon native contractors with whom Tampa Electric already has contracts in effect, with other IOU electric companies through the SEE, and with other outside contractors with whom Tampa Electric has previously done business and that are found to be cost effective (considering both productivity and price). The company plans to secure resources that are closest to Tampa Electric's service territory first in order to minimize travel costs.

As noted in the revised direct testimony of Gerald R. Chasse, Hurricane Irma was a unique storm in terms of its size, strength, unpredictability, closeness in

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time to Hurricane Harvey and demand for restoration resources all across peninsular Florida. Consequently, the way in which Tampa Electric acquired restoration resources for Irma should not be viewed as typical or ordinary. All utilities in peninsular Florida felt a need to secure as many resources as possible and getting resources to promptly restore service to customers became more important than cost. Tampa Electric and other Florida IOUs quickly exhausted the resources available from the SEE and were forced to seek assistance from other mutual aid organizations and beyond to secure resources. Through an extraordinary effort, Tampa Electric and its outside restoration crews were able to restore service within seven days to 99 percent of the 425,000 customers who experienced an outage. In addition, all of the outside resources the company called upon for assistance in this restoration effort were released to assist other utilities or return home within eight days.

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- 86.** Refer to testimony of Gerard Chasse at page 10, lines 9-12. Does the annual updating of the plan include provision for contracting with outside resources as to their availability to respond during a storm event? If so, provide a list of contractors who were under contract prior to Hurricane Irma and whose services were utilized during the restoration process for Hurricane Irma.
- A.** Yes, Tampa Electric's Disaster Preparedness and Recovery Plan discusses the Mutual Assistance process, where outside resources are secured on an at-cost basis, but does not specifically include a provision for contracting with outside resources. Contracts with outside resources are the responsibility of the Contractor Management group for native contractors and the Foreign Crew Coordination team for other, non-native contractors. Under the Plan, Contractor Management negotiates storm rates in the contracts for native contractors for weather events. The Foreign Crew Coordination attempts to acquire rate sheets, Certificates of Insurance ("COI"), determine qualifications and keep billing and contact information up to date, but as noted in the answer to Interrogatory No. 85 of this set, Hurricane Irma was unique and acquiring as many resources as quickly as possible became the company's top priority. Tampa Electric had contracts with the following companies that were utilized during Hurricane Irma: Team Fishel, Power Town Line Construction, Service Electric Company, Pike, Enercon, IJUS, LineWorks, UC Synergetic, Storm Services, Martz, United Site Services, Catering By the Family, Celebrity Catering, Johnson's catering, LATAM Catering, Lupton's Catering, Michelle Faedo's On The Go, Port-A-Pit Bar-B-Que, Tony's Ybor Restaurant & Catering, Zephyrhills Spring Water, Pepsi Cola Bottling Company, Clear Choice, Artic Ice Company and Reddylce.

Based on our experience with Irma, the company has begun the process of establishing Master Service Agreements ("MSAs") with additional contractors so Tampa Electric will have a larger pool of resources to call on if the company is faced with a storm like Hurricane Irma in the future.

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- 87.** Refer to testimony of Gerard Chasse at page 11, lines 19-24. Please provide a listing of the 298 suggestions that have been implemented.
- A.** Tampa Electric is providing the listing of the 298 suggestions that have been implemented that are referred to in the testimony of Gerard Chasse at page 11, lines 19-24 on the following pages.

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#	Function	Action Items/Lessons Learned	Action to Be Taken or Resolution
1	Substation Ops	Substation Operations is not qualified to Open Switches, had to utilize cut & clear crews	Procedures have been modified to address this concern.
2	Substation Ops	Helping with circuit patrols? What qualifications are needed to do this function?	Get with the damage assessment group to obtain or develop qualifications. Completed. Will put the duties in Substation Operations storm plan book for future reference.
3	Substation Ops	Having Substation Electricians leading foreign crews. (Observation - No action to be taken)	Worked well - incorporate into plan
4	Substation Ops	Were not sure if the RTU Energy System Electricians could lead foreign crews?	Check with the training center to see if they are on the switching list. If not, what is needed to get the training? Complete.
5	Substation Ops	Sub Ops had to manually call personnel as the reporting time after the storm had changed.	Utilize the ARCOS callout system. Currently implementing
6	Substation Ops	ABB storm restoration resources available if we needed their help.	What services does ABB provide? Currently ABB has a verbal agreement with Substation Operations for storm restoration. For a fee, ABB can secure firm resources.
7	Trans Ops	Pre-stage helicopters locally so patrols can begin as soon as storm passes	Transmission has been unable to secure agreements with Hills. Co. or various airports to allow us to prestate helicopters before a storm. Agreements are in place with vendors to be on site as soon as storm clears.
8	ED/Customer Experience	Misunderstandings between the two areas	Involve Customer Experience in pre-storm discussions. Clarify any misunderstandings prior and during restoration
9	Safety	Safety needs to be integral part of storm planning	Barrett and Lee have talked, neither are aware of any specific issues, will review plan to insure safety is prime consideration.
10	Cost Estimation Team	Set up and communicate charge numbers for people outside of ED to charge to the storm prior to the storm event (i.e. Facilities, Telecom, Customer Experience, Supply, PGS, TSI)	Responsibility will be performed before next major storm restoration begins
11	Cost Estimation Team	Create new storm O&M PMOs for those that are being used normally for stand-by time for the crews	PMOs to be created prior to next storm; will be incorporated into storm procedures
12	Cost Estimation Team	Send storm and capital charge numbers to Procurement as part of efforts to have materials charged correctly	Charge numbers will be provided by first day after storm passes going forward
13	ECC/ Distribution Ops	Establish push crew support for all cities/counties prior to storm utilizing contractors and not TEC S/R lineman	Push crews already contractors, being readdressed with City and County
14	System Service	Trouble department needs to run heavier during the night than the day to aid with restoration efforts.	System Service will adjust troubleman storm schedules to have more troubleman working late shift.
15	System Service	Assign a predetermined amount of Power Town crews to do restoration work with T-men to get shelters and lift stations (P-1 Customers) in.	Prior to the next storm event, System Service will coordinate with Resource Management to schedule these crews.
16	ECC	IT/Outage map people on site	In the past, we have just had the data team (Joe's group) on site during the storm restoration and riding out the storm. We will now plan on having someone from the web team (Sean Singletary's group) also assigned to do the same.
17	Grid Ops	Need an additional training for support engineers that rides-out storm for updating Transmission and Substation status spreadsheets. Need more focus on patrol-priority of transmission patrols.	Added language in pre-storm check list improve focus on patrol priorities.
18	Grid Ops	Need to assign Engineer to assist with Load forecasting.	Engineer will be assigned at next event. Item in pre-storm check list updated for emphasis.
19	Grid Ops	It would be helpful if the overnight Grid Ops Support personnel crew would provide and update to the relief for smooth transition.	Added checklist item to ensure transition briefings between shifts.
20	Grid Ops	Additional Engineering support for Grid Ops during & following storm	Did not fully staff overnight during first night for Irma. Will ensure full staff at next event
21	Grid Ops	Engineering support ready to monitor and recalculate ATC's	Already part of the Grid Ops checklist. Will assign task/role at next event.
22	ECC	Better training on completing spreadsheets	LaRussa to provide annual training
23	ECC	Ensure night and day shifts overlap	LaRussa to develop a storm schedule with overlap
24	ECC	Specify a person for Transmission, Distribution, Substation, Load Flows, and ATC for both day and night.	LaRussa to work with Grid Ops and System Planning to specify personnel.

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#	Function	Action Items/Lessons Learned	Action to Be Taken or Resolution
25	ECC	Storm Plan needs to be updated with these items	LaRussa to update Storm Plan
26	ECC	Trash cans in offices and conference rooms were not emptied at night	Instruct personnel to put their trash cans in the halls if sleeping in conference rooms/offices
27	Search and Rescue	Need contractor's instead of TECO S/R Lineman for cut and clear during and after storm	Already part of plan, needs to be clarified with City, County and S&R Personnel
28	System Service	DSO AVAILABILITY	EXCESSIVE WAIT TIMES FOR DSO RESPONSE. System Service will continue to work with the ETR Team to staff the process appropriately to minimize the response time. Two-man teams will continue to shoot trouble to restore as much as they can and create crew jobs for the incoming crews.
29	System Service	2 MAN TROUBLEMAN ROLE	DEFINE ROLE - This role is already established in the Storm Plan. Two-man teams will continue to shoot trouble to restore as much as they can and create crew jobs for the incoming crews.
30	Wire Down	Need dedicated lineman paired with WD teams for major storms with high WD volume	Have at least 2 dedicated lineman teams assigned to the wire down teams/ Confirm with Steve Brooks
31	Search and Rescue	Need improved bedding	Bill found new cot's instead of air mattress, all S/R ops. coordinators have link to order.
32	Search and Rescue	S/R Lineman not having adequate food for duration of duty	Currently looking at other MRE available options/ we currently have the best to offer already. S/R member will take extra snacks before reporting to their sites.
33	Search and Rescue	Two Lineman from CSA backed out last minute for S/R need to recruit new members	Sam has recruited additional S&R members
34	Search and Rescue	S/R working up to 48hrs. Is this to many hrs.?	Discussed with S&R committee and concensus was that there was some rest time in there
35	Search and Rescue	Light repairman need to remove all personal items off of truck before turning over to S/R team	Tim Bailey has addressed his lighting guys to be sure to remove all personnel items before trucks are delivered to S&R
36	Distribution Ops	System Service NOT assigning the Troublemens to Service Area as process indicates. Troublemens taking orders from System Service, causing confusion	As troubleman are available to run work through the service area they were sent there. Other troublemen were used for public safety and restoration on energized circuits as the process calls for.
37	System Service/ Distribution Ops	Troublemens on the same circuits as the Service Area crews	ECC has communicated that the Troubleman Restoration Crews will not be on the same circuits as Service Area crews. However, troubleman may still run emergency TT on the circuit.
38	ECC	Use of signs when team has visited a wire down and made safe?	New "cut and tag" process will be implemented with the Wire Down team in May. Cor Comm getting pricing/samples for the new tags and will view options with Legal and assess visibility when standing far away. Polyester material weather-proof. crews to enter standard comments in PCAD. Talking points/training for CSPs in May. Tags have been developed for use in non-hazardous situations (phone, CATV, etc.)
39	ECC	Need to review and improve wire down process. There were a lot of critical employees standing by on wire down, when there are a lot of other employees in the company without storm assignments that could be utilized	we have identified 25 workers in supply to work as wire sitters. David Ware will rent/lease vehicles for this purpose ahead of any storm. We also have the lighting contractors available if necessary.
40	Grid Ops	Need to document procedure for restoring transmission circuits for winds more than 40mph. Train and review with Grid Ops team members.	New Procedure created and approved. Located Grid Ops Sharepoint Emergency Operations Information.
41	Grid Ops	Need to update existing job-aid for purchasing emergency power with lessons learned from event during Irma.	After operational review of Polk event and discussion with Grid Ops personnel, this item determined not needed.
42	Grid Ops	Investigate possibility of combining the Substation and Transmission restoration spreadsheets. Much of the information is common to both.	Ratnasekera, Larussa, Hrabe met. Decided to not combine the spreadsheets as they serve distinct purposes. Discussino lead to improvements of the substation sheet...update column titles to improved clarity of purpose of spreadsheet.
43	Grid Ops	Improve Load Forecasting model following storm and during restoration	To be discussed during the 2018 rehearsals or mock storm exercise. Create job-aid with at least general guidelines. 4/24/18 A dedicated person and back-up has been assigned for load forecasting. This person has extensive load forecasting experience and will review the process.
44	System Service	13kV CB operations during storm - should sequence change to one shot to lockout	This will be discussed prior to each storm, however we will most likely not do this. If we did this for Irma, we would have had 514 circuits out instead of the 260. This will result in longer restoration times

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45	System Service	Tampa water treatment switchgear and generation and all lift stations	Complete. System Service will assign as needed troublemen and/or crews to specifically work on special facilities. This system worked well during Irma. We plan to expand this process if needed using PT crews.
46	System Service	Ensure all isolation points are entered into OMS to track which customers are out	Linemen have been trained to isolate on both paper and electronically. Training conducted by Michael Ritchey.
47	Search and Rescue	Update Lighting truck list before storm had mix up on truck numbers	Tim Bailey has updated the truck list numbers
48	Search and Rescue	Offer hand-held mobile radios	All S/R team members will be offered hand-held radios. Sam Nowakowski sent out notice to S/R coordinators on 4/23/2018 to confirm.
49	Distribution Ops	Concern for back-feed on circuit due to System Service performing switching, but not telling the service area or crews working on that circuit	Tags and grounds should be installed to ensure no switch can be closed on any device or section of line being worked on de-energized. Switching to restore was done on energized circuits that were under the control of SS. Locket out circuits were not switched on unless they had been turned over to SS through the ETR process. Steve Brooks has met with Safety and Training about our clearance requirements to install grounds as we have some conflicting documents they are reviewing.
50	Search and Rescue	Limited communication with DSO while S&R in field	Steve Brooks assured S/S channel 3 is monitored and strictly for S/R members during storm
51	Distribution Ops	Find a way to only create new trouble tickets on 'Hot' Circuits in CAD. Creating trouble tickets on 'locked out' circuits only created an extraordinary number of duplicate tickets that had to be field checked.	New tickets cannot only be created on "hot" circuits but tickets created on known outages group under the known outage. The process of providing cut and clear information was not followed creating duplicate work not knowing what was out.
52	System Service/ Distribution Ops	Many looped UG subdivision Customers were not restored quickly.	Review restoration process to identify switching opportunities for looped UG subdivisions. Complete. SS and the IB will consider all restoration activities to ensure quick restoration.
53	ECC	Process take too long getting a circuit re-energized after being patrolled and released. Hours, sometimes the following day	Need more resources to get the circuits released back to SS from the ETR team. Crews and DSO's both complained about the delays. This will be addressed for each storm requirements.
54	ECC	Special requests came from many sources	A Customer Experience team is working on an escalation process based on lesson's learned from Irma. Lesley Harrison is the lead and their goal is to have a formally documented process by mid April. Will incorporate into ED's Plan when available.
55	System Service	All non-System Service personnel should not be in or on dispatch floor. All issues should be directed through floor lead or emailed to night lead DSO.	Complete. Contacted Al Grinnell and Lee Collins to change Account Managers work Location during storm. Move them to ECC3. Floor plan to be updated.
56	ECC	Generator transfer at the ECC – I think we got this resolved and determined it was the right decision to swap this to the standby generator (s)	Facilities is evaluating best practices around this and will provide procedures document on this practice.
57	Search and Rescue	Sustained winds operating bucket? Is it 30, 35 or 40 mph TECO, County and City not on the same page	Need to communicate with city/county the maximum sustained winds mph for aerial device. Confirmed with Safety and Fleet that buckets are rated at 40 mph for Distribution trucks. Provided input in EOC Lessons Learned and will reiterate with City/County EOCs during 2018 storm planning.
58	Grid Ops	Sleeping materials need to be stored in another location to prevent waking sleeping ESOs behind the map board.	Need to designate sleep area for DSO/ESO's and incorporate into ECC building ICS. Meeting set for 2/1/18 to discuss alternatives. 4/23/18 sleeping materials will be moved from Grid Ops control room to location outside of Lee Collins office. ESO materials will remain.
59	Grid Ops	Need to investigate wind speed readings provide thru EMS. Values during Irma did not seem accurate.	Investigation underway. Will ask for testing and calibration. Update: All sensors cleaned and re-calibrated.
60	ECC	Need to improve Coordination with Sub Ops	LaRussa to meet with Petrus
61	System Service	The OMS Circuit Out report does not reflect the correct circuit priority number.	System Service has coordinate with Scott Remick in GIS Mapping to correct in GIS.
62	ECC	Prior to restoration, need an updated list of circuits and Customer counts	LaRussa to update list every May
63	ETR/System Service	Procedures did not include circuit lockout tag (blue tag) added to locked out circuits during full ETR mode	Update procedure and train all personnel involved

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#	Function	Action Items/Lessons Learned	Action to Be Taken or Resolution
64	ENVIRONMENTAL	DAMAGED TRANSFORMER TRACKING	AWARENESS OF TRACKING FORM All damage assessors and line crews have oil spill notification forms with them during the initial patrol. When a leaking transformer is discovered a form is to be completed and handed in with a marked up primary map. The form goes to Environmental and a unique spill number is created by Environmental. The spill number is used to track the leaking transformer from the spill site to the actual testing and disposal of the leaking equipment. These numbers are electronically generated in a SharePoint site.
65	ENVIRONMENTAL	Due diligence on incident base properties from environmental	Environmental will work with Facility Services to determine if there environmental concerns with the incident bases prior to storm season
66	Corporate Communications	Media announcement, announce to customers that TEC is performing assessment patrols of the TEC facilities and the faster they complete these assessments the sooner you will get your power restored, so if you see a TEC pickup on the streets or in your neighborhood, please do not stop these individuals to have a conversation as to when your power will be turned back on, in most cases, they do not have this information until all the assessment is complete	To be implemented next storm
67	Corporate Communications	Have several pre-staged designs for hardhat stickers and hats relating to the storm. When the storm's name is known, then a quick modification will allow the stickers and hats, etc.. to be made quickly	Hat designs are complete. We can use the Irma design with a simple name change.
68	EM/BC	Most meals consisted mainly of meat and many contained pork. This does not provide for employees who are Vegan, Vegetarian, Jewish, Muslim, and etc.	Consider including some other options. Possibly do some investigation in advance to find out at what locations these other options might be needed so maybe it doesn't have to be done everywhere.
69	Logistics	Caterers not adequate, food was late, not enough servings and not enough variety	Procedures have been modified to address this concern.
70	LOGISTICS	CATERING ISSUES - QUALITY & QUANTITY	More consistency
71	Logistics	Food, needs improvement. Especially lunch, meat was left in sun and spoiled	Procedures have been modified to address this concern.
72	Logistics	Ran short on meals a couple of times; confusion on who should be dining	Have Building Food Coordinators stand-by/monitor the food lines during breakfast/lunch/dinner to ensure appropriate personnel and count
73	Logistics	Provide/offer employees shelter that can withstand category 4 or 5 hurricane force winds for their safety.	Under consideration. Need to balance costs with benefits of implementation.
74	Logistics	Had issues securing sufficient hotel space - Duke Florida had over 500 hotels in the Westshore/TIA area that they secured via a sales center to purchase rooms	Investigate doing same, widen search for rooms
75	EM/BC	LODGING	Increased Communication
76	Logistics	Nurse or Paramedic on site at ECC for storm riders	Procedures have been modified to address this concern.
77	Logistics	A nurse at each base to address minor injuries.	Procedures have been modified to address this concern.
78	LOGISTICS	TRAFFIC CONTROL AT IB	TRAINING ON PARKING FOR FUELING
79	LOGISTICS	IB BOTTLENECK - ALL SENT TO PCS IB	OPEN ALL IB'S AT SAME TIME AND SEND DIRECTLY TO ASSIGNED IB'S
80	Logistics	10 mph signs at incident bases to control speed.	To be implemented during next storm.
81	Logistics	Fine-tune the gateway process. Continue with the gateway at Plant City and have the teams move on to the other incident bases in order to make room for other vehicles coming through. The duplication of efforts in bringing crews directly to the Incident Bases made it challenging to provide safety training and have a clear understanding of who and how many were on our system.	To include which foreign crews to send to which IB's
82	EM/BC	Using a single incident base as a processing point	Procedures have been modified to address this concern.

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83	EM/BC	Try to assign people to IBs that are closest to their homes, not 60 miles away. We had two IT people serving meals assigned to incident bases 60 miles from their homes and would pass each other on the way; we asked if they could swap; whoever was scheduling them said no. IT will be putting together a list of people who can be assigned where to try to minimize occurrences of that in the future.	Can details be provided? Who? Where? Generally try to accommodate folks.
84	Logistics	Bus drivers clocking out at incident bases	Procedures have been modified to address this concern.
85	Logistics	A minimum of 2 buses at each incident base for training.	Procedures have been modified to address this concern.
86	Logistics	Buses used for communicating the safety training worked well at the Gateway site. As the bus drivers reached their time limit, they left. This left the safety professional scrambling to provide the required training. There needs to be a scheduled change-out of the drivers to allow the buses to remain function 24/7. After that buses were either not available or scattered and caused delays in getting crews in the field.	Procedures have been modified to address this concern.
87	Logistics	Miscommunication with helicopters. A purchase order was already established and the helicopters were waiting for us to contact them. Bottleneck having to go through one individual.	Procedures have been modified to address this concern.
88	Logistics	Our contracted helicopter company sends their helicopters out of the state and out of harms way. This takes time to get them back once the storm has passed. The Sherriff's office has a storm hardened facility in which they keep their 3 helicopters. a.) Can we work out a deal to allow one of our contractors to place their helicopter in the Sherriff's facility thereby reducing the response time and improving our assessment of the transmission system? b.) Can we negotiate a deal with the Sherriff's office to utilize their helicopter for patrolling our transmission lines?	Procedures have been modified to address this concern.
89	Logistics	Some storm units overburdened while others underutilized	Folks that have a reduced role during the storm should be repurposed for roles that need help; permanent/temporary assignments
90	Logistics	Ensure all TEC/Emera employees are utilized during storm restoration	Procedures have been modified to address this concern.
91	Logistics	Can Plaza employees without storm assignment be assigned to the service area overnight to help with packing work for the crews the following day to ensure that all D.A. teams are available for damage assessment during daytime hours?	Procedures have been modified to address this concern.
92	EM/BC	Updated and current DAZ locations at city and county level	Procedures have been modified to address this concern.
93	LSU	Ensure LSU desk handle assigned function only	Ensure that each LSU desk only handles assigned responsibility. Ex: Meals not handling Fleet issue.;Laundry/Transport not handle Fleet issue result in additional un-needed
94	Logistics	Have mesh laundry bags with tagging pre-ordered or readily available to order and have delivered in time.	Laundry bags are in the Storm room in the ECC.
95	Logistics	Use Arcos crew manager model for check in, onboarding, service area assignments, and MASS processing.	Process designed and ready for implementation for next event.
96	LOGISTICS	ADDITIONAL RUNNERS W/VEHICLES PER CREW	Recruit other team members to become runners. Runners added to logistics areas. Plan to get rental vehicles for them.

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97	Logistics	Communicate schedules and schedule changes more effectively; shifts were often changed and personnel were finding out at the IBs, communicated differently than in the Logistics meetings	LSU will be opened for the same hours as an IB. ORG charts reflect logistics duties and their shift (AM/PM).
98	Logistics	Suggestion to the LSU group or incident base – some of the items I transported were bed linens for use in the housing (I am told the company purchased many of these items last minute as the need arose). What will happen to these items? Can they be stored appropriately in sealed packages to utilize for the next event as needed? They may not be available so quickly at the next event.	200 sets were kept for TECO to use in the event the need arises in the future. They are located with facilities in the Central Service Area. The rest were donated to DOMLEC after Hurricane Maria hit them.
99	EM/BC	Many people were using automatic replies to let you know they were responding to the storm and replies would be delayed. This only served to fill up inboxes. Further, some insist on using 'reply all' simply to acknowledge receipt of data, again filling up inboxes. As a result, many important emails were overlooked, resulting in 2nd and 3rd requests for information that had already been sent.	Encourage employees to use only external automatic replies (VM and email) during ICS activations and also not reply to 'ALL'. This way external folks will be informed and internal employees inboxes will not be inundated with auto replies.
100	EM/BC	The Emergency Notification phone number is toll free in the U.S. but it does not work internationally.	Provide a number for team members to use if they are out of the country when the notification goes out.
101	Corporate Logistics	CONTRACTOR BOTTLENECK	OPEN ALL IB'S AT SAME TIME AND SEND DIRECTLY TO ASSIGNED IB'S
102	Security	IB SECURITY ISSUES	BETTER SECURITY TO PREVENT WALKUPS, ETC. On 1/31/18, Stephanie Kilborn, Edwin Santiago, Wayne Henriquez and Lee Collins visited the main incident bases to determine what security arrangements would be needed (fencing, officers, etc.). This information will be added to Security's plan and implemented the next time IB's are opened.
103	Facilities	Trash piled up during the storm	Increase the frequency of trash collection and disposal to daily during storms. Discussed the increased trash pick up frequency with the janitorial company supporting each IB.
104	Facilities	Facility planning for larger than Cat 3	Future specific buildings need to have higher than Cat 3 rating. Facility Services & ED have explored options for a new ECC facility to withstand a Cat 5 storm. There is also a corporate committee with a representative from each business area to discuss future building requirements.
105	Facilities/ Environmental	Dog track building future unavailability	Dog Track building will not be used in the future due to presence of asbestos
106	ED Logistics	Utilize marker boards or large printed spreadsheets on wall at gateway, to have real time documentation of arrival of foreign crews, with time and date of arrival, incident base assignment, and updated headcount (if they brought more) Have desks that are doing check in mark up boards immediately after arrival of crews. This documents when they arrived and where they were/are assigned. (could add where they are staying i.e. hotel?)	At this time, this recommendation for documenting time of arrivals, assignments, headcount and time of dispatch is planning to be tracked with ARCOS. Real time location of crews after dispatch will also now be tracked with ARCOS.
107	ED Logistics	Gateway model	Document how the process worked for Irma for future reference. Documentation submitted to Emergency management with lessons learned and recommendations.
108	Stores	LIMITED MATERIALS NEEDED AT IB AND OPS	HIGHER QUANTITY OF STORM MATERIALS Action: Update Storm Plan/Work with Purchasing and review stock levels annually. Annually review of the "911" list (storm inventory selection). Triggered 2018 purchases.
109	Procurement	The inventory level (also used as the materials cost estimate) required for a Cat 1 or 2 storm appears to be too high	Reanalysis may need to be performed to determine appropriate level to carry in inventory - this will be performed prior to 2018 storm season
110	ED Logistics	Not enough light trucks for Sub Electricians to lead foreign crews. Had to use heavy vehicles.	Rent 10 light truck vehicles for Substation Ops prior to storm. (01/08/18 - Identify rental companies and locations) Action: Update Storm Plan/PO's in place with rental companies/Commit 10 days out

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111	Fleet	Put our LP vendor on notice before storm	Will discuss and assign. Action: S. Ferrell notified vendor. Heritage and Amerigas. VENDORS WILL BE ASKED TO BE SELF SUFFICIENT IF POSSIBLE.
112	Fleet	Need a list of employees with Hazmat endorsement	Will discuss and confirm with fleet Action: List of Hazmat Endorsement Holders generated and communicated.
113	Fleet	Educate mechanics about LSU and phone numbers needed	Will discuss and confirm with fleet. Action: 02/01/18 - Shared information with Fleet team members along with EM website.
114	Stores	Diesel Forklifts instead of gas	This item will be addressed in edits to Stores Storm Plan
115	FLEET	FUEL ISSUES	DAILY FUELING AT IB AND OPS OF GENERATORS, ETC Action: Met w/Justin Smith 3/21/18 and 4/19/18 Resolution, plan in place 5/31/18
116	FLEET	ACCESS TO MORE VEHICLES	LEASE VEHICLES PRIOR TO STORM Action: Update Storm Plan/Set up PO's with rental companies/Committ 10 days out to rent 10 vehs for Substation, 30 vehs for Line Sitters and 10 additional vehs for users. **May adjust depending nature of event.
117	Fleet	Put flags on off road vehicles (golf carts) for visibility.	Place flags on all gas powered golf carts. ADD TO STORM PLAN Action Item: Scott to provide a report listing all gas carts for IBS assignments. Flags with strobes ordered
118	Fleet	Vehicles for damage assessors and foreign crew leaders was limited. Work to have a contract to stage vehicles prior to landfall.	LEASE VEHICLES PRIOR TO STORM Action: Update Storm Plan/Set up PO's with rental companies/Committ 10 days out to rent 10 vehs for Substation, 30 vehs for Line Sitters and 10 additional vehs for users. **May adjust depending nature of event.
119	Fleet	Vehicle shortage due to pooling vehicles earlier this year, mentioned several times	LEASE VEHICLES PRIOR TO STORM Action: Update Storm Plan/Set up PO's with rental companies/Committ 10 days out to rent 10 vehs for Substation, 30 vehs for Line Sitters and 10 additional vehs for users. **May adjust depending nature of event.
120	Fleet	Fuel tank and trucking availability and environmental issues with fuel tanks	Environmental will work with Fleet to ensure the proper fuel tanks are ordered and the fuel tanks are place in the most environmentally friendly area at the incident base
121	Fleet	Availability of fuel for vehicles was an issue. Find a way to have fuel tanks installed at the staging areas and topped off prior to the storm as emergency fueling.	Environmental will work with Fleet to ensure the proper fuel tanks are ordered and the fuel tanks are place in the most environmentally friendly area at the incident base
122	Fleet	Proactively have rental vehicle/equipment needs identified for sites and LSU.	Work with LSU and Incident Sites to identify a list of vehicle/equip needs to run tasks such as laundry, pillow, sheets, cots, etc. (Install AVL devices) (01/08/18 - Plant to rent 5 vans 72 hours prior to storm landfall) Action: Update Storm Plan/Set up PO's with rental companies/Committ 10 days out to rent 10 vehs for Substation, 30 vehs for Line Sitters and 10 additional vehs for users. **May adjust depending nature of event.
123	Fleet	Set up storm support agreements with additional fuel vendors to provide tanks.	Will discuss additional vendors with Fleet team. (01/08/18 - RFP for secondary fuel vendor in preparation for storm season) Action: Met with Justin Smith 3/21/18 Met w/Justin and Palmdale 4/19/18 Resolution: New contract signed 7-6
124	Fleet	Analyze benefits of purchasing company owned fuel tanks or trucks.	Will discuss with Fleet team 01/08/18 - Purchase fuel truck in to assist with storm and emergency response Action: New fuel trailers purchased this year
125	Fleet	Track all fuel support outside of company restoration efforts. (Ex: hospitals and shelters)	Discuss with Fleet team (01/08/18 - Fleet team member will track and log all fuel activities for alternate activities) Action: Storm Assignment Adjustments is complete to have Sam available for tracking.
126	Fleet	Provide a list of Trucks/Trailers that require fueling and their location set up with perishable items. (Food and Ice Refrigerator Trucks)	Discuss with logistics (01/08/18 - Identify vendors in advance utilizing propane and where they are staged. Should be included on the area/IBS equipment listings) Action: Audrey is putting on her storm checklist
127	ED Logistics	WHA and PCA indicated there were Breaker signal issues or no indication. PCA was told that there was an RTU problem	Telecomm radio antenna alignment issue due to high winds from Irma. Antenna readjusted 9/13/17 and problem resolved
128	Stores	SALVAGE TRACKING	CREATE SALVAGE TRACKING SHEET
129	Stores	Water should not be issued by Stores	This item will be addressed in edits to Stores Storm Plan
130	Stores	Standard Issue Slip for 911	This item will be addressed in edits to Stores Storm Plan
131	Stores	Calls from LSU to one person - Admin	This item will be addressed in edits to Stores Storm Plan
132	Stores	Ensure Fax Machines available to MS's	This item will be addressed in edits to Stores Storm Plan
133	Stores	Consider costs for material disposal; identify who's going to be responsible for getting the vendors and reporting this for storm estimates	Investment Recovery will be responsible - Julie O./Rob J. This item will be addressed in edits to IR Storm Plan.

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134	Distribution Ops	The lighting group made a lot of on the fly adjustments to their damage assessment and resource allocation procedures. The people involved did an admirable job, but the effort was hurried and frantic at times, and could be more effective and efficient with better pre-planning.	<p>Include a key member of the Lighting storm coordination group in Planning team discussions, both before storm season and during storm restoration efforts in order to ensure more consistency, better planning, and cross-pollination of ideas and methods.</p> <p>(Lighting) Revise the written Lighting Storm Plan to incorporate a tiered corporate lighting restoration goal as well as additional planning and company continuity steps by 06/30/2018.</p> <p>(ED Emergency Mgmt Command Team)/(ED Emergency Management Coordinator)</p> <p>Revise the Energy Delivery Emergency Mngt Structure as follows:</p> <p>Revise TECO employee emergency assignments for identified skill sets to include an Alternate Assignment to rotate to lighting after their Primary Assignment for distribution work is deemed complete. (This is exactly how Lighting team members are assigned and deployed in the Emergency Management structure, rotating from distribution and wire down as their Primary Assignment, back to lighting, to begin their Alternate Assignment once released from their initial assignment. Attention should be given to certain roles and the burden associated so as to more evenly balance resource loading). Review primary storm roles and Identify internal resources for secondary lighting restoration roles by 07/30.</p> <p>(ED Planning Team) - Continue operation post distribution restoration in support of lighting restoration. Same roles.</p> <p>(Lighting) Include training activity for team members assigned to Alternate Assignment in lighting.</p> <p>6/18/2018 ED Emergency Management Incident Response Plan (ED Plan) has been revised with the above recommended changes, and submitted for approval by ED and CE leadership.</p>
135	Distribution Ops	Roll into lighting communications and restoration once electric service restoration is complete	<p>Discussed 10/31/17, draft rewrite of Lighting EM plan out for review.</p> <p><u>Future Action to meet a tiered lighting restoration goal dependent upon the magnitude of the storm (post distribution restoration):</u></p> <p>(Distribution/Customer Experience) - Assign team members with selected skill sets to dedicated Alternate Assignment in lighting restoration post distribution restoration. Discuss needs and identify resources with CE department by 07/30.</p> <p>6/18/2018 ED Emergency Management Incident Response Plan (ED Plan) has been revised with the above recommended changes, and submitted for approval by ED and CE leadership.</p>
136	Lighting	Treat lighting restoration as part of storm activities?	<p>Discussed 10/31/17, draft rewrite of Lighting EM plan out for review. NOTE: Only a partial ICS will need to remain in place once electrical restoration is complete to support lighting restoration.</p> <p><u>Future Action to meet a tiered lighting restoration goal dependent upon the magnitude of the storm (post distribution restoration):</u></p> <p>(Lighting) Revise the written Lighting Storm Plan to incorporate a tiered corporate lighting restoration goal as well as additional planning and company continuity steps by 06/30/2018. A more robust planning related to material and resources should be incorporated.</p> <p>(ED Planning Team) - Continue operation post distribution restoration in support of lighting restoration. Same roles.</p> <p>(ED Emergency Management Coordinator) - Identify team members and make Alternate Assignments to lighting work, post distribution restoration.</p> <p>(Lighting) Include training activity for team members assigned to Alternate Assignment in lighting.</p> <p>6/18/2018 ED Emergency Management Incident Response Plan (ED Plan) has been revised with the above recommended changes, and submitted for approval by ED and CE leadership.</p>

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137	Lighting	<p>Define through the organization as to what that means</p> <ul style="list-style-type: none"> -Scheduling (How do we transition from wire down activities to lighting patrol) -Messaging (It needs to change. Something like we are done restoring power and are now focused on our other systems. This is both internal and external communication. Once power is restored the organization wants to push back to normal business and we are not ready.) -Resource allocation (How much OT and other department resources will we draw from and for how long) -Foreign Crews (we need to identify the patrollers and one man buckets to hold them over to assist lighting. Resource releasing need to be better coordinated with the organization. Goals need to be set so we know what resources we are willing to pay for.) 	<p>In the midst of IRMA storm response, upper management revised the corporate lighting restoration goal to roughly 30 calendar days, as compared to the prior goal of multiple months using only standard labor sources. This was a major mid-stream change which necessitated a process restructuring for the Lighting Storm Plan.</p> <p><u>Future Action to meet a tiered lighting restoration goal dependent upon the magnitude of the storm (post distribution restoration):</u> Revise written storm plan by 06/30/2018 Earmark ED and CE internal resources for secondary lighting restoration assignments with CE and ED leadership by 07/30.</p> <p>(TEC Emergency Command Team) Revise TEC Emergency Management Plan to assign other departments to Wire Down team responsibilities as a Primary Assignment, because Wire Down was short staffed with only Lighting repair and Meter mechanics assigned.</p> <ul style="list-style-type: none"> - possibly consider Gas employees? <p>(TEC Emergency Command Team) Revise TEC Emergency Management Plan to incorporate support of lighting restoration post distribution restoration.</p> <ul style="list-style-type: none"> - set targets for suspending lighting call taking and then restoring lighting call taking <p>(Lighting) Revise the Lighting Storm Plan to incorporate the ~ 30 day corporate lighting restoration goal.</p> <p>(Lighting/ED Emergency Coordinator) - determine if SEE will support lighting work with Foreign Crews.</p> <p>(Lighting) Revise the Lighting Storm Plan to include higher contractor counts for lighting. Identify early the need for additional crews and reach out to existing contractors to supplement existing crews with non-native contractor crews.</p> <p>(ED Emergency Mgmt Command Team) Revise the Energy Delivery Emergency Management Structure as follows: - Revise TECO employee emergency assignments for identified skill sets to include an</p>
138	Lighting	Restoration targets for Lighting	<p>(TEC Emergency Command Team) Revise TEC Emergency Management Plan to incorporate support of lighting restoration post distribution restoration.</p> <ul style="list-style-type: none"> - confirm tiered corporate lighting restoration goal. (post distribution restoration). <p>Discuss High-level tiered restoration targets with Sr. Leadership by 06/30.</p> <ul style="list-style-type: none"> - comply with designated team member assignments to new Alternate Assignments for lighting restoration, post distribution restoration. - set targets for suspending lighting call taking and then restoring lighting call taking <p>6/18/2018 ED Emergency Management Incident Response Plan (ED Plan) has been revised with the above recommended changes, and submitted for approval by ED and CE leadership.</p>
139	Lighting	<p>When do we want the lights restored?</p> <ul style="list-style-type: none"> -Do we want to make it a set target (i.e. 30 days and we will gather resources to make this target) -Do we make it effort based (after storm we work 6 10's until complete and the time to restore is relative to the damage) 	<p>In the midst of IRMA storm response, upper management revised the corporate lighting restoration goal to roughly 30 calendar days, as compared to the prior goal of multiple months using only standard labor sources. This was a major mid-stream change which necessitated a process restructuring for the Lighting Storm Plan.</p> <p>Going forward, meeting a tiered corporate lighting restoration goal. (post distribution restoration) will require support from TEC Emergency Management Command Team to staff Alternate Assignments by qualified team members for lighting restoration work post distribution restoration.</p> <p>6/18/2018 ED Emergency Management Incident Response Plan (ED Plan) has been revised with the above recommended changes, and submitted for approval by ED and CE leadership. The plan proposes a targeted restoration time frame for light restoration after an event is to have 65% of lights restored in 15 days, with 95% of lights restored within 30 days. This compared to standard light restoration metrics of: 65% of outages RTS in 5 days 85% of outages RTS in 10 days.</p>

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140	Lighting	The philosophy will need to be determined early and hopefully worked into the storm plan. Managing these processes and resources are challenging due to the fact that everyone has separate you have primary duties first. Once system is restored you then begin allocating what resources are left at your disposal, setting up processes to manage them, and then develop a plan. This is after the entire team has worked tirelessly on system restoration and fatigue has already set in. Pre-planning and clear communication of expectations are critical to have a safe and effective lighting restoration program as this stage.	Revise written storm plan by 06/30/2018 Earmark ED and CE internal resources for secondary lighting restoration assignments with CE and ED leadership by 07/30. 6/18/2018 ED Emergency Management Incident Response Plan (ED Plan) has been revised with the above recommended changes, and submitted for approval by ED and CE leadership. Lighting Department Plan will be revised to align with approved ED Plan.
141	Lightning	Be sure each Lighting tile is only assigned to one service area	A Lighting Damage Assessment "App" has been developed to be distributed to Storm Patrollers to be downloaded onto their mobile phones to capture damaged lights. The App will also be used to track Tile assignment, and develop lighting damage assessment metrics.
142	Lighting	In learning the right time and process it seems as though there are multiple "steps" to initially find the correct BA and installation location to create the ticket for the needed repair in CRM. I don't know the solution here since I am not as aware of the big picture process. I have a feeling this may get better with our coming "smart meter" upgrades if these include interaction with the lighting? A off the wall thought was - wouldn't it be nice if each pole/light had a bar code that could be scanned by the Night Patrol personnel that would immediately identify the location, BA, verify billing and create the ticket for repair all at one time? (similar to the current monthly meter	Bar coding of poles must be a TEC system wide decision. Alternatively, a Lighting Damage Assessment "App" has been developed to be distributed to Storm Patrollers to be downloaded onto their mobile phones to capture damaged lights. The App will also be used to track Tile assignment, and develop lighting damage assessment metrics. Tile maps will display GIS billed lights, which will be included in the App, and such that patrollers can utilize the map and App to select an accurate grid.
143	Distribution Ops	Lack of veg crews - did this hamper restoration	Issue across state in Irma - to be discussed at SEE meeting in November - no resolution, definitely an issue for all Florida utilities
144	Distribution Ops	TREE TRIMMING - FOREIGN RESOURCES STATED THAT BETTER TREE TRIMMING PROGRAM WOULD ELIMINATE LARGE NUMBER OF CUSTOMER OUTAGES	RETURN TO 3 YEAR TRIM CYCLE AND RE-EVALUATE THE OVERHANG POLICY. TEC is approved by the PSC to employ a 4yr cycle. Any changes would need to be evaluated by TEC Mgmt and a recommendations filed and approved by the PSC before any changes are made. R Hamric
145	Line Clearance	Why is tree trimming not trimming on day one, why are we waiting to assign them to a crew?	TEC's native tree crews were trimming on jobs through Saturday evening, sent home due to high winds and began after high winds subsided on Monday morning. All native and foreign trees crews worked until released from storm work. Additionally, tree crews cannot work around downed or unsafe lines that are not grounded.
146	Distribution Ops	Explore getting faster Internet access in FORTS. Not sure if this is possible given current technology as we were relying on the cell service at the locations.	Discussed w/ Jeff Ogden, IT looking at 'hitching posts' to provide fiber - due to uncertainty on IB sites at this time, holding off
147	Distribution Ops	Have two Forts at fairgrounds, and none at strawberry festival.	We have ordered additional FORTS - There will be enough for the larger areas to have two FORTS and the smaller out lying areas to have one each. Resolved
148	DISTRIBUTION OPS	ALL TEAMS LOCATED AT FORT OR OPS CENTER	ETR: PLANNERS, DISPATCHERS, OPS ENG; Managers discretion based upon the storm and incident base availability.
149	Distribution Ops	FORT COMMUNICATION	SPEAKER PHONE IN FORT - added to Common Requirements list
150	Distribution Ops	Equip FORTS with printers/paper	Have FORTS added to Incident Base requirements sheet w/individual needed items - added to Common Requirements list
151	Distribution Ops	Have extra power strips for FORTS	Have FORTS added to Incident Base requirements sheet w/individual needed items - added to Common Requirements list
152	Distribution Ops	Get speaker phones for FORTS	Have FORTS added to Incident Base requirements sheet w/individual needed items - added to Common Requirements list
153	Distribution Ops	Instead of strictly Cut & Clearing the first several days there should be more emphasis on the 2 man crews restoring customers to service unless the damage makes it prohibitive. 2 days had passed after the storm ended and there were very few customers restored.	The Storm Plan calls for Cut & Clear process to restore the substation breakers. This allows for work to be available for foreign crews when they arrive

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154	DISTRIBUTION OPS	RESTORATION EFFICIENCY	SAME LINEMEN ON CUT/CLEAR AS RESTORATION - Distribution Ops will try to re-assign the circuit back to the same Cut & Clear Lineman if possible. Resources may be an issue.
155	Distribution Ops	Ensure cut & clear crews are following the existing process; marking the locations of the cuts and providing them to System Restoration	Will have more training on the Cut & Clear process - Completed 4/25/18
156	Distribution Ops	Svc areas not consistently filling out Isolation Forms for all cut-and-clear circuits	More Training to cover Cut & Clear same as Line 153.
157	Distribution Ops	Who made the decision to have crews use a blue highlighter on the circuit maps to identify repaired lines, when since creation, blue highlighters have been used to identify oil spills. Very confusing...	More Training to cover Cut & Clear same as Line 153 -
158	Distribution Ops	Cut & Clear crews NOT marking maps in PCA, causing confusion	More Training to cover Cut & Clear same as Line 153
159	Distribution Ops	Marking up circuit maps by cut and clear crews most often resulted in incomplete information being shown and had to be re-done by the D/A's.	Cut and clear will not mark maps
160	Distribution Ops/ETR	Service areas using Isolation forms with incomplete data	Train service area personnel on SharePt form and enhance SharePt forms to send automatic emails when complete - More training coming by 6/15/18
161	DISTRIBUTION OPS	NOT ENOUGH MDTs FOR COMPLETING TICKETS	MORE MDTs; Reviewed and did not find an issue with the number of MDTs available.
162	DISTRIBUTION OPS	CREATING/DELETING CREW JOBS	MORE MDT TRAINING; Work with System Service to create video that walks step by step through process. Available to be reviewed as needed.
163	DISTRIBUTION OPS	PRAGMACAD - TEAM TRAINING FOR DISPATCHERS/PLANNERS AT WSA	ETRC Team Members have received Pragma Cad Training.
164	Distribution Ops	Service areas could not get trouble tickets to print at the I.B.	No problems noted at various service areas.
165	Distribution Ops	Pragma Cad not working at some areas	No problems noted at various service areas.
166	Distribution Ops	Each ETR group needs a printer that can handle multiple request quickly.	Printers will be available at the Fort or Service Area and accessible to the ETR team as needed.
167	Distribution Ops	Network issues at IB for Svc area ETR team	Utilize TECO Facilities instead of Incident Base Locations or solve network issue (this was only a isolated situation).
168	DISTRIBUTION OPS	TRAFFIC FLOW AT IB SITE - SECOND GATE INSTALLED TO INCREASE TRAFFIC FLOW AT CSX	Facility Service completed the cost estimate to widen the CSX gate which turned out to be 55k. The price is hard to justify at this time and an alternate plan was put in place. The alternate plan is for the gate to be widened during a storm activation and temporary paving would be utilized during the storm activation and the site restored after activation is completed.
169	Distribution Ops	A lot of areas felt that they area was unprepared when it came to maps, supplies, offices supplies, etc.	Each Service Area is responsible to ensure that the area has all the supplies required. Everyone needs to be aware of the location of these items.
170	Distribution Ops	Contracts with incident bases	Each Service Area Manager is responsible for making sure all Contracts are in place.
171	Distribution Ops	Evaluate IB locations for ability to be dedicated to restoration effort for duration - ESA Fairgrounds wanted us out due to a scheduled concert while restoration still in progress, caused issues. Also, did not open BUC's IB due to scheduled game.	Work with land owners to obtain dedication of property for duration of restoration effort, seek out additional/new locations where normal business operations won't cause conflict - Each Manager has worked within their Svc area to establish clear understandings with property owners.
172	Distribution Ops	Some Incident Bases do not have sufficient rooms to handle large numbers of crews (vehicles)	Relocation of Gateway to northern location will alleviate congestion at I.B.s
173	Distribution Ops	Prestaging of crews or at least a portion of the crews which includes hurricane rated hotels or facilities	Evaluation of pre-staging of crews will be determined on a case by case basis.
174	DISTRIBUTION OPS	WIRE DOWN PROCESS	Wire down process is in place with established procedures.
175	DISTRIBUTION OPS	NOT ENOUGH TECO LINEMAN	USE NATIVE RESOURCES (LINEMAN) TO LEAD FOREIGN CREWS
176	DISTRIBUTION OPS	DDT HOT STICKS TO OPEN SWITCHES	DDTs with apprentice lineman III and above classification can be used in this capacity. Otherwise, specific training would have to be implemented to enable DDTs to become qualified to open switches.
177	Distribution Ops	Observed that some foreign operations crews didn't work energized primary and made all their repairs before clearing circuit to be ready to be re-energized, causing longer than necessary outage times	Efforts will be made to provide appropriate work in order to meet the foreign resources work standards.

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178	DISTRIBUTION OPS	MANAGER IN EACH AREA	OTHER MANAGERS FROM VARIOUS DEPTS - Other Managers have been identified to help.
179	Distribution Ops/Resource Management	Have an assistant for all Incident Base Managers that could verify/audit crews & equipment that are showing up. Keep track of where they are working (who and how many). Assist with keeping track of administrative needs that are presently being done by the Manager. This will free up the Manager to concentrate of leading the restoration effort in their area.	Should Foreign Crew Liaison's be handling Foreign Crews at IB? RLC - Followup with R. Jackson after PR deployment, change in Foreign Crew Liaison's may help situation along with implementation of ARCOS Crew Manager - New Foreign Crew Coordinators have been identified and trained.
180	Distribution Ops	Crew to circuit assignments need to be submitted earlier so system operators have visibility to workers	Utilization of the ARCOS Crew Manager will enable the operators to have visibility of all crews on circuits.
181	Distribution Ops	Fully patrolled circuits on day 1 should be given to crew on day 2 to work instead of waiting	12/7 Crew assignment is based on availability and restoration of critical infrastructure. Operations and Management input determines restoration priorities.
182	Distribution Ops	Develop a better more consistent process for picking up and dropping off circuit maps	Technology will be implemented in 2020 to improve/eliminate the need to work off paper circuit maps.
183	DISTRIBUTION OPS	CIRCUITS/LINES NOT FULLY ACCESSED	POSSIBLE NIGHT PATROLS TO FIND LARGE SECTIONS OUT. 12/5 Not recommended due to safety concerns. Partial patrols along truck accessible areas will not provide full material and ETR data for the circuit. STDS
184	DISTRIBUTION OPS	ONLY ONE PERSON CAN ENTER D-280'S	1/9/18 One Inputter and 1 computer per shift. This is a DART Limitation.
185	Distribution Ops/Planning	Better coordinate crew moves between IBs.	Service Area Managers will have better communication and will include Logistics - ARCOS Crew Manager will help with this issue of moving crews.
186	Distribution Ops/ETR	Not documenting locations of crews/DAs initially caused delays/inefficiencies during restoration	Utilization of the ARCOS Crew Manager will enable the operators and others to have visibility of all crews on circuits.
187	DISTRIBUTION OPS	Need a list of schools and shelters that are priority.	PRINTING TO HAVE AVAILABLE WHEN NEEDED
188	DISTRIBUTION OPS	CIRCUIT MAPS	POSTER SIZE CIRCUIT MAPS ON COMMAND CENTER WALLS SHOWING FEEDERS/LATERALS
189	DISTRIBUTION OPS	RUNNING OUT OF ICE FOR CREWS	PUT LOCK ON ICE MACHINES to be opened by management staff.
190	DISTRIBUTION OPS	D-280 OUTDATED	12/5 Form cannot be changed due to Dart Software Limitations. STDS
191	DISTRIBUTION OPS	FOREIGN DA CONSISTENCY	CREATE VIDEO FOR DA'S TO BE VIEWED ON BUS. 12/5 This is possible. Possibly utilize annual technical training refresher for the source. There is an existing safety video and updated 2018 PowerPoint presentation with information required for DA.
192	Distribution Ops	TRIP SAVERS ON THE GROUND	ODET will be tagging tripsavers before installation going forward
193	Customer Experience	Verify field grid and locations for Key Accounts.	Account Management maintains a list of CFI 1&2 customer, plus key CFI facilities like assisted living and kidney dialysis. The grid information is pulled from GIS. Each Year, Account management refreshes the grid information from GIS. Our understanding is Energy delivery maintains the grid #'s and equipment information in GIS.
194	Customer Experience	Key account availability on site (implemented during storm and worked great)	Account Management's storm response location is ECC. Account management would like to work with Customer Experience and Energy Delivery to allow for the account managers to utilize the 3-desk work station in system service between 7am and 8pm, plus 1 seat between 7pm and 7am, if possible.
195	Customer Experience	High volume of upper level phone calls to the service areas requesting priority service to customers not on a priority customer list. Service areas felt personal influence got the best of some upper level management.	Al Grinnell's name should be replaced with "Customer Experience". Monica Whiting and Team are working to develop a process to respond to non-assigned account requests and will reply back by year end. All Assigned Accounts requests will still be managed through Grinnell's Team. Created new procedure for elevating priority status and separately, escalating calls/ process.
196	Customer Experience	Residential and small customer handling, escalation, and priority	A Customer Experience team is working on an escalation process based on lesson's learned from Irma. Lesley Harrison is the lead and their goal is to have a formally documented process by mid April. Will incorporate into ED's Plan when available.
197	Damage Assessment	When pairing up a D.A. with a foreign crew and then requiring that foreign crew to attend a 4-hour training session, can the D.A. also be assigned a tree trim crew so that they can get them started trimming trees where they know the foreign crews will be working after they complete their 4-hour training?	What 4 hr. training session for foreign crews? Tree crews cannot work around downed or unsafe lines that are not grounded. Tree crews are assigned to the area IB with TEC Arborist and can be coordinated to assist with DA's teams and begin trimming if it is safe to work. R Hamric

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198	Damage Assessment	Stage the Damage Assessors at the Strawberry Festival prior to the storms arrival. The building is CAT 5 rated. Provide immediate assessments of the system after the storm passes. Gain 1 – 2 days in assessments of our system.	Foreign DA teams will be staged locally in a facility that is rated appropriately for the expected storm. Timing will depend on the DA team source location, travel conditions and the approach speed of the storm.
199	Damage Assessment	No training provided to the foreign damage assessment teams	The Skills Training Center provides training for Foreign Damage Assessment teams as needed. The training covers TEC safety and damage reporting procedures.
200	ETR	Only 10-15% of the circuits could be assessed for damage by the time the foreign crews arrived significantly reducing the ability to use the OMS system to obtain an accurate customers out count.	Re-asses the feasibility of getting the OMS system to calculate the customers out counts. Get a lot more damage assessors and/or Streamline/ Rework this process. The process is improved greatly by giving the ability to the 2 man cut-and-clear crews to update GIS in the field which will now update OMS through a stored procedure. The Damage Assessment Unit has preselected a representative sample of circuits to be assessed that will give a more accurate feedback on damage, labor and material needs. In addition, the new plan is to attempt to have Damage Assessors on site prior to the storm.
201	Damage Assessment	Confusion as to which circuits to patrol on day 1 and day 2, priority circuits or customer count?	Circuits are to be patrolled based on their Priority rating contained in GIS, provided Cut-clear crews are not already working circuit.
202	Damage Assessment	Foreign resources not readily available following the storm	TEC will continue to assess the need and availability of resources required during each storm event.
203	Damage Assessment	D280, how important is this form when all we give to foreign damage assessors is the circuit maps?	12/7 The D280 serves as a tool to determine the system damage and materials needed and ETRs. It is needed for non-ticket storms. STDS
204	DAU	Review current voltage detectors, two people walking side by side, one might go off and the other one wouldn't.	TEC has ordered new voltage detectors (150) that will be available this storm season. This should resolve this issue.
205	Damage Assessment	Can we purchase a voltage detector that picks up low voltage, i.e. services on the ground? You have to get within about 6" of the service cable to get it to go off, if it does at all	The standards group needs to research if such tester is available; There is no such tester available that can detect both secondary and primary voltages.
206	Mapping Services/Damage Assessment	Some printers we tried to use were either not compatible with Windows 10 or incapable of printing on 11x17 paper. Plus, some folks had to scramble to find more 11x17 paper.	Identify one or more key printers and locations in each area and document them so we know what we have where that will work. Ensure that we order extra 11x17 paper before and during storm season. Resolution - there is a step in Mapping Svcs Annual Storm Plan to order more 11x17 paper at each Service Area and label them for Storm Use only. The Kyocera printers all print 11x17. If any users have an issue printing to a Kyocera then more than likely they need to have their printer drivers updated on their pc/user profile.
207	Damage Assessment	Review D.A. working hours. Seemed to be a lot of standing around waiting on crews in the morning, at least 2 hours for them to get breakfast, perform their tailboard, check their trucks for tools and equipment and then drive to the I.B. to get their work and then at the end of the day for the crews to clean up, drive back, eat dinner, etc.	D.A. teams work hours will be directed by IB commander.
208	DAU	D280 and DART is antiquated and needs to be replaced	TEC is evaluating damage assessment tool which will automate the process.
209	Damage Assessment	Emera Nova Scotia has an ESRI damage assessment tool that was used in the Grand Bahamas last year that works great. It literally only took 2 days for 2 I.T. guys from Emera to setup with the Grand Bahamas data, why can't TEC invest in this type of tool? Real time data, maps, GPS, pictures, all electronic and can be down loaded on any smart phone.	TEC is evaluating damage assessment tool which will automate the process. TEC is not a current ESRI user.
210	DAU	Rather than assigning damage assessors to a service area, why not wait and determine worst hit areas and then assign damage assessors based on need	New process will have damage assessors on predetermined circuits on day one and support line crews from day 2 until restoration is completed.

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211	Damage Assessment	<p>What do you feel the role of a damage assessor should be?</p> <ul style="list-style-type: none"> o Early – Work with Cut & Clear crews to identify locked out circuits o Mid – Team D.A. up with foreign operations crews o End – Run tickets to ensure work is complete o Lighting Damage Assessment needs to be weaved in the process and customer communication needs to go out stating that even though the “Outage Map” shows all our customers have had their power restored, there is still restoration work going on for up to one month following the storm. This way customers aren’t expected TEC to be back to normal the following day after the initial restoration. 	New process will have damage assessors on predetermined circuits on day one and support line crews from day 2 until restoration is completed.
212	Damage Assessment	<p>Patrolling circuits seems more chaotic than being assigned a substation and patrolling all circuits out of that substation. Multiple teams, foreign and operations, and cut & clear on the same circuits???</p>	New process will have damage assessors on predetermined circuits on day one and support line crews from day 2 until restoration is completed.
213	Damage Assessment	<p>Confusion regarding Locked Out circuits. Who patrols???</p>	<p>Locked out circuits were turned over each morning and evening between SS and the service areas. Who ever had control of the circuits was responsible for patrolling them. This ensured SS would not close any breakers or switches to energize a locked out circuit until the area ops engineer gave the all clear they had ALL! persons assigned to the circuit in the clear to SS ETR team, and a DSO spoke to the Crew/Lead Lineman assigned the circuit before any attempt to close a breaker.</p>
214	Damage Assessment	<p>System Service told service areas to get damage assessors off Locked Out circuits, D.A. teams reassigned to Non-Locked Out circuits</p>	<p>SS only worked locked out circuits after yards indicated all personnell were gone for the day unless working through the service area ETR team.</p>
215	Damage Assessment	<p>Did all service areas do re-patrols of their circuits?</p> <ul style="list-style-type: none"> o WHA did re-patrol due to not having enough time or resources to patrol circuits prior to Wednesday, where operation crews took over o Other service areas only did re-patrols of locked out circuits o Overall consensus is there are too many circuits and not enough resources to re-patrol ever circuit in the TEC territory and still get customers back in, in a timely manner 	<p>This is not a SS item. There were numerous outage and wire down calls that came in after SS was give a 100% complete status on circuits. We need to clarify if we are going to re-patrol all circuits after restoration. Insufficient manpower to re-patrol all circuits.</p>
216	Damage Assessment	<p>Damage Assessors were initiallly sent on non locked out circuits in order to keep them seperated from the 2-man cut-and-clear crews</p>	<p>Emphazie the need to assess damage on locked out circuit as soon as DAs are available in order to get more damage data and be able to better calculate Global ETR. Change any procedures as needed. Discuss any potential conflicts and resolve. TEC's current practice is that no DA teams are to be sent out on locked out circuits until the Cut-N-Clear teams have finished and reenergized the circuit breaker due to safety concerns.</p>
217	ETR	<p>Discovered night before the storm that the Circuit Priority List was not accurate</p>	<p>Correct any existing mistakes and ensure updates are done prior to each storm season</p>
218	Mapping Services	<p>Circuit maps on thumb drive consist of one PDF file per sheet and each circuit has multiple sheets. It's uncommon to need to only print some individual sheets. Typically the entire circuit is needed.</p>	<p>Work with IT to implement a new Batch Plot option that will enable all sheets for a given circuit to be "printed" to a single PDF file, all merged into one file. - Resolution: I.T. has a batch process that will combine all sheets to a circuit to one PDF file after the maps are printed to PDF from Batch Plot.</p>
219	Mapping Services	<p>Many sets of circuit maps that were printed for this season were not used by the groups for which they were printed: e.g. Investment Recovery, Lighting, Project Management, and Damage Assessment.</p>	<p>Check with each of these groups to determine their true map needs and print fewer sets of circuit maps, if not needed. Resolution - we have elimated the printing of one full set of maps for Project Management, and one full set for Investment Recovery and one bound set for the Damage Assessment Unit.</p>

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220	Mapping Services	Some circuits were found to be assigned to the wrong service area because the Circuit Breaker and/or Substation had the wrong area stored in the database.	Add an annual task to the Mapping Services storm plan to check the service area assignments in GIS and correct as needed.
221	Mapping Services	Some people who needed or could use the storm maps do not easy access. They do not have the flash drives.	Find one or more network drives/directories where the PDF files could be saved that would provide wide access to the maps. Resolution - have a TM in each area copy PDF files into their SHARDDATA directory (ex. \\yborfs\WESTERN\VOL1\EDWO\SHARDDATA\Drafting\WSA\Storm Maps\2018\...) This will be added to Mapping Services' Storm Plan.
222	Mapping Services	Facilities have been changed in the field as a result of restoration efforts. Changes include simply new installation dates on equipment replaced like for like, but also changes in sizes, types or ratings in some cases. This information is not captured in GIS.	Investigate possible ways to capture this information so that Mapping could possibly update GIS after restoration is complete. In Progress: Mapping Services collected the marked up maps. After reviewing the maps, there was not enough information captured to update GIS. When asked, crews have typically responded with the fact that they don't have time to update work packet maps with As-Built mark-ups. RESOLUTION: Mapping Services to coordinate with DDT Supervisors post storm restoration to perform a field check on a percentage of the assets replaced in the field to note if there are discrepancies. The % of errors noted will drive the need for further verification.
223	Mapping Services	The Critical Facilities workspace in GeoMedia was last updated prior to storm season so changes to TEC facilities and land base features were not in it when Hurricane Irma hit.	Add a task to the Mapping Services storm plan to update the workspace midway through the storm season to ensure more up to date information is available later in the season.
224	Mapping Services	Mapping team members assigned to the night shift at the ECC were not utilized much for storm related tasks.	Evaluate whether or not Mapping needs as many team members assigned to the night shift as are in the storm plan today. Consider staggering shifts and/or reducing the number of people assigned. We are in the process of implementing a new storm task related to Damage Assessment for our group that may change storm assignments and shifts. Update 7/9/2018 - Mapping Svcs will be reporting at 7pm.
225	Mapping Services	Several labor-intensive requests came to Mapping shortly before the storm. Work on these requests made it very difficult for some team members to be released early in order to make home and family preparations, or to prepare to evacuate.	Document what requests came in. Discuss these items with the requesters and determine if these requests could be fulfilled earlier in the process so they don't have to be done last minute. Consider releasing key members involved in these requests for a day up to a week early to make preparations so that they can be available the last day before the storm. RESOLUTION: When we receive unique requests prior to a storm, we are adding them to our Storm Plan so they are done pre-storm season the following year.
226	Mapping Services	Line Crews were given circuit maps for restoration and were sometimes only given one or two sheets of the circuit. Sometimes a road name did not appear on the sheets they were given, which made finding the location difficult.	Explore potential solutions, including: (1) If crews have Garmin's, POI's can be loaded. Grid numbers for Transformers, Switch numbers, and other identifiers can be searched the then help route the crew to their desination. We already have POIs and most Line Supervisors/DDTs/Crew Leads have a Garmin and should be able to lead crews to their work destination. (2) Possibly have I.T. reduce the distance between road names in GIS which will increase the number of times a name displays on a road making it more likely it will appear on each sheet. Shankar noted that this is not possible without causing too many road names to appear which would have an adverse affect on the clarity of the maps.
227	Mapping Services	Some crews and other team members asked for maps that were different than the 11x17 storm maps. Some asked for a single large sheet (D or E size) showing the entire circuit on one sheet.	Investigate what maps might be best for different uses. Consider providing PDFs to DDTs and others who may have laptops in the field to enable zooming in and out and panning around which could make it easier to read grid numbers and other labels. Resolution - have a TM in each area copy PDF files into their SHARDDATA directory (ex. \\yborfs\WESTERN\VOL1\EDWO\SHARDDATA\Drafting\WSA\Storm Maps\2018\...) This will be added to Mapping Services' Storm Plan. We have tried in the past to place a whole circuit on one plot and it isn't legible enough to capture grid number information.
228	Mapping Services	MAPPING SERVICES	GIS TECH ASSISTANCE IN ALL SERVICES Resolution - we do have someone assigned to each area but with the new plan, Mapping Svcs will be reporting at night arriving at 7pm. What may have brought this up is that we did have several employees that evacuated during IRMA and did not return to work until a few days into restoration efforts.
229	Mapping Services	MAP QUALITY	D SIZE MAPS W/11X17, Pearson can mark priority customers on a layer of storm patrol maps for patrolling Resolution - we followed up with Emergency Management (Angie Leslie and Lee Collins) and they did not want CFs to be printed on patrol maps.

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230	Mapping Services	11x17 prints are too small, can we consider a bigger print?	The print size was selected and agreed upon by DDT Supervisors and Service Area Managers. If a different print size is requested, that request or change would need to come from them. I will send an email out to all of them to see what their thoughts are on this. 11 X 17 prints will continue to be used. PDF's will also be made available to allow for different paper size.
231	Mapping Services	Can each circuit identify the "Priority" customer(s) with some type of symbol similar to medical customers and/or prove list, so D.A. ensures customer is in power?	See response of #262.
232	Mapping Services	How costly would it be to print maps in color to identify feeder from laterals?	We found that color vs b&w is 3 times as much to print from several different vendors including Document Printing here at TECO. The Feeder is not a different color from Laterals but the linestyle of a Feeder has an F along the line and this was the linestyle chosen during the migration. Color prints would not make any difference.
233	Mapping Services/Lighting	There are no existing map products that are easy to produce quickly that meet the needs of the Lighting department for damage assessment and restoration.	Working together, Mapping Services, IT, and Lighting identified the requirements/specifications for new Lighting Damage Assessment Maps, to replace the Distribution Circuit Maps previously provided to Lighting For Storm activities. The new maps will be produced out of SmartMaps out of ESRI based on the 1 mile tiles (8 maps per tile) and will include light symbols, differentiating between billed and unbilled. The maps are targeted to be produced and delivered to Lighting prior to storm season. Met 11/14/17, week of 12/11, and 4/26/18 to develop and finalize data and map content, scale, symbology and paper size.
234	Mapping Services/Lighting	Mapping and Lighting had to develop an ad hoc plan on the fly for tracking how much of the lighting system had been patrolled, what remained, how to assign the remainder, and so on.	Working together, IT and Lighting have developed the specifications for a Lighting Damage Assessment "App" to be distributed to Storm Patrollers to be downloaded onto their mobile phones to capture damaged lights. Mapping Services will produce new Lighting Damage Assessment Tile maps, and will provide metrics for billed lights per tile, and Service Area designations. The App is linked to the TECO ShareData site which will be populated with the lighting Tile map metrics, and which will be used to capture, compile and administer the patrol results, including Tile (map) assignment, % lights damaged, % lights (system) patrolled and to forecast lighting damage assessment completion. The specs and a trial App have been completed. The final App and reporting are targeted for completion 6/1, after IT completes training on the App development software at the end of May.
235	Mapping Services/Lighting	The lack of complete and accurate data for Lighting in GIS hampered the abilities to produce needed patrol maps and good methods for assigning and tracking areas or circuits to patrol.	A new mobile App has been developed to track Tile maps assignment and produce lighting damage assessment metrics. The App is targeted for completion 6/1, following IT completing training. The GIS lighting data is affected by all GIS designers. The recently approved LED Conversion project includes a complete lighting system field audit, which will entail updating the GIS lighting features with accurate/complete information. Estimated completion by EOY 2020. Targeted Lighting Storm Maps displaying all light locations have been designed and will replace the the generic Distribution Circuit Maps previously provided to Lighting for Storm activities.
236	Forensic Data Collection	Participate in a Mock Storm exercise with Forensics contributors in 2018 and verify personnel and contact info.	Will have a Mock Storm in May 2018. Did not have mock storm, but held conference calls to accomplish items.
237	Forensic Data Collection	Conference call with all in notification phase T – 96.	Notify vendors
238	Forensic Data Collection	Reviewing data set provided by Mapping Service with Mapping Services and KEMA	Conference call
239	Forensic Data Collection	Daily conference calls with both vendors after T - 96.	Implement in the process for next storm.
240	Forensic Data Collection	Confirm enough field personnel available to do the work (Distribution and Transmission), based on size of storm (Cat 1 and above).	Implement in the process for next storm.
241	Forensic Data Collection	All PPE including Voltage Detectors for field inspections.	Implement in the process for next storm.
242	Forensic Data Collection	Need to notify Osmose to processed before T-24. We need more time to mobilize before the storm.	Notify Osmose to processed and arrange logistics at T-48. Will review with Functional Leader.
243	Forensic Data Collection	Osmose contact list before T-24	Implement in the process for next storm.
244	Forensic Data Collection	Verify Osmose vehicles can be fueled at ESA until fuel is available elsewhere.	Meet with Dave Ware about fleet process for fueling.

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245	Forensic Data Collection	Have Corp Com compose a customer letter for Osmose.	Implement in the process for next storm. Will require contractor to use their own company ID, no letter.
246	Forensic Data Collection	Add Osmose personnel to the Logistics Room List pre-storm notification phase, (Audrey Cain TECO) also food deliveries from the service area they will be working in.	Implement in the process for next storm.
247	Forensic Data Collection	Store room reminder of report for poles used in field for pole replacement. (needed by Kema for Total Analysis of System)	Implement in the process for next storm.
248	Forensic Data Collection	Data down loaded at the end of each day to Osmose office, office to upload to FTP site for KEMA.	Implement in the process for next storm.
249	ETR	There were significant delays in releasing locked out circuits to the ETR Teams for the initial damage assement and in restoring circuits to reduce customers out counts in the later days of the restoration effort.	Review and streamline the process for releasing locked out circuits and seek additional help for the DSO's. System Planning will share 2 engineers with the ETR team to assist.
250	ETR	Damage assessors, Meter Workers, Service Area Dispatcher miscommunications and PCAD errors resulting in delays in tickets getting energized	Discuss and research solutions and update procedures and how-to documents. SS is available to aid in any required and requested training. Consolidated 2 procedures into one to give more details on CAD and sent out to Service Area dispatchers
251	ETR	Communication bottlenecks between service area and ECC ETR teams	Use a dedicated Radio channel or Zello app for ETR teams; explore these or other methods and train all teams. System Planning will share 2 engineers with the ETR team to assist with communications between ECC and Service Area teams. Also using ARCOS to track assessment and restoration efforts.
252	ETR	Tracking spreadsheet issues with SharePoint and too much information to keep track	Investigate database solution with simple interface that is more robust and easier to use for the Service Area. Using ARCOS to replace SharePoint spreadsheets.
253	ETR	Having a single point of contact in the ECC ETR team to release locked out circuits EMS tag in order to energize the breaker creates a bottleneck	Investigate having multiple trusted ECC ETR members (and their Performance Coaches) be responsible for releasing the EMS tag. System Planning will share 2 engineers with the ETR team to assist.
254	ETR	Difficulty with calculating the ETRs	Review/develop process to collect D280's from the Service Areas twice per day (around noon and at the end of day) and use data to calculate global, county, and circuit ETRs. Will use tables in GTECH to collect D280 information and also input to DART for ETR calculations. Also updated the DA process to gather better assessment information quicker.
255	ETR	When tickets are created from the Isolation forms, information needs to be created more clearly.	Use the exact information in the Isolation Form. Provide more information other than "ETR Team". Using GTECH in the field to quickly and in real-time gather isolation information and update OMS electronically. Training to be completed soon.
256	ETR	Team members unfamiliar with the procedures and tasks needed to perform their role when needed	Change storm roles as needed. Also keep team members that are good at the their storm role in that role even though they might have changed their normal job roles. More training. Storm responsibilities for key roles staying the same for 2018. Multiple training sessions completed.
257	ETR	Procedures did not include the transition from System Restoration to Full ETR mode	Update procedure and train all personnel involved. The procedures are updated. SS is available to assist training if requested.
258	ETR	Need more realistic methods to calculate initial ETRs	Pre-selected circuits will be assessed and this data will be used to estimate system damage for day one ETR.
259	ETR	ETR Group needs wired TECO connections.	See #171
260	ETR/Distribution Ops	Service Area ETR teams overwhelmed with too many crews and information to keep track of restoration effort	Have ECC ETR reps in the service areas to help Ops Engs track crews and help develop ETRs; Revised process for DA when working with foreign crews (Day 2 +)
261	ETR	Not enough information from ETR/Svc Areas to Customer Experience to field questions from customers	ETR updates will be made in OMS at 3PM and midnight to be used by Customers and CSP's. In addition, CE can have access to ARCOS or the e-mail that goes to the EOC's to see where work is being done.
262	Foreign Crew Coordination	Develop one spreadsheet for foreign crews, that has company, lead contact, headcount, and assignment, all on one page, and print out 11x17 packets for distribution at the incident bases	Use of existing SEE Common Roster and add assignment - move across country is to adopt this roster (RLC); use of the SEE common roster is a vital to uploading crews in ARCOS

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#	Function	Action Items/Lessons Learned	Action to Be Taken or Resolution
263	Foreign Crew Coordination	Look at division of labor and setting up of templates on Sharepoint to speed up process of securing/releasing crews. Several times after SEE allocations, received calls saying no one had gotten in touch with responding company, wanting confirmation to respond.	Process improvements put in place; dedicated foreign crew liaisons will improve coordination with companies
264	Foreign Crew Coordination	Need Foreign Crew team to determine travel/billing start times for crews, not just starting restoration time	FC team will document travel/billing start times for each foreign crew initiated
265	Foreign Crew Coordination	Need a central location to gather emails from various FCs	Created a FCC mailbox
266	Foreign Crew Coordination	More than one group securing resources, causing confusion of who's coming	Communication between L. Collins & FCC unit documented, as Lee secures SEE resources and FCC secures foreign contractors; added to EM plan
267	Foreign Crew Coordination	Confusion over FC names (company working for multiple utilities i.e DH Elliott)	Investigated methods to gather more details on companies; FCC central team to try to tie subgroups of one company together
268	Foreign Crew Coordination	Scrambling to find the current list of contractors, requesting current COIs, rates, and agreements during the storm did not seem to work well - then, when the info started pouring in, in no specific format, it was chaotic with no efficient way to organize and reconcile the vast amount of information	Database list of contractors established, with all of their contact information; COIs, rates, agreements for foreign crews to be collected as secured for storm restoration; for foreign contractors that reach out and ask about storm support, current rates, COI, and list of personnel are collected
269	Foreign Crew Coordination	RATES - Since every contractor providing assistance seems to have unique classifications for their team members, it makes reconciling and comparing costs, time consuming and labor intensive	Each foreign company will have unique classifications for their team members, making it difficult to compare costs.
270	Foreign Crew Coordination	ROSTERS - Create an excel TECO-specific template for ROSTERS (again, every company seems to have submitted their rosters in every shape & form possible, which again, made estimating costs, reconciling, and tracking very difficult)	SEE common roster is all that needs to be provided to crews. We cannot modify the SEE roster and on the recommendation of Lee Collins we should stick to one common roster. Therefore a cut and paste will be necessary into the upload template. Multiple rosters/companies can be handled in one upload and done in batches as they are received.
271	Foreign Crew Coordination	PREPARATION/TRAINING - Advising team members (a day or 2 before Irma arrived) that there was a list of contractors that might be used, somewhere on the shared drive, maybe from the last storm in 2014??? was not pro-active	List should come from W. Caldwell file
272	Foreign Crew Coordination	verify Arcos functionality	R. Crossen testing Arcos for storm; should be more ready for next storm
273	Foreign Crew Coordination	assign more folks to distribution FCC	new team established with foreign crew liaisons for each IB
274	Foreign Crew Coordination	Coordination process between resourcing and logistics	A. Cain worked with L. Collins & FCC unit concerning foreign crew coordination on ideas for improvement
275	Foreign Crew Coordination	Need for a comprehensive tracking mechanism for all FCs	Working towards Arcos as providing the functionality to provide comprehensive foreign crew tracking
276	Foreign Crew Coordination/Svc. Areas	Work towards providing more accurate release schedules - told would be releasing crews at certain time, then find out areas keeping certain crews longer, caused mis-information to be communicated to home utility and others	Perhaps don't be so quick to release crews to account for trouble tickets continuing to flow in, coordinate with FCC closer on release schedules. Managers will communicate a little better to resolve this issue.
277	Foreign Crew Coordination/Svc. Areas	Not appropriate for crews to be released late in day with no provision for meals/hotels - have cutoff time (noon?) such that meals and hotels provided for any crews released after that time.	Times determined for start and cutoff
278	Foreign Crew Coordination/Distribution Ops.	Good lines of communications between Operations and Foreign Crew Coordination and Mutual Assistance over release of crews did not exist - officially told one release time/date, areas seemed to change on the fly.	Caldwell to be the official person to release all crews. For SEE crews, Caldwell to check with Collins before releasing. Starts at Svc areas stating they don't require anymore FCs. Foreign Crew liaisons will be contact with foreign companies.
279	Foreign Crew Coordination	Line Clearance procure all off system resources	Meeting scheduled for 1/22 to discuss best process for securing outside resources, see #213 for resolution

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280	Foreign Crew Coordination	Release of Asplundh crews by SEE companies complicated by Asplundh's Storm Center - required separate email confirming release/request	Request meeting with Asplundh to discuss their Storm Center and determine better process for securing crews released by SEE and other RMAG companies. Due to Line Clearance RPF and reorganizations within Asplundh, this meeting to be set up sometime in 2nd qtr.
281	Foreign Crew Coordination	Need to separate the mgmt of foreign T&D linecrews from foreign Damage Assessors and foreign tree trim crews	Agreement made; J. Swoboda to add/adjust procedure to master storm plan. At 1/22/18 meeting to discuss securing of foreign crews a process of coordination was developed that would Line Clearance, DA, SEE Mutual Assistance and Contractor Management to secure crews without duplication. The need for Planning to handle the allocation of crews was also discussed. Ron Neil is updating the appropriate sections in the ED EM Plan.
282	ED EM	Storm Dash Board off line, could not access to view or update	Need more detail - was it locked by others? Going forward, will have reduced dashboard with all updates going through one person rather than trying to have everyone access it.
283	Foreign Crew Coordination	Resource Planning of crews and Service area tracking of crews kept in two separate spreadsheets	Investigated merging data into a single location for ease of use. Utilize ARCOS Crew Manager. In place and tested by 6/1/18
284	Resource Management/HR	A determination of whether section D of the 2.17 overtime policy is going to be implemented should be done very shortly after the storm passes	A faster decision will allow for more efficient communications for labor charges, and better storm estimates
285	ED EM	Develop ED delivery command org chart with cell phone number contacts on it. Have printed copies as well for each incident base.	Rosters with phone numbers for all ED Command are already available on the ED EM Website page, under ROSTERS
286	ED EM	ROSTER W/PH NUMBERS FOR INCIDENT BASES	Rosters with phone numbers for all IB's are already available on the ED EM Website page, under ROSTERS
287	ED EM	ROSTER & ADDRESSES OF SUBSTATIONS BY SVC AREA	Created, will be added to ED EM Website with 2018 update.
288	ED EM	TEAM MEMBER UNCERTAINTY ON STORM ROLE DURING ETR	MOCK STORM AGAIN TO INCLUDE IB DAY W/LOGISTICS - Plan to repeat IB setup in 2018 exercise.
289	ED EM	Provide training to more people that will set up the FORTS. Set up time was longer than needed. Standardize the setup direction to accommodate the team checking in line crews.	Will implement annual checkout of units at each service area, will use that opportunity to train SA personnel. Also discussing with Facilities having them set the units up as part of IB setup
290	ED EM	Number of conference calls expected to be on excessive for this position: 2 ED calls w/preparation, 2 Unified Command calls, 2 SEE calls w/preparation, Governors Call, all per day occupied too much time. Also had requests to join other functional area's calls - just can't do them all	Limit role on calls to a listening one (Unified Command and Governor's call) so that attendance is optional, decline all other area's calls unless specifically requested.
291	ED EM	Set FORTS up the day before opening the IB, preferably early morning	Will consider rolling into process
292	ED EM	Add step to test FORTS network connectivity and assign the task to someone	Will consider rolling into process
293	ED EM	Define purpose of FORTS & place accordingly; evaluate whether we need multiple FORTS in IBs that aren't close to Service Areas (Logistics team and Operations fought for the space)	FORTS are intended for the use of Operations, considering the purchase of 3 additional FORTS for 2017
294	DAU	Computer adapters for video . Power Strips	Adaptors have been purchased.
295	DAU	Re-evaluate Staffing and Times - Dart / Forcaster	Resources have been reallocated to ensure coverage.
296	DAU	Re-evaluate Dart Export Process	Resources have been reallocated to ensure coverage.
297	DAU	Nerc Access for all DAU Team members	Assigned location now moved back to ECC Tour
298	ETR/Distribution Ops	TECO Employees requesting "Special Requests" or estimated times of restorations.	The current process of circuit prioritization will be used

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- 88.** Refer to testimony of Gerard Chasse at page 15, lines 21-25 and page 16. Please explain how many days prior to the anticipated storm impact the first task is implemented and how it is determined when this task will be performed?
- A.** In general, the answer to this question depends on early indications as to a storm's potential intensity. The first task in question is storm modeling, which historically for the company has occurred typically five to seven days in advance of potential impacts to peninsular Florida and the company's service area. Depending on the size, strength and path of the storm(s), forecasted storm surge can cause this storm modeling to be initiated as early as ten or more days ahead. Tampa Electric's experience with the extremes of Hurricane Irma suggests the need for earlier modeling in advance of future projected major storms. Typically, the modeling is performed when there is sufficient granular weather information to provide a reasonable forecast of the impacts expected to Tampa Electric's service area. As the modeling is the basis for determining the number of outside resources required to restore service to customers in a reasonable time, it must be conducted far enough in advance of the storm's impact to allow Tampa Electric to request and secure outside resources and allow for any travel time required to arrive in the area or just outside the area expected to be impacted by the storm to allow rapid restoration response once the storm has passed.

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89. Refer to testimony of Jeffrey Chronister at page 17, lines 3-23. The testimony indicates plant is debited based on the actual costs. Please explain in detail how the Company tracks labor and contract labor during the storm restoration associated with capital work so that it is able to record the actual cost of labor and contract labor for capital work. If not actually tracked, please explain how the labor and contract labor is classified as actual cost.

A. The actual capital costs for native contractors and Tampa Electric employees have been captured as well as the actual material costs for capital work during all of the storms.

Foreign resources were not used for any storm for capital work except for Hurricane Irma. The company charged all foreign contractor work associated with Hurricane Irma to the storm reserve since their time devoted to capital work was not specifically tracked. If the company were to attempt to capitalize a portion of the foreign crew restoration work during Hurricane Irma, it would have to devise an appropriate capitalization methodology. A potential approach to derive a capitalization amount would be to utilize the following methodology:

- a. Take the installation time utilized in Tampa Electric's work management system to perform this capital work. Double that time due to the challenges of performing this work during storm restoration.
- b. Take these hours and multiply them by an average hourly rate derived from the total costs by each vendor divided by their work hours. This results in a total cost for the foreign resources to perform all of the capital work.
- c. This total cost would be reduced by the native contractor costs that were charged to perform capital work.

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- 90.** Refer to the response to OPC Interrogatory No. 64 in set 3. Please provide the number of hours that resulted in each storms capitalized labor amount and contractor labor amount (i.e. there is no quantity listed). If there are other costs included in the capitalized labor and contractor amount, please identify the other cost and the amount of that cost for each respective storm. If the labor and contractor amount was calculated using a formula, please provide for each storm the calculation for that amount.
- A.** As discussed in Interrogatory No. 89 of this set, the company did not capitalize any foreign crews' costs. If this was done, the company estimates that the capitalized amount would have increased by approximately \$3.8 million. For Hurricane Hermine, the company capitalized 897.25 actual internal hours, for Hurricane Matthew it was 42.9 internal hours, and for Hurricane Irma it was 11,669.68 internal hours.

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- 91.** Refer to testimony of Jeffrey Chronister at page 18, lines 3-25. Please explain how the capitalized amount of \$38.9 million was calculated and whether the calculation is consistent with the methodology used in Hurricane Irma.
- A.** The replacement of units of property in transmission and distribution has not changed. The company's \$38.9 million of capitalized storm costs during the 2004 hurricane season was calculated in two parts, the first part relied upon on the replacement of units of property and the labor costs associated with that activity. This methodology of capitalizing units of property has not changed since 2004, therefore the replacement of these units would be the same methodology used during Hurricane Irma. The second part of the calculation involved a stipulated agreement which increased the amount of equipment and labor that was capitalized during the 2004 Hurricane season. Per the terms of the Stipulation, TECO capitalized \$38.9 million of the total amount, leaving a balance of \$34.5 million to be charged against the reserve. As noted in the Discussion of Issues in Docket No. 20050225-EI, "the \$38.877 million to be capitalized includes approximately \$14.1 million that could be considered "normal" costs if the activities had not been undertaken for restoration purposes related to the hurricanes. The difference of approximately \$24.8 million is the "excess capital costs" which is a direct result of the rapid restoration of service. Staff would normally take exception with the capitalization of the "excess capital cost." However, in this case, staff does not believe that capitalizing this amount harms the customer. The result of leaving this amount in the storm reserve account or capitalizing it as electric plant in service has no current effect on rate base. The effect of not capitalizing the amount would result in a negative instead of a positive storm reserve going into the 2005 hurricane season. Staff would, therefore, not take exception to the capitalization of this amount in this case." After charging the \$34.5 million of storm restoration costs against the reserve balance of \$42.3 million, a positive balance of \$7.9 million remained in the property insurance reserve as approved by the Commission in Consummating Order No. PSC-2005-0747-CO-EI on July 14, 2005.

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92. Refer to the response to OPC Interrogatory No. 64 in set 3. Please provide an updated response for Hurricane Irma such that the total matches the \$8.737 million in Revised Exhibit No.__(JSC-1) Document 1.

A. The table below provides an updated response for Hurricane Irma showing the total matching the \$8.737 million in Revised Exhibit No.__(JSC-1) Document 1.

	Irma							
	Distribution		Other		Generation		Total	
	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity
Arrestors	\$ 44,702.50	1,675	\$ 4,924.18	18			\$ 49,626.68	1,693
Cable	\$ 39,933.90	47,710	\$ 8,853.76	10,961			\$ 48,787.66	58,671
Conductors	\$ 36,417.69	131,159	\$ 4,209.17	461			\$ 40,626.86	131,620
Conduit	\$ 32.58	60	\$ 727.63	223			\$ 760.21	283
Cutout	\$ 79,694.53	1,433	\$ 221.97	4			\$ 79,916.50	1,437
Lighting	\$ 127,400.92	696	\$ 402,906.79	828			\$ 530,307.71	1,524
Misc	\$ 4,527.52	4,334	\$ 192,175.21	6,856			\$ 196,702.73	11,190
Pole	\$ 105,737.28	414	\$ 17,608.74	97			\$ 123,346.02	511
Relay	\$ -	-	\$ 48,505.41	9			\$ 48,505.41	9
Switch	\$ 28,260.52	114	\$ 2,122.13	15			\$ 30,382.65	129
Switchgear	\$ 10,200.57	1	\$ -	-			\$ 10,200.57	1
Terminator	\$ 1,832.06	37	\$ -	-			\$ 1,832.06	37
Transformers	\$ 450,239.86	377	\$ 3,466.70	5	\$ 298,565.30		\$ 752,271.86	382
Wire	\$ -	-	\$ 2,378.36	4,567			\$ 2,378.36	4,567
is covers/lagging					\$ 297,010.65		\$ 297,010.65	-
blending bin roof					\$ 21,988.36		\$ 21,988.36	-
o motor & related					\$ 57,950.22		\$ 57,950.22	-
fire panel					\$ 352.06		\$ 352.06	-
sea wall					\$ 42.00		\$ 42.00	-
Labor	\$ 621,807.36		\$ 605,470.98		\$ 284,000.00		\$1,511,278.34	
Contractors	\$ 207,047.63		\$ 145,303.12		\$3,890,000.00		\$4,242,350.75	
Material & Supply	\$ 138,602.25		\$ 181,426.14		\$ 152,091.41		\$ 472,119.80	
Fleet	\$ 121,545.01		\$ 42,672.30		\$ -		\$ 164,217.31	
Equipment Rental	\$ 1,821.04		\$ 52,424.22		\$ -		\$ 54,245.26	
Other	\$ -		\$ 43.87		\$ -		\$ 43.87	
Total	\$2,019,803.22	188,010	\$1,715,440.68	24,044	\$5,002,000.00	-	\$8,737,243.90	212,054

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- 93.** Refer to testimony of S. Beth Young at page 13, lines 14-21. Please identify what cost category on Revised Exhibit No.__(JSC-1) Document 2 the \$3,956,147 is included in. If more than 1 category provide a summary by category.
- A.** The \$3,956,147 is included in Revised Exhibit No. (JSC-1), Document 2 in the Outside Services – Other Services cost category.

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94. Refer to testimony of S. Beth Young at pages 13-40. Please provide a summary listing of foreign crews that were under contract for 2017 restoration prior to the 2017 hurricane season. The list should identify the contractor and the contract period. If none were under contract, please provide an explanation as to why TECO does not proactively contract for emergency situations such as hurricanes, tornados and wind/rain storms.
- A. Tampa Electric had contracts with the following companies prior to the 2017 hurricane season, and the current expiration date is listed below:
- Team Fishel: 12/31/2020
 - Service Electric Company: 12/31/2019
 - Griffin Utilities: 11/1/2018
 - Pike Electrical, LLC: 10/5/2018
 - Power Town Line Construction: 12/31/2020
 - Enercon: 7/7/2021
 - IJUS: 7/1/2021
 - LineWorks: 12/14/2019
 - UC Synergetic: 8/26/2021
 - Davey Tree Expert Company: 12/31/2022
 - Tree's, LLC: 12/31/2022

The contractors on this list, together with assistance from SEE, were sufficient to restore service to our customers in a safe and efficient manner for all of the storms addressed in this docket except for Irma.

As noted in the prepared direct testimony of Gerald R. Chasse and the answer to Interrogatory No. 85, above, Hurricane Irma was a unique storm in terms of its size, strength, unpredictability, closeness in time to Hurricane Harvey and demand for restoration resources all across peninsular Florida. Consequently, the way in which Tampa Electric acquired restoration resources for Irma should not be viewed as typical or ordinary. All utilities in peninsular Florida felt a need to secure as many resources as possible and getting resources to promptly restore service to customers became more important than cost. Tampa Electric and other Florida IOUs quickly exhausted the resources available from the SEE and were forced to seek assistance from other mutual aid organizations and beyond to secure resources. Through an extraordinary effort, Tampa Electric and its outside restoration crews were able to restore service within seven days to 99 percent of the 425,000 customers who experienced an outage. In addition, all of the outside resources the company called upon for assistance in this

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restoration effort were released to assist other utilities or return home within eight days.

Based on our experience with Hurricane Irma, the company has begun the process of establishing MSAs with additional contractors, so Tampa Electric will have a larger pool of resources to call on if the company is faced with a storm like Irma in the future.

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- 95.** Refer to testimony of S. Beth Young at page 28, lines 18-21. Please provide a list of contractors that specified a minimum number of hours, what those hours were, and whether the minimum applied to mobilization/demobilization and standby time.
- A.** The companies that specified a minimum number of hours and the details are listed below. Please refer to the key in Exhibit No. SEY-1, Document No. 5 for the company names.
- Vendor #3 - line workers were paid a minimum of 16 hours a day for storm work.
 - Vendor #54 - line workers were paid 24 hours a day for storm work.
 - Vendor #67 - line workers were paid a minimum of 16 hours a day for storm work.
 - Vendor #16 - line workers were paid 24 hours a day for storm work.
 - Vendor #42 - line workers were paid 24 hours a day for storm work.
 - Vendor #41 - line workers were paid a minimum of 16 hours a day if asked to "Stand-by" for storm work. Tampa Electric did not request Vendor #41 to stand-by.
 - Vendor #27 - line workers were paid a minimum of 16 hours a day for storm work and 2 hours of "Stand-by".
 - Vendor #35 - line workers were paid a minimum of 16 hours a day for storm work.

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- 96.** Refer to testimony of S. Beth Young, Revised Exhibit No._ (SEY 1), Document 2. Please provide a listing of contractors that provided damage assessors and if those contractors also provided line crews for restoration please indicate so next to the contractor's name.
- A.** Below is the listing of "Native" and foreign contractors/utilities that provided damage assessors and if those contractors/utilities also provided line crews for restoration during Hurricane Irma:
1. Enercon – No line crews provided
 2. IJUS - No line crews provided
 3. LineWorks - No line crews provided
 4. UC Synergetic – Parent company "Pike" did provide line crews during Hurricane Irma
 5. AEP Kentucky Power – Yes, line crews provided
 6. AEP Ohio Power – Yes, line crews provided
 7. AEP Ohio Power (Osmose contractor) – No line crews provided
 8. First Energy - Ohio Edison – Yes, line crews provided
 9. Resource Asset Management Solutions – No line crews provided

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- 97.** Refer to testimony of Sarah L. Djak at page 16, lines 6-10. Did the Company apply any guideline or hard rule as to what number of hours were reasonable to travel the 500 miles? If so, what was the number of hours and please explain how that number was determined to be reasonable? If not, how did the Company determine the travel time billed was reasonable?
- A.** During the Supplemental Review, Tampa Electric used 500 miles as a general guideline of miles that a group of line workers would travel in one day. Any group that traveled less than this in one day was flagged for review during the process. Each instance was reviewed on a case-by-case basis, and the area and dates of travel were considered. The company's review considered the fact that most out of state crews chose to remain out of state until the storm had passed, and it was safe to travel. As the crews approached Florida, the daily mileage typically reduced due to the number of residents and storm workers coming into the state immediately after the storm moved out of Florida. In addition, the Suwannee River flooded over its banks, closing a section of I-75. All of these things made travel into Florida difficult and in some cases reduced the number of miles traveled in a day.

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98. Refer to testimony of Sarah L. Djak at page 26, lines 1-23. Were contracts and rate sheets or Master Service Agreements included in the review binders during the review performed by TECO? If not, please explain why not and whether you agree that contracts, rate sheets and Master Serve Agreement should be included for review purposes?

A. The company does not agree that these materials must be included for review in all instances. In the final analysis, the issue is whether the labor and other costs incurred were reasonable, and in this case, as a result of the Supplemental Review, the company was able to ascertain that the labor costs it included for recovery in its Second Amended Petition were reasonable.

Tampa Electric included the contracts and rate sheets or MSAs, if they were available, in the review binders during the performance of the supplemental review. The contracts and rate sheets or MSAs were obtained at varying times throughout the supplemental review process and were printed as support and added to the review binders as they were located. In some instances, the contracts and rate sheets or MSAs were reviewed electronically and initially were not physically placed in the review binder. The company has gone through all of the review binders to ensure all available contracts and rate sheets or MSAs are in the review binders at this time and prior to the electronic scanning of the review binders that were provided in the Office of Public Counsels Fifth Request for Production of Documents, Document No. 17 that was filed on February 19, 2019.

Not all review binders included contracts and rate sheets or MSAs. Investor Owned Utilities ("IOUs") that participate in the SEE do not provide rate sheets due to confidentiality and labor concerns. In these instances, rates for IOUs were either obtained off of the invoice received or calculated using labor and total hours charged.

Tampa Electric was unable to obtain rate sheets for four of the company's foreign contractors that assisted in restoration efforts for Hurricane Hermine and Tropical Storm Erika. The rates for these foreign contractors were obtained off the contractor's invoice. The rates were reviewed, compared and checked for reasonableness against other storm vendors for the time period worked.

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99 Refer to testimony of Sarah L. Djak. Would you recommend a similar review be followed for future storms? If not, why not? If so, what if any changes would you recommend to the process?

A. The company intends to use the recoverability guidelines applied during the Supplemental Review to future storms, but before invoices are approved for payment, not after. The Supplemental Review has highlighted the importance of conducting a detailed review of invoices prior to payment.

The company will be implementing process changes that will make review and approval of storm cost invoices more efficient and effective for future storms.

As a beginning point, the company has begun the process of entering into MSAs or contracts with additional vendors who might be called upon to help in future storms. Having more contractors under contract before a large storm hits will prevent many potential issues before they arise.

Next, before each storm season begins, the company will send written instructions to potential vendors detailing billing protocols and documentation requirements. Then, once a storm is imminent and vendors are being secured, the company will resend the instruction letter to each vendor secured as a reminder. The company anticipates that this will help establish more specific expectations and result in fewer issues during invoice review.

The process changes being implemented for future storms are more fully discussed in the revised direct testimony of Gerald R. Chasse and S. Beth Young. Here is a summary of some of those changes:

Electric Delivery Department

- Technology for Tracking (system already implemented)
- Foreign Crew Liaisons
 - Daily Time Sheets
 - Equipment Check-In
 - Confirm Lodging
 - Confirm Meal Process
 - Provide the following documentation to the Finance Department:
 - Dates: Secured, travel started, arrived, released
 - Release destination (home, another utility)
 - Rosters
 - Rate sheet

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- Daily time sheets
- Any non-typical events that may affect billing

Finance Department

- Assign Finance personnel during storm prep, restoration, and conclusion to work with the Electric Delivery Resource Management Group
- Finance personnel provide, real-time involvement in requesting, organizing, validating and retaining documentation
- Assign additional Finance personnel to cost estimation team
- Assign additional Finance personnel to invoice review and approval process
- Execute procedures for requesting timely invoices, completing research and documentation steps and holding payment until all validation is complete

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- 100.** Refer to the responses to OPC Interrogatory No. 18, Interrogatory No. 21, Interrogatory No. 45 and Interrogatory No. 69. Please explain why one response (i.e. 18) states there is no regular payroll in the Company's request for recovery and the other response (i.e. 21) identifies \$1,133,450 of regular payroll is included in Hurricane Irma costs. Please explain why, if regular payroll is included as stated in Interrogatory No. 45, what TECO has relied on as justification for including that regular payroll (what is allowable under the Rule and what support exists showing the cost to be incremental) and provide supporting cost detail for those dollars included.
- A.** Interrogatory No. 21 refers to \$1,334,114 of regular payroll as opposed to the \$1,133,450 noted above. This number was a preliminary number and has been revised to \$1,340,489 (see Response to Interrogatory No. 102. of this set). Straight time pay was charged to the reserve during Hurricane Irma however the charges were considered incremental because the straight time charges incurred would have been charged to capital activities, clause activities or at the company's affiliates. Therefore, these charges are not included in base rates and are considered incremental to Tampa Electric's normal operation and maintenance costs.

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101. Revised Exhibit No.__(JSC-1) Document 2 and Document 3. Please provide a summary of Document 3 amounts showing a breakdown of costs as listed in Document 2. (i.e. Contractor cost of \$79,168 is xx line clearing, xx contractors, etc.)

A. The summary of Exhibit No. JSC-1, Document 3 showing a breakdown of costs as listed in Document 2 is included below.

Tampa Electric's Recoverable Storm Restoration Costs by Cost Type							
(In \$ Thousands)							
	Total Storm Restoration						
	<u>Recoverable Costs</u>	<u>Erika</u>	<u>Colin</u>	<u>Hermine</u>	<u>Matthew</u>	<u>Irma</u>	
Contractors	79,168	611	1,741	4,159	783	71,873	
Outside Services - Line Clearance	7,127	78	128	333	180	6,409	
Outside Services - Other Services	72,041	534	1,613	3,827	603	65,464	
Logistics	4,986	24	127	225	12	4,599	
Employee Expense	4,885	24	127	192	12	4,530	
Other Operating Expense	101	0	0	33	0	69	
Transportation of Crews	223	0	6	0	0	216	
Employee Expense	6	0	6	0	0	0	
Materials & Supplies	212	0	0	0	0	212	
Outside Services - Other Services	4	0	0	0	0	4	
Vehicle Rentals	16	0	0	16	0	0	
Waste Management	39	0	1	0	0	39	
Outside Services - Other Services	36	0	1	0	0	36	
Other Operating Expense	3	0	0	0	0	3	
Rental Equipment	11	0	0	0	0	11	
Materials & Supplies	1,362	0	2	38	6	1,317	
Materials & Supplies	1,361	0	2	38	6	1,316	
Other Operating Expense	1	0	0	0	0	1	
Labor	10,478	63	641	855	205	8,713	
Fuel	1,119	0	6	8	0	1,104	
Materials & Supplies	563	0	6	8	0	549	
Outside Services - Other Services	555	0	0	0	0	555	
Public Service Announcements	0	0	0	0	0	0	
Total	97,401	699	2,523	5,302	1,006	87,871	

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102. Refer to the responses to OPC Interrogatory No. 17. Please provide an updated breakdown of Hurricane Irma labor costs that totals to the \$8.713 million shown on Revised Exhibit No.__(JSC-1) Document 2.

A. Regular straight time labor was incurred for Hurricane Irma for any time that was incremental to regular business. This included labor from clause related employees or time from the company's affiliate utilities (i.e. Peoples Gas System), and labor that would have otherwise been charged to capital projects. The updated breakdown is included below:

	Overtime Payroll Amounts			
	Overtime Labor	Fringe	Payroll Tax	Total Overtime Payroll
Tropical Storm Erika	46,191	13,395	3,695	63,282
Tropical Storm Colin	468,231	135,787	37,459	641,477
Hurricane Hermine	624,414	181,080	49,953	855,447
Hurricane Matthew	149,407	43,328	11,953	204,687
Hurricane Irma	5,019,503	1,455,656	401,560	6,876,720
Total	6,307,746	1,829,246	504,620	8,641,612
	Incremental Straight Time Labor			
	Incremental Straight Time Labor	Fringe	Payroll Tax	Total Incremental Straight Time Payroll
Tropical Storm Erika	-	-	-	-
Tropical Storm Colin	-	-	-	-
Hurricane Hermine	-	-	-	-
Hurricane Matthew	-	-	-	-
Hurricane Irma	1,340,489	388,742	107,239	1,836,470
Total	1,340,489	388,742	107,239	1,836,470
	Total Labor			
	Total Labor	Total Fringe	Total Payroll Tax	Total Labor Payroll
Tropical Storm Erika	46,191	13,395	3,695	63,282
Tropical Storm Colin	468,231	135,787	37,459	641,477
Hurricane Hermine	624,414	181,080	49,953	855,447
Hurricane Matthew	149,407	43,328	11,953	204,687
Hurricane Irma	6,359,992	1,844,398	508,799	8,713,189
Total	7,648,235	2,217,988	611,859	10,478,082

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- 103.** Refer to the responses to OPC Interrogatory No. 19, Interrogatory No. 42 and Interrogatory No. 46. Please explain how the Company determined that the bonuses for T.S. Colin were incremental, when the response to Interrogatory No. 42 suggests that the amount of payroll charged to base O&M costs are not separable from the \$295.4 million reflected on Schedule C-35. If base O&M is separable, please provide a breakdown of the \$295.4 million between O&M, capital, other and below the line as described in the response.
- A.** The company believes these are incremental charges based on the response in Interrogatory No. 46.

Tampa Electric paid "bonuses" during Tropical Storm Colin in the amount of \$14,662.90 that were related to extraordinary overtime or performance by company personnel that was incremental to their normal job duties and responsibilities and could be separately identified. These costs were separable from payroll based on the unique general ledger accounts that isolate bonus pay. The \$295.4 million that makes up the Minimum Filing Requirement ("MFR") Schedule C-35 asks for total payroll and is not broken out between O&M, Capital and Other. The projected payroll charges would be put together based on expected normal operations.

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- 104.** Refer to the response to OPC Interrogatory No. 49. Please explain what was relied on in responding to this request and why invoices would suggest crews of 4 or 5 for foreign line crews (i.e. see Bates 2-3; 3973; 3980; 4189, etc.)
- A.** Crews can be 2, 3, 4- or 5-man crews, depending upon the available resources and typical makeups for the responding company. Foreign line crews, in addition to linemen and support, may also contain a supervisor or working foreman and an apprentice lineman. Given the unknown nature of restoration work, larger crew makeups are able to handle more kinds of work making them more flexible in responding. As the restoration effort draws to a close and the jobs become smaller in scope and requirements, larger crews can be broken up into 2- or 3-man crews to increase the number of locations they are able to address.

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- 105.** Refer to the response to OPC Interrogatory No. 60. The response only references Tampa Electric time sheets and native contractors. Please explain in detail how TECO accounts for foreign contractors performing capital work and provide a sample calculation of costs capitalized during the storm for poles and wires by foreign contractors. If foreign crew costs are not capitalized, please explain why not.
- A.** As noted in Tampa Electric's response to Interrogatory No. 89 of this set, the company charged all foreign contractor work associated with Hurricane Irma to the storm reserve since their time devoted to capital work was not specifically tracked. Had the company utilized the foreign crew capitalization methodology described in the response to Interrogatory No. 89 of this set, approximately \$3.8 million of the costs charged to the storm reserve for foreign crews could have been capitalized.

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- 106.** Refer to the response to OPC Interrogatory No. 64. Please provide supporting detail for each storm that shows the number of hours that resulted in the labor dollars listed and the contractor dollars listed. Also explain whether contractor dollars include equipment costs and/or other costs charged by the contractor.
- A.** See response to Interrogatory No. 90 of this set, all contractor costs included all equipment, or any other costs incurred by the contractors; however, if the company utilized the methodology described in Interrogatory No. 89 of this set, it would have resulted in a total of 24,347 of contractor labor hours being capitalized.

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- 107.** Refer to the response to OPC Interrogatory No. 70. Please explain how the actual is recorded during the restoration process, whether special reporting is utilized, and who is responsible for reporting the labor incurred.
- A.** Capital accounts were established where all capital materials would be issued to and any related labor would also be charged. Actual time, by native contractors and Tampa Electric employees, and materials were charged to these accounts. As noted in the Response to Interrogatory No. 89 of this set, the company charged all foreign crew resource costs to the storm reserve and did not capitalize them.

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108. Refer to the response to OPC Interrogatory No. 77. The response to part (a) explains adjustments reflected for the smaller storms. Please explain why the invoiced amounts for Irma do not appear to be adjusted in a similar manner.

A. The calculation was performed in accordance with PSC Order No. PSC-07-0307-NOR-EI dated April 12, 2017. Storm related charges allowed to be charged to the reserve under ICCA methodology include tree trimming expenses incurred in any month in which storm damage restoration activities are conducted that exceed the actual monthly average of tree trimming costs charged to O&M for the same month in the three previous calendar years.

Hurricane Irma and Matthew were the only two storms that exceeded the actual monthly average of tree trimming costs charged to O&M for the same month in the three previous calendar years.

Tree trimming costs for Hurricane Irma were adjusted to O&M by \$167,625 as shown by the calculation in Interrogatory Response No. 109 of this set. Hurricane Matthew tree trimming costs of \$22,874 were not reclassified to O&M. None of the other storms tree trimming costs exceeded the three-year average threshold to move costs from the job order to O&M as shown below.

	Tree Trim Monthly O&M			
	May	June	September	October
2012			\$ 743,847	
2013	\$ 900,054	\$ 669,801	\$ 696,269	\$ 1,079,238
2014		\$ 735,064	\$ 863,983	\$ 1,136,482
2015		\$ 748,020	\$ 991,828	\$ 1,206,914
2016		\$ 990,695	\$ 1,236,847	\$ 1,118,004

	3-Year Average	Storm Month	Tree Trim	Storm Job Order charge to reserve	Amount eligible to O&M
Tropical Storm Erika	\$ 768,033	\$ 991,828	\$ 77,649	\$ 301,444	\$ -
Tropical Storm Colin	\$ 717,628	\$ 990,695	\$ 127,820	\$ 400,886	\$ -
Hurricane Hermine	\$ 850,693	\$ 1,236,847	\$ 332,570	\$ 718,724	\$ -
Hurricane Matthew	\$ 1,140,878	\$ 1,118,004	\$ 179,760	\$ 156,886	\$ 22,874

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109. Refer to the response to OPC Interrogatory No. 58. Please provide a calculation showing how the \$168,000 adjustment for Irma was determined.

A. The tree trimming costs for Hurricane Irma were adjusted to O&M by \$167,625 as shown by the calculation below:

Tree Trim Monthly O&M	
September	
2014	\$ 863,983
2015	\$ 991,828
2016	\$ 1,236,847
2017	\$ 863,261

	3-Year Average	Storm Month	Storm Job Order Tree Trim	Amount eligible to charge to reserve	Storm Tree Trim to O&M
Hurricane Irma	\$ 1,030,886	\$ 863,261	\$ 6,060,840	\$ 5,893,215	\$ 167,625

A F F I D A V I T

STATE OF FLORIDA)
)
COUNTY OF HILLSBOROUGH)

Before me the undersigned authority personally appeared, Jeffrey Chronister who deposed and said that he is a Vice President, Finance, Tampa Electric Company, and that the individuals listed in Tampa Electric Company's response to OPC's Seventh Set of Interrogatories, (Nos. 85 - 109) prepared or assisted with the responses to these interrogatories to the best of his information and belief.

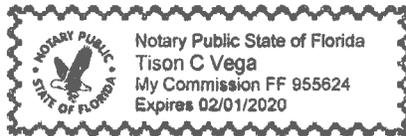
Dated at Tampa, Florida this 1 day of March, 2019.



Sworn to and subscribed before me this 1 day of March, 2019.



My Commission expires _____



A F F I D A V I T

STATE OF FLORIDA)
)
COUNTY OF HILLSBOROUGH)

Before me the undersigned authority personally appeared, Sarah Djak who deposed and said that she is a Sr. Regulatory Accounting Analyst, Tampa Electric Company, and that the individuals listed in Tampa Electric Company's response to OPC's Seventh Set of Interrogatories, (Nos. 85 - 109) prepared or assisted with the responses to these interrogatories to the best of her information and belief.

Dated at Tampa, Florida this 4 day of March, 2019.

Sarah L Djak

Sworn to and subscribed before me this 4th day of March, 2019.

Tison C Vega



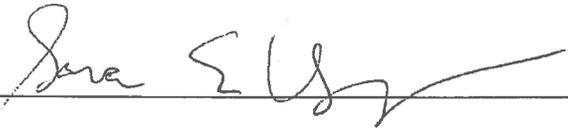
My Commission expires _____

A F F I D A V I T

STATE OF FLORIDA)
)
COUNTY OF HILLSBOROUGH)

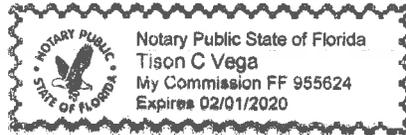
Before me the undersigned authority personally appeared, S. Beth Young who deposed and said that she is a Director, Asset Management, Planning & Support, Tampa Electric Company, and that the individuals listed in Tampa Electric Company's response to OPC's Seventh Set of Interrogatories, (Nos. 85 - 109) prepared or assisted with the responses to these interrogatories to the best of her information and belief.

Dated at Tampa, Florida this 1 day of March, 2019.



Sworn to and subscribed before me this 1 day of March, 2019.





My Commission expires _____