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INDIANA UTILITY
REGULATORY COMMISSION

Petitioner's Exhibit No. 2 Vectren South Page 1 of 15

# SOUTHERN INDIANA GAS AND ELECTRIC COMPANY d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC. (VECTREN SOUTH)

**IURC CAUSE NO. 44910** 

**DIRECT TESTIMONY** 

OF

LYNNAE K. WILSON

**VICE PRESIDENT OF ENERGY DELIVERY** 

ON

DESCRIPTION AND DEVELOPMENT OF THE TDSIC PLAN

SPONSORING PETITIONER'S EXHIBIT NO. 2,
ATTACHMENTS LKW-1 THROUGH LKW-2

### DIRECT TESTIMONY OF LYNNAE K. WILSON

1	I.	INTRODUCTION
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3	Q.	Please state your name, business address and occupation.
4	A.	My name is Lynnae K. Wilson. My business address is One Vectren Square, Evansville
5		Indiana, and I am Vice President of Energy Delivery for Vectren Utility Holdings, Inc
6		("VUHI").
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8	Q.	What are your duties in your present position?
9	A.	I have responsibility for electric and gas utility operations and engineering for all VUH
10		utilities located in the states of Indiana and Ohio, including Southern Indiana Gas and
11		Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. ("Vectren South" or the
12		"Company"). My specific responsibilities include the leadership and oversight of electric
13		and gas field operations, system operations and engineering.
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15	Q.	Please describe your professional experience.
16	A.	I have been employed by Vectren since May 2003 when I joined the layout and design
17		engineering team. Since that time, I have held several positions at Vectren including
18		Field Supervisor, Regional Supervisor, Division Manager - Southwest Field Operations
19		Director - A.B. Brown Power Plant, Director - Electric Engineering and System
20		Operations, and Director - Engineering and System Operations. In June 2016, I was
21		appointed to my current position.
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23		Prior to my experience with Vectren, I was employed by United States Gypsum
24		Company as a project engineer and with NuVox Communications as an engineer.
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26	Q.	Please describe your educational background.
27	A.	I received a Bachelor of Science in Mining Engineering from the University of Missouri -
28		Rolla (now known as Missouri University of Science & Technology) in 1998.
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What is the purpose of your testimony in this proceeding?

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Q.

My testimony describes the seven-year plan (the "TDSIC Plan") Vectren South has developed to make transmission, distribution, and system improvements to its electric transmission and distribution system. Specifically, I present the TDSIC Plan, explain how it was developed, describe components of the TDSIC Plan and explain the need for flexibility in the TDSIC Plan. I will also explain why the benefits justify the estimated costs for the TDSIC Plan, how public convenience and necessity and public safety require the TDSIC Plan, and what Vectren South customers can expect from the TDSIC Plan.

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- 10 Q. Are you sponsoring any exhibits in this proceeding?
- 11 A. Yes. I am sponsoring the following exhibits:
  - Petitioner's Exhibit No. 2, Attachment LKW-1: Electric TDSIC Plan
  - <u>Petitioner's Exhibit No. 2</u>, <u>Attachment LKW-2</u>: Program Descriptions

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### II. TDSIC PLAN OVERVIEW

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#### Q. Please describe the TDSIC Plan's purpose?

Α. Vectren South understands that its customers depend upon the electric services that we provide and that we must provide them in a safe, resilient and reliable manner. Over the years, Vectren South has consistently invested in its distribution and transmission system to provide safe and reliable power for its customers. Even as this work is completed, Vectren South's assets continue to age, and new and even more reliable and efficient technologies emerge. In order to preserve system reliability, Vectren South carefully considers improvements and upgrades to its electric system. These improvements, upgrades, and in some cases entirely new technologies and approaches, will reduce the probability of equipment failures and unplanned, and perhaps lengthy, outages. This, in turn, enhances the reliability and safety of our distribution and transmission system while better serving our customers. Vectren South recognizes its responsibility to address aging assets proactively, reduce unplanned outages, and prevent degradations of service for our customers. In addition, the Vectren South TDSIC Plan includes benefits such as enabling integration of other new technologies. supporting enhanced reliability and safety, and positioning Vectren South to respond

efficiently to the dynamic needs of its evolving electric system, all of which result in a safer, reliable and more resilient system for its customers.

The State of Indiana, too, recognizes these needs, having enacted Senate Bill 560¹ ("SB560"), in 2013. This law encourages investment in the electric grid by providing ratemaking provisions that facilitate the recovery of costs for projects related to safety, reliability, modernization, and economic development. Indiana, and Vectren South, recognizes the safety and reliability risks inherent in an aging distribution and transmission system. As we consider a future likely to include increasing amounts of solar generation, energy storage capabilities, electric vehicles, and other similar technologies, Vectren South realizes that its customers will expect the electric grid to accommodate their use of those new technologies. The upgrades necessary to create such a grid bring with them a host of new technical, security and safety challenges. Vectren South's TDSIC Plan is twofold – focusing on both modernization and flexibility while maintaining the safety and reliability that Vectren South's customers have come to expect.

# Q. Please describe the TDSIC Plan that Vectren South is presenting for approval in this proceeding.

A. Petitioner's Exhibit No. 2, Attachment LKW-1 is the TDSIC Plan Vectren South presents for approval. Vectren South's TDSIC Plan focuses on Transmission and Distribution ("T&D") system investments that enhance system reliability, reduce system risk, improve customer experience, and optimize the electric grid to accept new technology. In this TDSIC Plan, transmission system investments improve that part of the electric system operating at 69kV and higher, and distribution system investments improve that part of the electric system operating below that voltage – the part of the system that brings power directly to the homes and businesses of Vectren South customers. The TDSIC Plan's programs are categorized as reliability-focused or modernization-focused. However, there are modernization benefits to many of the reliability-focused programs, and reliability benefits to many of the modernization-focused programs. The programs include the projects that comprise the TDSIC Plan. Vectren South has looked carefully at the specific benefits of these projects to ensure continued reliability of the system

<sup>1</sup> Indiana Code Chapter 8-1-39 ("TDSIC Statute").

used to serve its customers. Implementation of the TDSIC Plan should result in enhanced customer experience which we define to include improvements such as reduced numbers of unplanned outages, reduced duration of unplanned outages, and improved overall system reliability and resilience. Customers rely on the electric service we provide, and we are committed to improving that service and preparing for the new demands that modern technologies will require of that service.

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### Q. Please explain the reliability and modernization aspects of the TDSIC Plan.

Within the reliability programs, Vectren South proposes to add new lines and equipment and upgrade existing T&D infrastructure to maintain system performance and enhance system response to unplanned events. Vectren South targets specific T&D assets at, or nearing the end of their useful lives with new or rebuilt elements to reduce risks of failure and minimize costly impacts to reliability, performance, and safety. Reliability of service is an expectation shared by Vectren South and its customers. These programs and projects serve the primary purpose of improved system performance.

The modernization programs add T&D infrastructure to enhance system control, real time monitoring, and response to facilitate system performance, reduce outage duration and improve the overall customer experience.

Many of Vectren South's T&D projects incorporate the latest technology to enhance functionality or asset performance and ensure asset and system reliability. For example, the primary purpose of a substation transformer replacement is to maintain reliability (i.e., reduced risk of failure); modern substation transformers are constructed using the latest technology (e.g. 65°C insulating paper, improved quality due to better manufacturing practices and improved core material), which, in addition to reducing risks of failure also maximizes performance.

Grid modernization is a key aspect of Vectren South's overall modernization strategy. A modernized grid will position Vectren South to better meet its customers' future energy needs by ensuring electric reliability and providing a flexible, resilient, secure, sustainable and adaptable platform for Distributed Energy Resources ("DER") integration and other consumer benefits.

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### Q. Does your testimony detail each of the listed programs?

A. Yes. Vectren South has prepared a description of each program in the TDSIC Plan.
These descriptions are attached to my testimony as Petitioner's Exhibit No. 2,
Attachment LKW-2. Details related to Advanced Metering Infrastructure ("AMI") will be discussed in the testimonies of Vectren South witnesses Daniel C. Bugher and Andrew L. Trump.

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# Q. How are Vectren South's T&D projects categorized?

10 A. Vectren South categorizes projects as reliability or modernization depending on their 11 primary purpose. This approach is consistent with the language in SB560. Vectren 12 South would note that although a project may be categorized primarily as "reliability" or 13 "modernization", many projects benefit both.

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### Q. How did Vectren South develop the TDSIC Plan?

- A. Vectren South maintains a talented, highly trained group of employees who serve as subject matter experts ("SMEs") in Engineering, Field Operations, and System Operations. Vectren South challenged those employees to identify and prioritize potential programs and individual projects to meet the following identified goals:
  - Enhance customer experience and prepare for our customers' energy future;
  - Maintain and enhance system reliability; and
  - Manage our assets as good stewards of Vectren South's portion of the electric system.

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Following an internal review of the potential programs and projects identified by Vectren South's SMEs, Vectren South partnered with Black & Veatch ("B&V") to review internal assessments and prioritizations and identify additional programs and projects. In a joint effort, the potential programs were subjected to a screening process to validate that they met the requirements of SB560. This process ensured that each program met the eligibility criteria of new or replacement transmission, distribution, or storage utility projects and defined purposes such as safety, reliability, system modernization, or economic development. Further analysis and review ensured that Vectren South could provide necessary estimates and cost benefits. Lastly, Vectren South considered

1 whether each proposed program met criteria including sufficient detail, significant 2 benefit, non-duplicativity, and feasibility. If a program met all the preceding criteria, it 3 advanced to the TDSIC Plan. 4 5 For those discrete assets for which Vectren South had sufficient data, B&V facilitated 6 prioritization analyses using a tool called a Risk Model. This tool evaluates electric utility 7 assets for consequence and likelihood of failure. Vectren South focused on the assets 8 with an identified high likelihood of failure and high consequence of failure, integrating 9 strategies to protect those assets in the next refinement of TDSIC Plan programs. 10 Vectren South's SMEs then reviewed the output of the Risk Model to confirm validity. 11 Details related to the Risk Model will be discussed in Vectren South witness William D. 12 Williams' testimony. 13 14 For those programs that did not fit the Risk Model methodology (e.g. new installations, 15 non-discrete assets). Vectren South subject matter experts applied similar principles to 16 prioritize the projects considering risk reduction, enhanced public and system safety, and 17 improved reliability and customer experience. Examples of non-risk modeled programs include Distribution Automation, Substation Physical Security, and Mobile Asset Data 18 19 Collection. 20 21 Q. What programs identified in the TDSIC Plan were assessed through B&V's Risk 22 Model? 23 Α. Programs with assets that were identified through the Risk Model include: 24 Reliability Programs: 25 Transmission and Substation 26 Transmission Line Rebuilds 27 Transmission Line Looping 28 Substation Transformer Replacements • 29 Substation Circuit Breaker Replacements 30 Substation Battery System Replacements

Distribution

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Underground Cable Replacements and Looping

1		Underground Notwork Ungrades
		Underground Network Upgrades
2		4kV Conversions
3		12kV Circuit Rebuilds and Looping
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5	Q.	Having identified these projects through risk modeling, has Vectren South
6		grouped projects together to maximize efficiencies?
7	A.	Yes. There are productivity gains from reduced mobilization and demobilization of the
8		workforce when work is grouped together at the same location. There are advantages
9		from coordinating work to minimize planned outages and reduce customer interruptions.
10		Also, work packaged together based on asset dependencies reduces the duplication of
11		engineering work such as changing out a relay because of the need to engineer the
12		settings of a relay each time a circuit breaker or substation transformer is replaced.
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14	Q.	What programs identified in the TDSIC Plan were not assessed through B&V's
15		Risk Model?
16	A.	The following projects were not identified through the Risk Model.
17		Reliability Programs:
18		Transmission and Substation
19		East West Transmission Line
20		Geomagnetic Disturbance Protection
21		Instrument Transformer Replacements
22		Mobile Asset Data Collection
23		Substation Arrester Replacements
24		<ul> <li>Substation Physical Security Upgrades</li> </ul>
25		System Protection Relay Upgrades
26		Transmission Capacitor Replacements
27		
28		Distribution
29		Distribution Capacitor Replacements
30		Underslung Replacements
31		Wood Pole Replacements
32		PCB Transformer Replacements
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1 Modernization Programs: 2 Transmission and Substation 3 **Optical Ground Wire** 4 Supervisory Control and Data Acquisition Upgrades 5 6 Distribution 7 **Distribution Automation** 8 Advanced Metering Infrastructure 9 Advanced Distribution Management System 10 11 Q. Why were these programs not prioritized through B&V's Risk Model? 12 Α. As witness Williams explains in detail, B&V's Risk Model gathers information from 13 Vectren South's system to evaluate the likelihood of failure. Several of the assets were 14 not risk modeled due to small sample sizes or insufficient data to appropriately model 15 the risk. Other projects are investments in new technology, and, while important to 16 reliability, are not replacements for infrastructure that might fail and therefore cannot be 17 modeled. 18 19 Q. How did Vectren South identify programs that were not evaluated through B&V's Risk Model? 20 21 Α. Vectren South's subject matter experts (Engineers, Planners, Field Operations, System 22 Operations) identified and challenged programs based on criteria such as historic 23 strengths and weaknesses of Vectren South's electric system, latest technologies, 24 needed system upgrades, preventative maintenance and understanding of how industry 25 advancements can enhance customer experience. 26 27 For example, the East West Transmission Line Program was identified through our 2016 28 Integrated Resource Plan. The installation of the electric line will be needed with the 29 planned 2024 retirement of the existing generating units at Vectren South's A.B. Brown 30 Power Plant coupled with Vectren South's plans to exit the joint operation of Warrick Unit 31 4 (currently co-operating with Alcoa) by 2020. The AMI Program rationale is explained 32 in witness Bugher's testimony.

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- Q. Are any TDSIC Plan investments and costs currently reflected in Vectren South's
   rate base in its most recent base rate proceeding?
- 3 A. No.

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- 5 Q. What information is presented in <u>Petitioner's Exhibit No. 2</u>, Attachment LKW-1 as the TDSIC Plan?
- 7 A. The TDSIC Plan provides a brief project description, the anticipated year of construction,
  8 the estimated cost, the location of the project and the program. As Vectren South
  9 implements the TDSIC Plan, this exhibit will be updated annually to identify changes to
  10 projects such as timing or cost.

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- 12 Q. Are there projects for which discrete locations can't be identified?
- 13 A. Yes. For some of the programs, Vectren South cannot identify specific project locations 14 by year. These programs are the Wood Pole Replacements Program, Substation 15 Battery System Replacements Program and Geomagnetic Disturbance Protection 16 ("GMD") Program.

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- Q. Why can't Vectren South identify specific locations for these projects?
- A. These programs do not have specific locations because they are intended to inspect and replace equipment that is found to be faulty; therefore, these programs focus on inspection and replacement of a certain number of assets each year. Although Vectren South cannot identify which specific assets might be replaced until inspections have been completed, we have provided detail about the anticipated replacement level.

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Vectren South has provided a replacement budget that was developed based on the likelihood of the inspection finding failure of particular equipment. Similarly, Vectren South will engage in ongoing review of GMD standards and monitoring results to determine if a change in potential GMD protection is necessary. Detailed information on the programs can be found in Petitioner's Exhibit No. 2, Attachment LKW-2.

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- Q. Does the TDSIC Plan include both capital costs and operation and maintenance ("O&M") expense?
- 33 A. No. This plan includes only capital costs.

#### Q. What is the estimated cost of the TDSIC Plan?

A. The estimated cost of the TDSIC Plan is approximately \$514 million.

A.

# 5 Q. Has Vectren South included projects in the TDSIC Plan that are not included in the estimated cost?

Yes. Vectren South has developed a detailed TDSIC Plan that identifies specific projects with a strategy to complete those projects in specific years. However, Vectren South considers flexibility to be an essential component of the TDSIC Plan, to stay responsive to changing risks and circumstances and to maximize the value of investments Vectren South is making. Vectren South plans to evaluate and, as circumstances warrant, re-prioritize our proposed projects each year, and, as required by the TDSIC Statute, update the TDSIC Plan annually to reflect that. Projects may shift to different years as Vectren South assesses risks and reprioritizes investments and system needs. Particularly in the later years of the TDSIC Plan, Vectren South may decide to delay a project beyond the seven-year period of the TDSIC Plan and replace it with another project from its list of potential substitution projects designated in the TDSIC Plan. These potential substitution projects may be selected for implementation as an outcome of Vectren South's continuous evaluation of system conditions and risks.

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### Q. Please describe the type of projects listed as potential substitution projects.

B&V's Risk Model output and Vectren South's subject matter experts identified numerous assets that had a similar risk score (i.e. high consequence/likelihood of failure). Most of those high risk score assets were identified as projects for the TDSIC Plan. Although the assets and projects were prioritized on the best available data, there is the potential for other similar high risk score assets to fail at or near the same time. Therefore, the potential substitution projects were developed for the other high risk assets that were not part of projects scheduled in the seven year plan.

These potential substitution projects could be used to substitute high risk score assets into the TDSIC Plan if the associated asset were to fail or conditions indicate the substitution project should be re-prioritized ahead of the projects scheduled for completion during the seven-year period. System changes that cause an increase in

consequence or likelihood of failure for a specific asset may result in the reprioritization of that asset. The projects in this list were subjected to the same engineering and estimation process as the projects in the TDSIC Plan. Vectren South witness Steven A. Hoover describes in detail the methodology used to estimate the costs of these projects.

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#### Q. Are the substitution projects aligned with specific projects in the TDSIC Plan?

A. No. The potential substitution projects would be incorporated into the TDSIC Plan based upon their increased risk relative to other scheduled TDSIC Plan projects that may be rescheduled or rotated out of the seven-year period as part of Vectren South's annual evaluation and reprioritization review.

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# Q. How will Vectren South decide whether a potential substitution project needs to be substituted for another project?

A. If there is a failure or an increased risk of failure to an asset, a potential substitution project may be selected in lieu of a project scheduled to be completed during the seven year period of the TDSIC Plan. The increased risk may be identified through inspections or degradation of performance or as part of the reprioritization resulting from the required annual reviews and updates of the TDSIC Plan.

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# Q. Will the potential substitution projects be a dollar-for-dollar match of the project it is substituted for?

A. No. Every project has a unique cost, and it is unlikely that a potential substitution project will have the same estimated cost as the project it is replacing.

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# Q. Will the potential substitution projects necessarily increase the cost of the TDSIC Plan?

A. No. Vectren South will attempt to reprioritize the TDSIC Plan so that the investment in a given year and for the overall Plan remains consistent with this filing. Foremost in Vectren South's analysis and planning was maintaining system reliability, safety and resilience during the TDSIC Plan. Vectren South will continue to assess risks and reprioritize projects and programs during the TDSIC Plan, as circumstances require reprioritization. Flexibility remains an essential component of Vectren South's TDSIC Plan, so that the TDSIC Plan is responsive to identified needs and can provide the

benefits that Vectren South and its customers require. These projects have been identified and cost estimated such that they could be placed in the seven-year period of the TDSIC Plan but for the current assessment that the timing of asset replacement can fall outside the seven-year period. If that assessment changes, the projects move into an "active" status ahead of other projects currently selected to be performed in a given TDSIC Plan year. As eligible projects to be included as needed, the substitution projects should be considered to be a part of the TDSIC Plan.

# Q. Will Vectren South make additional investments to its T&D system that are not included in the TDSIC Plan?

A. Yes. Vectren South anticipates that investments related to new business and public improvement projects, storm restoration, public facility damages and other needs will continue to be made outside this TDSIC Plan. These activities include new T&D infrastructure extensions and locations and the installation of new customer service lines.

#### III. <u>BENEFITS</u>

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#### Q. What are the benefits of the TDSIC Plan?

As discussed above, Vectren South categorizes it programs as reliability or modernization depending on their primary purpose. Some of the key reliability benefits include reduction in number and duration of unplanned outages, as well as overall improvements to system reliability through the replacement of aging, poor-performing assets, and enhanced abilities to monitor real time system performance. Vectren South understands the cost effectiveness and value of replacing aging and poorly performing assets before they fail. Planned work creates fewer customer disruptions and reduces after-hours work and emergency work. Preventative work can also be conducted in a planned manner that represents a safer approach for employees and general public.

Vectren South also recognizes the importance of system protection components, which protect electric facilities, employees, and customers, and reduces system fault impacts to power quality for our customers. All of these programs are designed to strengthen

Vectren South's system and prepare the system to meet customers' future expectations for interconnections, including, for example, solar power interconnections. These reliability and modernization programs prepare Vectren South to be compliant with evolving North American Electric Reliability Corporation ("NERC") Standards, many of which are under development.

Key modernization programs' benefits include improved system ability to serve customers even during times of high system stress, faster location identification and isolation of customer interruptions and outages, improved accuracy with estimated restoration times and faster outage restoration, all of which add up to increased system resiliency and overall improved customer experience. A more resilient system maintains service to customers even when some system components fail.

#### Q. Are these benefits incremental?

A. Yes. Each project and each program completed in Vectren South's TDSIC Plan will bring customers enhanced system reliability, safety, resilience, and modernization.

#### Q. Do the incremental benefits justify the costs of the TDSIC Plan?

A. Yes. Vectren South's TDSIC Plan is justified by an overall risk reduction of 40% as discussed in detail in witness Williams' testimony. When evaluating TDSIC Plan benefits, those benefits must be correlated against customer needs and the risks of degradation of the system if those investments are not made. This TDSIC Plan is prudent, and its benefits exceed its costs and reduce system risks, which enhances the overall safety and reliability of the electric grid.

There is a separate cost benefit evaluation for AMI and the program details related to AMI will be discussed in witness Bugher's and Trump's testimonies.

#### Q. How are the public convenience and necessity furthered by the TDSIC Plan?

A. This TDSIC Plan directly enhances system reliability and system resilience, public safety and employee safety and overall quality of service for Vectren South customers. It ensures that Vectren South's electric infrastructure continues to perform in the safe, efficient and reliable manner that our customers rely upon. Vectren South's existing

assets and equipment have served our customers reliably and safely. But, Vectren South recognizes that reliability and safety are dynamic aspects of its system, and that Vectren South must always work and think ahead to continue to meet reliability and safety expectations. These TDSIC Plan programs and system enhancements maintain and assure future reliability, safety and system resilience. For all of these reasons, this TDSIC Plan serves public convenience and necessity, and the programs and projects described in the TDSIC Plan must be implemented.

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# 10 IV. <u>CONCLUSION</u>

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- 12 Q. Does this conclude your direct testimony?
- 13 A. Yes.

# **VERIFICATION**

I, Lynnae K. Wilson, Vice President of Energy Delivery for Vectren Utility Holdings, Inc., under penalty of perjury, affirm that the foregoing representations are true and correct to the best of my knowledge, information and belief.

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY D/B/A VECTREN ENERGY DELIVERY OF INDIANA, INC.

By:

Lynnae K. Wilson

Vice President, Energy Delivery

Dated: February 22, 2017

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
12925298	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	Relocate over head single phase for access and reliability	2017		
13089512	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Marx Road circuit upgrade	2017		
13311296	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Kasson circuit rebuild along Redbank Phase I	2017		
13501927	Stendel	12kV Circuit Rebuilds and Looping	Electric Distribution	STENDAL circuit 3PH replace copper Phase I	2017		
13611078	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Kasson circuit Rebuild along Redbank Phase II	2017		
13716643	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Foundation circuit Load Balance	2017		
13736610	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Rustin circuit-Dbl circuit out of VIP SubSta	2017		
14008835	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Castle 1 reconductor- between Vann Rd and Oak Grove Rd	2017		
14025986	Winslow	12kV Circuit Rebuilds and Looping	Electric Distribution	Replacement ACE Sectionalizer At Blackfoot	2017		
14097073	Winslow	12kV Circuit Rebuilds and Looping	Electric Distribution	Winslow circuit upgrade to Support Glezen Load	2017		
13498600	Evansville	4kV Conversions	Electric Distribution	Parrett St circuit CONV (Mulberry Sub) PH I	2017		
13498646	Evansville	4kV Conversions	Electric Distribution	Parrett St circuit CONV (Mulberry Sub) Ph II	2017		
13500637	Evansville	4kV Conversions	Electric Distribution	Seventh Ave 4kv circuit CONV (Pigeon Creek Sub) PH I	2017		
13501790	Evansville	4kV Conversions	Electric Distribution	Delaware Pump circuit CONV (Pigeon Creek Sub)	2017		
13693734	Evansville	4kV Conversions	Electric Distribution	Cass Ave circuit CONV (Riverside Sub) Ph I	2017		
13710800	Evansville	4kV Conversions	Electric Distribution	Seventh Ave 4kv circuit CONV (Pigeon Creek Sub) PH II	2017		
13817172	Evansville	4kV Conversions	Electric Distribution	Parrett St circuit CONV (Mulberry Sub) Ph III	2017		
13819501	Evansville	4kV Conversions	Electric Distribution	Park St circuit CONV (Pigeon Creek Sub) Ph	2017		
13963395	Evansville	4kV Conversions	Electric Distribution	Park St circuit CONV (Pigeon Creek Sub) Ph II	2017		
13993909	Evansville	Distribution Automation	Electric Distribution	2017- Distribution Automation #1 - Redbank and Hogue circuit	2017		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13996900	Evansville	Distribution Automation	Electric Distribution	2017 Distribution Automation #2- Peerless Rd - Rosenberger and McDowell Rd	2017		
13498513	Ft. Branch	Distribution Capacitor Replacements	Electric Distribution	DOUGLAS ST circuit - capacitor upgrade	2017		
13501028	Newburgh	Distribution Capacitor Replacements	Electric Distribution	Heritage circuit- capacitor upgrade	2017		
13501943	Evansville	Distribution Capacitor Replacements	Electric Distribution	Wadesville circuit - capacitor upgrade	2017		
13503772	Ft. Branch	Distribution Capacitor Replacements	Electric Distribution	MONTGOMERY circuit -capacitor upgrade	2017		
13504194	Ft. Branch	Distribution Capacitor Replacements	Electric Distribution	Heston circuit- capacitor upgrade	2017		
13509122	Ft. Branch	Distribution Capacitor Replacements	Electric Distribution	Princeton Farms circuit-capacitor upgrade	2017		
13509335	Ft. Branch	Distribution Capacitor Replacements	Electric Distribution	FORT BRANCH circuit - capacitor upgrade	2017		
13509340	Ft. Branch	Distribution Capacitor Replacements	Electric Distribution	King 1 circuit- capacitor upgrade	2017		
13970288	Evansville	Instrument Transformer Replacements	Electric Transmission Substation	Northeast PT replacements	2017		
14296722	Evansville	Instrument Transformer Replacements	Electric Transmission Substation	AB Brown Bus PT Replacements	2017		
13626457	Newburgh		Electric Transmission	OPGW - Pelzer to FB Culley (Y56_Z81) 5.0 mi.	2017		
13626466	Rockport	Optical Ground Wire	Electric Transmission	OPGW - Chrisney to Newtonville (Y56) 9.0 mi.	2017		
14039153	Evansville	Optical Ground Wire	Electric Transmission	OPGW - Bergdolt to NW (Z83_Z95) 8.36mi.	2017		
14039189	Evansville	Optical Ground Wire	Electric Transmission	OPGW - NW to Brown (Z95-Z96) 12.6mi.	2017		
14156983	Various	PCB Transformer Replacements	Electric Distribution	PCB transformers replacement-2017	2017		
14080673	Mt. Vernon	Substation Arrester Replacements	Electric Distribution Substation	Replace arresters: COUNTY LINE- transformer high and low side-Porcelain- Brown	2017		
13684766	Evansville	Substation Battery System Replacements	Electric Transmission Substation	Battery replacement	2017		
13970636	Evansville	Substation Battery System Replacements	Electric Distribution Substation	Charger Replacement	2017		
13625683	Newburgh	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE CULLEY 138KV OCB 2488 2588 2899	2017		
13626363	Ft. Branch	Substation Circuit Breaker Replacements	Electric Distribution Substation	Kings Sub ABS 177 277 and 500 replacement	2017		
14035126	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	MOUNT VERNON MAIN 188 - 4859636	2017		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13684712	Winslow	Substation Transformer Replacements	Electric Distribution Substation	Winslow Sub and Transformer upgrade (20 MVA)	2017		
13625674	Evansville	Supervisory Control and Data Acquisition Upgrades	Electric Transmission Substation	AB Brown GT #1 RTU C_O	2017		
13625698	Dale	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Distribution SCADA - Dale	2017		
13626389	Mt. Vernon	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Distribution SCADA - NEW HARM	2017		
13626414	Mt. Vernon	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Distribution SCADA - Point Dist.	2017		
13684707	Winslow	Supervisory Control and Data Acquisition Upgrades	Electric Transmission Substation	Winslow RTU C_O	2017		
14028921	Boonville	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Distribution SCADA - Vigo	2017		
14039012	Newburgh	Supervisory Control and Data Acquisition Upgrades	Electric Transmission Substation	Microwave Tower Upgrades	2017		
14039035	Newburgh	Supervisory Control and Data Acquisition Upgrades	Electric Transmission Substation	Microwave Replace (Wagner-Yankeetown)	2017		
13625680	Newburgh	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- Culley Z82-1 and Isolation	2017		
13626298	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	AutoSect - Devon Y51- 2	2017		
13626322	Holland	System Protection Relay Upgrades	Electric Transmission Substation	Relay PLC-Fiber CONV- Dubois Z84-2	2017		
13626324	Holland	System Protection Relay Upgrades	Electric Transmission Substation	Relay PLC-Fiber CONV- Duff Z84-2	2017		
13626361	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	Relay replacement- Green Oaks 5 circuits + Arc Flash	2017		
13626362	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay PLC-Fiber CONV- Heidelbach Z91-2	2017		
13626365	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	Relay replacement- Louis Allis all 4 circuits	2017		
13626410	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	NE Sub 138kV 69kV Transfer Bus	2017		
13626412	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay PLC-Fbr CONV Pigeon Creek Z91-2	2017		
13626415	Holland	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- St Henry capacitor Bank	2017		
14038915	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	AutoSect - Sunbeam Y52	2017		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13626513	Boonville	Transmission Line Rebuilds	Electric Transmission	Y56 Pelzer to Midway rebuild (6.4 miles) (Incl w_OPGW plan)	2017		
13626514	Boonville	Transmission Line Rebuilds	Electric Transmission	Y56 Midway to Chrisney rebuild (7.6 miles) (Incl w_OPGW plan)	2017		
13202730	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Lakeside Terrace Cable replacement Phase B	2017		
13213619	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Lakeside Terrace Cable replacement Phase C	2017		
13297500	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Echo Apts underground Phase 1 cable replacement	2017		
13299935	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Cross Pointe Phase 1 Rebuild for Capacity	2017		
13381396	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Kahre Lake Cable replacement Phase 4	2017		
13381417	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Kahre Lake Cable replace Phase 5	2017		
13503232	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Carroll Acres Rosewood Ave	2017		
13592379	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Cross Pointe Phase 3 Rebuild for Capacity	2017		
13616999	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Christmas Lake Phase 6	2017		
13680226	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWG PMH-11	2017		
13810742	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Country Club Est Cable REPL Phase I	2017		
13832686	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Broadview SUBD Cable REPL Phase 3	2017		
13834258	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Echo Hills	2017		
13886071	Rockport	Underground Cable Replacements and Looping	Electric Distribution	High Street Urd Replace	2017		
13990093	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Lenn Road-URD replacement	2017		

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13992940	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replacement in Christmas Lake Phase 8	2017		
14029627	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Eastland Mall Urd replacement	2017		
14050339	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Eastland Mall underground Additional Loop	2017		
14059110	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Relo 1PH OH to underground	2017		
14352342	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Kahre Lake cable replacement Phase 3	2017		
14364806	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Hedden Road cable replacement	2017		
14380687	Evansville	Underground Network Upgrades	Electric Distribution	Replacement of network transformer CM-22 3000A IBT	2017		
13795063	Evansville	Underground Network Upgrades	Electric Distribution	Repl Net Trans CM- 22 3000A Station N1	2017		
14041755	Evansville	Underground Network Upgrades	Electric Distribution	Chestnut circuit Tie w. Mulberry Network and Court Street	2017		
13501261	Evansville	Underslung Replacements	Electric Distribution	convert d1320 to a GOAB - LAWNDALE- ELLENWOOD 2	2017		
13501789	Evansville	Underslung Replacements	Electric Distribution	convert d1451 to a GOAB-McDOWELL RD- PEERLESS RD	2017		
13501829	Evansville	Underslung Replacements	Electric Distribution	convert d1513 to a GOAB - PARKLAWN- THOMPSON AVE	2017		
13501831	Evansville	Underslung Replacements	Electric Distribution	convert d1828 to a GOAB - PEERLESS RD- MARX RD	2017		
13501838	Evansville	Underslung Replacements	Electric Distribution	convert d1332 to a GOAB - POLLACK AVE- GREENCOVE	2017		
13501873	Evansville	Underslung Replacements	Electric Distribution	convert d1868 to a GOAB-RIVERSIDE DR- LODGE AVE	2017		
13501940	Newburgh	Underslung Replacements	Electric Distribution	convert d1707 to a GOAB - VANADA- HATFIELD	2017		
13501942	Evansville	Underslung Replacements	Electric Distribution	convert d1545 to a GOAB - VILLA DRIVE- ROTHERWOOD	2017		
14159372	Various	Wood Pole Replacements	Electric Distribution	2017 wood pole replacements	2017		
13501030	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Along 2125 Lexington Rd-3Phase circuit Tie	2018		
13501073	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3 Phase circuit Tie along Middle Mt Vernon	2018		

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13501118	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3Phase circuit Tie Boehne Camp Road	2018		
13501225	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3Phase circuit Tie along Hedt Lane to the West	2018		
13501857	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3Phase circuit Tie along Dixie Flyer Rd	2018		
13501864	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3Phase circuit Tie along Redbank Road	2018		
13501870	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	RED BANK circuit 3PH replace copper conductor	2018		
13501934	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3Ph Tie between Union Twp. Marrs McDowell	2018		
13505894	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3Phase circuit Tie along St Joseph Rd	2018		
13505929	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	ROSE HILL circuit 3PH replace copper conductor	2018		
13505932	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	3884 Cameron Dr - Move OH line to Rd	2018		
13505939	Stendel	12kV Circuit Rebuilds and Looping	Electric Distribution	STENDAL circuit 3PH replace copper Phase	2018		
13505961	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	TENNYSON circuit 3PH replace copper Phase I	2018		
13505987	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3PH circuit Tie along Seminary Road	2018		
13614701	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Lawndale and Greencove Ckt Tie upgrade	2018		
13617418	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Lodge Ave and Riverside Dr circuit Tie upgrade	2018		
13703553	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Hwy 662 circuit and Lockwood Ln circuit Tie upgrade	2018		
13801510	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Springfield_Marrs 3PH circuit Tie-McKinnies Rd Ph II	2018		
13882393	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Springfield_Marrs 3PH circuit Tie-McKinnies Rd Ph I	2018		
13505818	Evansville	4kV Conversions	Electric Distribution	South Weinbach Ave circuit Conv (Ellenwood Sub)	2018		
13745088	Evansville	4kV Conversions	Electric Distribution	Cass Ave circuit CONV (Riverside Sub) Ph II	2018		
13756449	Evansville	4kV Conversions	Electric Distribution	North Weinbach Ave circuit Conv (Ellenwood Sub) Phase 2	2018		
13971295	Evansville	4kV Conversions	Electric Distribution	Cass Ave circuit CONV (Riverside Sub) Ph III	2018		
14029024	Evansville	4kV Conversions	Electric Distribution	Washington Ave circuit Conversion (Ellenwood Sub) Ph I	2018		

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14029069	Evansville	4kV Conversions	Electric Distribution	Washington Ave circuit Conversion (Ellenwood Sub) Ph II	2018		
14145309	Evansville	4kV Conversions	Electric Distribution	First Ave & Igleheart circuit CONV (Igleheart Sub) Ph I	2018		
13997001	Evansville	Distribution Automation	Electric Distribution	2018- Distribution Automation #1- Ellenwood 2 and Stockwell circuits	2018		
13997031	Evansville	Distribution Automation	Electric Distribution	2018- Distribution Automation #2- Kratzville and Saint Joseph Ave circuits	2018		
13997067	Mt. Vernon	Distribution Automation	Electric Distribution	2018-Distribution Automation #3-Ford Rd and Copperline Rd circuits	2018		
13501832	Evansville	Distribution Capacitor Replacements	Electric Distribution	Peerless Road circuit - capacitor upgrade	2018		
13501925	Stendel	Distribution Capacitor Replacements	Electric Distribution	Stendal circuit - capacitor upgrade	2018		
13505837	Evansville	Distribution Capacitor Replacements	Electric Distribution	Kasson circuit - capacitor upgrade	2018		
13505900	Evansville	Distribution Capacitor Replacements	Electric Distribution	Old State Road circuit - capacitor upgrade	2018		
13505928	Rockport	Distribution Capacitor Replacements	Electric Distribution	Rose Hill circuit - capacitor upgrade	2018		
13505937	Mt. Vernon	Distribution Capacitor Replacements	Electric Distribution	Springfield circuit - capacitor upgrade	2018		
13505960	Rockport	Distribution Capacitor Replacements	Electric Distribution	Tennyson circuit - capacitor upgrade	2018		
13505994	Evansville	Distribution Capacitor Replacements	Electric Distribution	Union Township circuit- capacitor upgrade	2018		
13506037	Winslow	Distribution Capacitor Replacements	Electric Distribution	Winslow circuit - capacitor upgrade	2018		
13684740	Newburgh	Instrument Transformer Replacements	Electric Transmission Substation	Culley PT replacements	2018		
13970317	Evansville	Instrument Transformer Replacements	Electric Transmission Substation	Northwest PT replacements	2018		
14035346	Haubstadt	Optical Ground Wire	Electric Transmission	OPGW - St Wendell to Scott Twp. (Y34) 5.6mi	2018		
14035349	Evansville	Optical Ground Wire	Electric Transmission	OPGW - Stringtown to Mohr (Y50_Y34) 3.6 mi	2018		
14039124	Santa Clause	,	Electric Transmission	Santa Claus to Newtonville OPGW Addition (11.9 miles)	2018		
14155363	Various	PCB Transformer Replacements	Electric Distribution	PCB transformers replacement-2018	2018		
14080654	Mt. Vernon	Substation Arrester Replacements	Electric Transmission Substation	Replace arresters: BENTON CORNER- transformer highside	2018		

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14080676	Mt. Vernon	Substation Arrester Replacements	Electric Transmission Substation	Replace arresters: MT VERNON MAIN-NW 177-Porcelain-Brown	2018		
14034372	Evansville	Substation Battery System Replacements	Electric Distribution Substation	Charger Replacement	2018		
13626328	Rockport	Substation Circuit Breaker Replacements	Electric Distribution Substation	replacement of GRANDVIEW 12kV circuit Breaker 1	2018		
13626331	Rockport	Substation Circuit Breaker Replacements	Electric Distribution Substation	replacement of GRANDVIEW 12kV circuit Breaker 2	2018		
14034482	Newburgh	Substation Circuit Breaker Replacements	Electric Transmission Substation	Replace Culley 138KV OCB 2288	2018		
14034982	Ft. Branch	Substation Circuit Breaker Replacements	Electric Distribution Substation	FORT BRANCH RURAL 188 - 4858829	2018		
14035033	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	GRANDVIEW 1288 - 4852156	2018		
14038891	Rockport	Substation Circuit Breaker Replacements	Electric Distribution Substation	ROCKPORT 188 - 4859686	2018		
14038892	Rockport	Substation Circuit Breaker Replacements	Electric Distribution Substation	ROCKPORT 288 - 4859685	2018		
14285447	Newburgh	Substation Circuit Breaker Replacements	Electric Distribution Substation	GRIMM ROAD 2299 and 2199	2018		
13684690	Rockport	Substation Transformer Replacements	Electric Transmission Substation	Grandview Sub 138_69 Transformer Upgrade (60 to 100 MVA)	2018		
14034985	Ft. Branch	Substation Transformer Replacements	Electric Distribution Substation	FORT BRANCH RURAL T2 - 5217850	2018		
14035034	Rockport	Substation Transformer Replacements	Electric Distribution Substation	Replacement of GRANDVIEW Dist. SUBSTA Distribution TRF	2018		
14038906	Dale	Substation Transformer Replacements	Electric Distribution Substation	Replacement of SAINT MEINRAD Dist. SUBSTA TRF	2018		
13626439	Dale	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Distribution SCADA - St Meinrad	2018		
13622101	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay PLC-Fiber CONV- Bergdolt Z83-2	2018		
13625673	Mt. Vernon	System Protection Relay Upgrades	Electric Transmission Substation	Relay PLC-Fiber CONV- AB Brown Z95	2018		
13626409	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay PLC-Fiber CONV- NE Z95	2018		
13626411	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay PLC-Fiber CONV- NW Z83-2	2018		
14034433	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- Azteca 188 and 288	2018		
14034436	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	Relay replacement Berry T1 and T2 MSOC	2018		
14034440	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	Relay replacement Berry 2-6 3-6 4-6	2018		

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14034454	Winslow	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- Cato Z84-3 Y39	2018		
14034903	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	Fairlawn 12kV PROT- CONTR upgrade	2018		
14034951	Mt. Vernon	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement Farm Bureau T1 and T2 MSOC	2018		
14034952	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- Folz Y34 Y50-2 Y50-3	2018		
14034990	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement Fuquay188 288	2018		
14035030	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement Gateway T2 and T1 MSOC	2018		
14039125	Evansville	Transmission Line Rebuilds	Electric Transmission	Y76 Phase I-NW- County Line 6 miles w/ OPGW	2018		
13503231	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Broadview SUBD Cable replace Phase 2	2018		
13503234	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Carrolton Court Phase I	2018		
13506040	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in BRENTWOOD	2018		
13506049	Boonville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Cambridge Acres	2018		
13506072	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Create 1PH underground Loop on Clover circuit	2018		
13506075	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Dale Haven Estates Ph I	2018		
13506079	Rockport	Underground Cable Replacements and Looping	Electric Distribution	Hodges SUBD Hwy 161 Richland City	2018		
13506089	Rockport	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Reo Heights Sub	2018		
13506115	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Shady Hills	2018		
13506116	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	7000' of 1PH underground to back feed Artesian Well	2018		
13616706	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Christmas Lake Phase 5	2018		
13680220	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2018		

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13685494	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable REPL in Christmas Lake Phase 1	2018		
13703453	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR	2018		
13703493	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2018		
13703502	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2018		
13703516	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR Unknown	2018		
13707745	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Sugar Mill Creek Apt Phase I - Cable Repl	2018		
13736393	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable REPL in Christmas Lake Phase 4	2018		
13784804	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable REPL in Village Green Apartments Ph I	2018		
13801539	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Meadowood Apts Cable Replacement	2018		
13827303	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable REPL in Village Green Apartments Ph II	2018		
13887331	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Lakeview Place Cable REPL	2018		
13503439	Evansville	Underground Network Upgrades	Electric Distribution	Replace Civic circuits 1 2 3 underground Phase I	2018		
13503442	Evansville	Underground Network Upgrades	Electric Distribution	Replace Mulberry circuits 1 2 3 underground Phase I	2018		
13506053	Evansville	Underground Network Upgrades	Electric Distribution	Replace Net Trans CM-22 City-County Building Civic 2	2018		
13614242	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 3000A Station N2	2018		
13505842	Evansville	Underslung Replacements	Electric Distribution	convert d1412 to a GOAB-KRATZVILLE RD- N PARK	2018		
13505851	Evansville	Underslung Replacements	Electric Distribution	convert d1292 to a GOAB - LODGE AVE- CULVERSON AVE	2018		
13505897	Evansville	Underslung Replacements	Electric Distribution	convert d1410 to a GOAB-NORTH PARK- KRATZVILLE RD	2018		

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13505959	Rockport	Underslung Replacements	Electric Distribution	convert d1755 to a GOAB - TENNYSON- FOLSOMVILLE	2018		
13506035	Mt. Vernon	Underslung Replacements	Electric Distribution	convert d1674 to a GOAB - WABASH- UNIONTOWN	2018		
14159676	Various	Wood Pole Replacements	Electric Distribution	2018 wood pole replacements	2018		
13501924	Stendel	12kV Circuit Rebuilds and Looping	Electric Distribution	Lake Helmrich Village SUBD - alt feed	2019		
13505896	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Red Geranium- Replace underground PRI	2019		
13506028	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Extend the Venetian circuit N.to Oak Grove Rd	2019		
13518825	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	BASELINE RD circuit 3PH replace copper conduit	2019		
13518876	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Relocate OH 1PH for accessibility	2019		
13518968	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	BRDWAY AVE circuit 3PH replace Copper Ph I	2019		
13519107	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Ford RD circuit and Union Township circuit Tie upgrade	2019		
13519141	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	3 PH circuit Tie between Marrs and Springfield circuit	2019		
13519148	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	MARX RD circuit 3PH replace copper PH I	2019		
13519162	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	STENDAL circuit 3PH replace copper PH III	2019		
13519166	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	TENNYSON circuit 3PH replace copper PH II	2019		
13519171	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	UNION TOWNSHIP circuit 3PH repl copper PH I	2019		
13519172	Winslow	12kV Circuit Rebuilds and Looping	Electric Distribution	WINSLOW circuit 3PH replace copper PH I	2019		
13500016	Mt. Vernon	4kV Conversions	Electric Distribution	East Main circuit CONV (Mt Vernon Main Sub) Ph II	2019		
13500051	Mt. Vernon	4kV Conversions	Electric Distribution	North Main circuit CONV (Mt Vernon Main Sub)	2019		
13500081	Mt. Vernon	4kV Conversions	Electric Distribution	Oil Refiner #2 circuit CONV (Mt Vernon Main)	2019		
13503767	Evansville	4kV Conversions	Electric Distribution	Bellemeade Ave circuit Conversion (Ellenwood Sub) PHI	2019		
13503768	Evansville	4kV Conversions	Electric Distribution	Bennighof Ave circuit Conversion (Auburn Sub) PHI	2019		
13505815	Evansville	4kV Conversions	Electric Distribution	Fares Ave circuit Conversion (Auburn Sub)	2019		

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13505816	Evansville	4kV Conversions	Electric Distribution	North Weinbach Ave circuit Conv (Ellenwood Sub) Phase 1	2019		
13519120	Evansville	4kV Conversions	Electric Distribution	Bayard Park circuit Conversion (Auburn Sub) PH I	2019		
13519136	Evansville	4kV Conversions	Electric Distribution	Cherry St circuit Conversion (Auburn Sub) PHI	2019		
13835752	Mt. Vernon	4kV Conversions	Electric Distribution	E560_Elec Dist_East Main circuit_4kV Conversions East Main circuit CONV (Mt Vernon Main Sub) Ph I	2019		
13997147	Evansville	4kV Conversions	Electric Distribution	Bayard Park circuit Conversion (Auburn Sub) PH II	2019		
13997149	Evansville	4kV Conversions	Electric Distribution	Bayard Park circuit Conversion (Auburn Sub) PH III	2019		
13997171	Evansville	4kV Conversions	Electric Distribution	Bennighof Ave circuit Conversion (Auburn Sub) PHII	2019		
13997237	Evansville	4kV Conversions	Electric Distribution	Cherry St circuit Conversion (Auburn Sub) PHII	2019		
14013043	Evansville	4kV Conversions	Electric Distribution	Bayard Park circuit Conversion (Auburn Sub) PH IV	2019		
14080650	Evansville	4kV Conversions	Electric Transmission Substation	New Adams 138_12 kV Substation	2019		
14153564	Evansville	4kV Conversions	Electric Distribution	First Ave & Igleheart circuit CONV (Igleheart Sub) Ph I	2019		
13997129	Evansville	Distribution Automation	Electric Distribution	2019-Distribution Automation #1- Division Street and Governor circuits	2019		
13997136	Evansville	Distribution Automation	Electric Distribution	2019-Distribution Automation #2-North Park and Concord circuits	2019		
13997168	Evansville	Distribution Automation	Electric Distribution	2019-Distribution Automation #3- Theater Drive and Lynch Rd circuits	2019		
13997201	Evansville	Distribution Automation	Electric Distribution	2019-Distribution Automation #4- MT Auburn and Barker circuits	2019		
13501017	Evansville	Distribution Capacitor Replacements	Electric Distribution	Ellenwood 2 circuit - capacitor upgrade	2019		
13501069	Evansville	Distribution Capacitor Replacements	Electric Distribution	Highland circuit - capacitor upgrade	2019		
13501226	Evansville	Distribution Capacitor Replacements	Electric Distribution	Kratzville Road circuit - capacitor upgrade	2019		
13501755	Evansville	Distribution Capacitor Replacements	Electric Distribution	McCutchanville circuit - capacitor upgrade	2019		
13501795	Evansville	Distribution Capacitor Replacements	Electric Distribution	McDowell Road circuit - capacitor upgrade	2019		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13501923	Evansville	Distribution Capacitor Replacements	Electric Distribution	St. Joseph AVE circuit - capacitor upgrade	2019		
13518801	Evansville	Distribution Capacitor Replacements	Electric Distribution	Barker AVE circuit - capacitor upgrade	2019		
13518826	Evansville	Distribution Capacitor Replacements	Electric Distribution	Baseline Road circuit - capacitor upgrade	2019		
13518986	Evansville	Distribution Capacitor Replacements	Electric Distribution	Broadway Ave circuit - capacitor upgrade	2019		
13519023	Evansville	Distribution Capacitor Replacements	Electric Distribution	Epworth circuit - capacitor upgrade	2019		
13519116	Evansville	Distribution Capacitor Replacements	Electric Distribution	HWY 57 circuit - capacitor upgrade	2019		
13519144	Evansville	Distribution Capacitor Replacements	Electric Distribution	Marx Road circuit - capacitor upgrade	2019		
13519167	Evansville	Distribution Capacitor Replacements	Electric Distribution	Theater Drive circuit - capacitor upgrade	2019		
14160813	Boonville	Distribution Capacitor Replacements	Electric Distribution	Bowling Alley circuit - capacitor upgrade	2019		
13970287	Rockport	Instrument Transformer Replacements	Electric Transmission Substation	Newtonville PT replacements	2019		
14080677	Mt. Vernon	Substation Arrester Replacements	Electric Distribution Substation	Replace arresters MT VERNON MAIN- transformer 2-lowside- Porcelain-Brown	2019		
14080678	Mt. Vernon	Substation Arrester Replacements	Electric Transmission Substation	Replace arresters: MT VERNON MAIN-T2 highside-Porcelain- Brown	2019		
13970637	Evansville	Substation Battery System Replacements	Electric Distribution Substation	Charger Replacement	2019		
13970642	Evansville	Substation Battery System Replacements	Electric Transmission Substation	Battery Replacement	2019		
13964171	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	BOONVILLE PIONEER 199 - 4842776	2019		
13965602	Boonville	Substation Circuit Breaker Replacements	Electric Transmission Substation	LYNNVILLE 377 - 4859148	2019		
13965603	Boonville	Substation Circuit Breaker Replacements	Electric Transmission Substation	LYNNVILLE 477 - 4859149	2019		
13965908	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	OHIO RIVER STATION 216 - 4859168	2019		
13970652	Evansville	Substation Physical Security Upgrades	Electric Transmission Substation	Northeast Substation	2019		
13965051	Evansville	Substation Transformer Replacements	Electric Distribution Substation	GREEN OAKS T2 - A5796	2019		
13965635	Evansville	Substation Transformer Replacements	Electric Distribution Substation	MODIFICATION T1 - A5419	2019		
13966191	Evansville	Substation Transformer Replacements	Electric Distribution Substation	SLAUGHTER AVENUE T2 - 9Z1079	2019		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13626466	Santa Clause	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Distribution SCADA - Chrisney	2019		
13684691	Rockport	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Distribution SCADA - Grandview	2019		
13964173	Boonville	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Boonville RTU C_O	2019		
13966092	Evansville	Supervisory Control and Data Acquisition Upgrades	Electric Transmission Substation	PPG RTU C_O	2019		
13625686	Newburgh	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- Culley Z81-1	2019		
13964351	Dale	System Protection Relay Upgrades	Electric Distribution Substation	Arc Flash Relay PROT Dale (SWGR)	2019		
13965407	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL-Heidelbach Y65	2019		
13965531	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPLHillsdale T2 and T1 MSOC	2019		
14034485	Newburgh	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement Culley 69kV Sub Transfer	2019		
14034549	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement East Ind.488	2019		
14034886	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement East Ind. T2 and T3 MSOC	2019		
14034891	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	Eastside 12kV PROT- CONTR upgrade	2019		
14034901	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement Eastland T1 188 288	2019		
14035074	Newburgh	System Protection Relay Upgrades	Electric Distribution Substation	Grimm Rd protection upgrade 288 388 488	2019		
14035125	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	AutoSect - Mohr Rd	2019		
14312138	Evansville	System Protection Relay Upgrades	Electric Transmission	Relay Replacement Ohio River Station 4400 4600 4700	2019		
13966088	Evansville	Transmission Capacitor Replacements	Electric Transmission Substation	Pigeon Creek capacitor Bank - Install 15.6 MVAR	2019		
13625628	Evansville	Transmission Line Looping	Electric Distribution Substation	Berry Plastic Sub MOD for Loop Feed	2019		
14035350	Evansville	Transmission Line Looping	Electric Transmission	Y43 Berry Plastics Sub Loop Feed (0.1 mi) (Incl w_OPGW plan)	2019		
14351119	Evansville	Transmission Line Looping	Electric Transmission	Z85 Loop to Adams Substation	2019		
13752001	Evansville	Transmission Line Rebuilds	Electric Transmission	Z85 Rebuild Heidelbach - Angel Mounds (6.7 mi) (Incl w_OPGW Plan)	2019		
14039128	Evansville	Transmission Line Rebuilds	Electric Transmission	Y76 Phase II-County Line to Wadesville 6.3 miles w/ OPGW	2019		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13381618	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Amber Ln-Ford Rd - Cable replace	2019		
13503235	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Christmas Lake Phase 2	2019		
13503369	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Dress SUBD	2019		
13503437	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Westhaven Hills	2019		
13506076	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Executive Manor Apts	2019		
13506078	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Greenbriar Hills Phase I	2019		
13519177	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Broadview SUBD Cable replace Phase 4	2019		
13519179	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable REPL in Carrolton Court Phase II	2019		
13519180	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Castle Lake Estates	2019		
13519181	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Christmas Lake Phase 3	2019		
13519196	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Lakeside Terrace Cable replace Phase IV	2019		
13614232	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Evergreen Acres Phase I	2019		
13633192	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2019		
13633200	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2019		
13633201	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2019		
13633202	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2019		
13633203	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR Unknown	2019		

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13739264	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable REPL in Dale Haven Estates Ph II	2019		
13739266	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable REPL in Dale Haven Estates Ph III	2019		
13506083	Evansville	Underground Network Upgrades	Electric Distribution	Replace Net Trans CM-22 3000A Station N14	2019		
13506158	Evansville	Underground Network Upgrades	Electric Distribution	Replace Civic circuit 1 2 3 underground Phase II	2019		
13506192	Evansville	Underground Network Upgrades	Electric Distribution	Replace Mulberry circuit 1 2 3 underground Phase II	2019		
13519201	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 3000A Station N7	2019		
13519202	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 3000A Station N15	2019		
13518936	Boonville	Underslung Replacements	Electric Distribution	convert D2053 to a GOAB-BOWLING ALLEY-OAKDALE	2019		
13518940	Boonville	Underslung Replacements	Electric Distribution	convert D2119 to a GOAB - BOWLING ALLEY-OAKDALE	2019		
13518960	Boonville	Underslung Replacements	Electric Distribution	convert D2134 to a GOAB - BOWLING ALLEY-FILLMAN	2019		
13518990	Evansville	Underslung Replacements	Electric Distribution	convert d1510 to a GOAB - EPWORTH- PARKLAWN	2019		
13518992	Evansville	Underslung Replacements	Electric Distribution	convert d1594 to a GOAB - EPWORTH- LOCKWOOD	2019		
13519022	Newburgh	Underslung Replacements	Electric Distribution	convert D1597 to a GOAB - EPWORTH- LOCKWOOD	2019		
13519118	Evansville	Underslung Replacements	Electric Distribution	convert d1389 to a GOAB-HOOSIER AVE- EPWORTH	2019		
14159686	Various	Wood Pole Replacements	Electric Distribution	2019 wood pole replacements	2019		
13519156	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Newburgh and Hwy 662 circuit Tie Capacity upgrade	2020		
13612970	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	BRDWAY AVE circuit 3PH replace Copper Ph II	2020		
13612973	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	BURDETTE circuit 3PH replace copper PH I	2020		
13612979	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	CABORN circuit 3PH replace copper PH I	2020		
13613037	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Kimball circuit and Caborn circuit Tie Capacity upgrade	2020		
13613113	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	MARX RD circuit 3PH replace copper PH II	2020		
13613115	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	MT Auburn 3PH circuit Tie along St Joe Ave	2020		

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13613163	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	STENDAL circuit 3PH replace copper PH IV	2020		
13613184	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	UNION TOWNSHIP circuit 3PH replace copper PH II	2020		
13613191	Winslow	12kV Circuit Rebuilds and Looping	Electric Distribution	WINSLOW circuit 3PH replace copper PH II	2020		
13726602	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	Hospital circuit-Repl copper -3phase	2020		
13726854	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	OAK HILL ROAD circuit 3PH repl copper	2020		
13500027	Evansville	4kV Conversions	Electric Distribution	Glenwood circuit CONV (Colonial Sub)	2020		
13505824	Evansville	4kV Conversions	Electric Distribution	Waterworks #1 circuit Conversion (Mulberry Sub)	2020		
13505828	Evansville	4kV Conversions	Electric Distribution	Waterworks #2 circuit Conversion (Riverside Sub)	2020		
13519139	Evansville	4kV Conversions	Electric Distribution	Grand Ave circuit Conversion (Colonial Sub)	2020		
13519151	Evansville	4kV Conversions	Electric Distribution	Jackson Ave circuit Conversion (Colonial Sub) PHI	2020		
13519155	Evansville	4kV Conversions	Electric Distribution	Maplewood circuit Conversion (Colonial Sub) PHI	2020		
13519159	Evansville	4kV Conversions	Electric Distribution	Whirlpool Ordinance circuit Conv (Plymouth Sub) PHI	2020		
13997187	Evansville	4kV Conversions	Electric Distribution	Bennighof Ave circuit Conversion (Auburn Sub) PHIII	2020		
13997193	Evansville	4kV Conversions	Electric Distribution	Bellemeade Ave circuit Conversion (Ellenwood Sub) PHII	2020		
13997203	Evansville	4kV Conversions	Electric Distribution	Bellemeade Ave circuit Conversion (Ellenwood Sub) PHIII	2020		
13997236	Evansville	4kV Conversions	Electric Distribution	Maplewood circuit Conversion (Colonial Sub) PHII	2020		
13997238	Evansville	4kV Conversions	Electric Distribution	Whirlpool Ordinance circuit Conversion (Plymouth Sub) PHII	2020		
13997239	Evansville	4kV Conversions	Electric Distribution	Jackson Ave circuit Conversion (Colonial Sub) PHII	2020		
14312698	Evansville	4kV Conversions	Electric Distribution Substation	CIRCUIT #5	2020		
14008721	Evansville	Distribution Automation	Electric Distribution	2020-Distribution Automation #1 Klietz Rd and Armstrong circuits	2020		
14008746	Evansville	Distribution Automation	Electric Distribution	2020-Distribution Automation #2 Eleventh Ave and Broadway Ave circuits	2020		

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14008858	Evansville	Distribution Automation	Electric Distribution	2020-Distribution Automation #3 Carriage House and Old Boonville circuits	2020		
14008912	Evansville	Distribution Automation	Electric Distribution	2020-Distribution Automation #4 Rosedale and Vogel Rd circuits	2020		
14008951	Evansville	Distribution Automation	Electric Distribution	2020-Distribution Automation #5 Union Township and Burdette circuits	2020		
13612962	Evansville	Distribution Capacitor Replacements	Electric Distribution	Blairsville circuit - capacitor upgrade	2020		
13612974	Evansville	Distribution Capacitor Replacements	Electric Distribution	Burdette circuit - capacitor upgrade	2020		
13612983	Mt. Vernon	Distribution Capacitor Replacements	Electric Distribution	Caborn circuit - capacitor upgrade	2020		
13613006	Boonville	Distribution Capacitor Replacements	Electric Distribution	Chandler circuit - capacitor upgrade	2020		
13613114	Evansville	Distribution Capacitor Replacements	Electric Distribution	Maxx Road circuit - capacitor upgrade	2020		
13626446	Oakland City	Instrument Transformer Replacements	Electric Transmission Substation	Oakland City PT replacements	2020		
13970267	Mt. Vernon	Instrument Transformer Replacements	Electric Transmission Substation	Mount Vernon PT replacements	2020		
14080681	Mt. Vernon	Substation Arrester Replacements	Electric Transmission Substation	Replace arresters- New Harmony- East circuit-Porcelain- Brown	2020		
14080682	Mt. Vernon	Substation Arrester Replacements	Electric Transmission Substation	Replace arresters- New Harmony- West circuit-Porcelain- Brown	2020		
13970638	Evansville	Substation Battery System Replacements	Electric Transmission Substation	Charger Replacement	2020		
13970643	Evansville	Substation Battery System Replacements	Electric Distribution Substation	Battery Replacement	2020		
13964218	Newburgh	Substation Circuit Breaker Replacements	Electric Distribution Substation	Broadview Sub SWGR #1 Replace	2020		
13964270	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	BUCKWOOD Sub SWGR #1 Convert	2020		
13964317	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	Civic Center Sub SWGR #1 Replace	2020		
13964327	Newburgh	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE CULLEY 138KV OCB 2177	2020		
13964346	Newburgh	Substation Circuit Breaker Replacements	Electric Transmission Substation	CULLEY 69KV 488 - 4852147	2020		
13964511	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	EAST SIDE 188 - 4852578	2020		

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13964512	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	EAST SIDE 288 - 4852579	2020		
13964513	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	EAST SIDE 388 - 4852577	2020		
13964515	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	EAST SIDE 488 - 4852576	2020		
13964609	Ft. Branch	Substation Circuit Breaker Replacements	Electric Distribution Substation	FORT BRANCH RURAL 488 - 4858830	2020		
13965674	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	MOUNT VERNON MAIN 177 - 4859638	2020		
13965682	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	MOUNT VERNON MAIN 277 - 4859646	2020		
13965747	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	NEW HARMONY SWITCHING STATION 277 - 4859254	2020		
13966099	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	ROLLING HILLS 188 - 4858859	2020		
13966101	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	ROLLING HILLS 288 - 4858858	2020		
13966194	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SMYTHE SUBSTATION 188 - 4852161	2020		
13966195	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SMYTHE SUBSTATION 288 - 4858833	2020		
13966196	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SMYTHE SUBSTATION 388 - 4858825	2020		
14034397	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	Angel Mounds 100 - 4859594	2020		
14034398	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	Angel Mounds 177 - 4859595	2020		
14034399	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	Angel Mounds 188 - 4859593	2020		
14034402	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	Angel Mounds 200 - 4859418	2020		
14034414	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	Angel Mounds 288 - 4859597	2020		
14038893	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	ROCKPORT 177 - 4859687	2020		
14038895	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	ROCKPORT 277 - 4859683	2020		
13970649	Dale	Substation Physical Security Upgrades	Electric Transmission Substation	Duff Substation	2020		
13964188	Newburgh	Substation Transformer Replacements	Electric Distribution Substation	BROADVIEW T1 - C05751-5-1	2020		
13964273	Evansville	Substation Transformer Replacements	Electric Distribution Substation	BUCKWOOD T1 - L252307	2020		

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13964321	Evansville	Substation Transformer Replacements	Electric Distribution Substation	Civic Center Sub Replace T1	2020		
13964628	Ft. Branch	Substation Transformer Replacements	Electric Distribution Substation	FORT BRANCH RURAL T1 - H888075	2020		
13966102	Boonville	Substation Transformer Replacements	Electric Distribution Substation	ROLLING HILLS T1 - L246425B	2020		
13966198	Evansville	Substation Transformer Replacements	Electric Distribution Substation	SMYTHE SUBSTATION T1 - UBS2938-1	2020		
13966200	Evansville	Substation Transformer Replacements	Electric Distribution Substation	SMYTHE SUBSTATION T2 - M162434A	2020		
13963432	Mt. Vernon	System Protection Relay Upgrades	Electric Distribution Substation	Benton Corner 12kV PROT-CONTR upgrade	2020		
13964353	Dale	System Protection Relay Upgrades	Electric Distribution Substation	AutoSect - Dale Y64_78	2020		
13965582	Holland	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL-Jasper SW Y67-2 Y67-3	2020		
13965636	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPLMohr Rd T1 188 288	2020		
13965847	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPLOak Grove T1 MSOC	2020		
13965867	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL-Oak Grove Y58 Y25-2	2020		
13966031	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Ohio River STAT Y31-1 Y50-1 Y30 Y32-1	2020		
13966066	Boonville	System Protection Relay Upgrades	Electric Distribution Substation	Arc Flash Relay PROT Paradise (SWGR)	2020		
13966204	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement-St. Mary's T1 T2 Bus tie MSOC	2020		
13966205	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	Arc Flash Relay PROT St Mary's (SWGR)	2020		
13970111	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- Stringtown 188-288- 388-488	2020		
13970214	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement-VIP T1 T2 MSOC	2020		
13970215	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement VIP 188 388 488	2020		
14034430	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- Angel Mounds Y45	2020		
14312172	Evansville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Gateway 288 388 488	2020		
13965806	Evansville	Transmission Capacitor Replacements	Electric Transmission Substation	Northeast Sub capacitor Bank - Install 15.6 MVAR bank	2020		
13751963	Evansville	Transmission Line Rebuilds	Electric Transmission	Civic Center 1 Replace underground (0.5 mi)	2020		

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13751981	Boonville	Transmission Line Rebuilds	Electric Transmission	Y68 Culley to Boonville (0.6 miles)	2020		
14039131	Evansville	Transmission Line Rebuilds	Electric Transmission	Y76 Phase III- Wadesville to New Harmony 9 miles w/ OPGW	2020		
13503436	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Santa Claus N. circuit Exit and Extension Install Ph 1	2020		
13519184	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Greenbriar Co-Op Phase I	2020		
13519185	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Greenbriar Co-Op Phase II	2020		
13519197	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Meadows Apartments	2020		
13519198	Boonville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Mobile Manor Phase I	2020		
13519199	Boonville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Mobile Manor Phase II	2020		
13613202	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Broadview SUBD Cable replace Phase 5	2020		
13614204	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Broadview SUBD Cable replace Phase 6	2020		
13614239	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Harper Heights	2020		
13614240	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Lakeside Terrace Cable replace Phase V	2020		
13614244	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Valley View and Golden Towers Phase I	2020		
13614245	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Valley View and Golden Towers Phase II	2020		
13616740	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Turpin SUBD	2020		
13617461	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Christmas Lake Cable Third Main Feed Install PhI	2020		
13633206	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replacement in Ridgewood Heights	2020		

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13727088	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2020		
13727434	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2020		
13727515	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2020		
13975039	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Santa Claus N. circuit Exit and Extension Install Ph II	2020		
13975041	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Santa Claus N. circuit Exit and Extension Install Ph III	2020		
13503307	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 City-County Building Civic 1	2020		
13519203	Evansville	Underground Network Upgrades	Electric Distribution	Replace Civic circuit 1 2 3 underground Phase III	2020		
13519204	Evansville	Underground Network Upgrades	Electric Distribution	Replace Mulberry circuit 1 2 3 underground Phase III	2020		
13617001	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 City-County Building Civic 3	2020		
13613015	Boonville	Underslung Replacements	Electric Distribution	convert D2140 to a GOAB - HOSPITAL- OAKDALE SCHOOL	2020		
13613034	Mt. Vernon	Underslung Replacements	Electric Distribution	convert D2357 to a GOAB - KIMBALL- INDIAN MOUNDS ROAD	2020		
13613109	Evansville	Underslung Replacements	Electric Distribution	convert D3021 to a GOAB - MARRS- UNION TOWNSHIP	2020		
13613123	Evansville	Underslung Replacements	Electric Distribution	convert d1191 to a GOAB - OLMSTEAD - STRINGTOWN	2020		
13613129	Evansville	Underslung Replacements	Electric Distribution	convert d1194 to a GOAB - PARK ST- SEVENTH AVE_4	2020		
13613135	Evansville	Underslung Replacements	Electric Distribution	convert d1541 to a GOAB-SOUTH BOEKE- ROSEDALE	2020		
13613167	Evansville	Underslung Replacements	Electric Distribution	convert d1169 to a GOAB - STRINGTOWN- NORTH KENTUCKY	2020		
14159739	Various	Wood Pole Replacements	Electric Distribution	2020 wood pole replacements	2020		
13500058	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Extend 3PH Camelot circuit west along Oak Grove Rd	2021		
13518904	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	BOWLING ALLEY circuit 3PH replace Copper	2021		
13612971	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	BROWNING RD circuit 3PH replace Copper PH I	2021		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13612972	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	BROWNING RD circuit 3PH replace Copper PH II	2021		
13614311	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	BURDETTE circuit 3PH replace Copper PH II	2021		
13614501	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	CABORN circuit 3PH replace copper PH II	2021		
13614504	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	COPPERLINE RD circuit 3PH replace copper PH I	2021		
13614508	Holland	12kV Circuit Rebuilds and Looping	Electric Distribution	DALE NORTH circuit 3PH replace copper PH I	2021		
13614620	Dale	12kV Circuit Rebuilds and Looping	Electric Distribution	DALE SOUTH circuit 3PH replace copper PH I	2021		
13614622	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	Lincoln State Park - relocate feed	2021		
13614653	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	DIVISION ST circuit 3PH replace copper	2021		
13614658	Francisco	12kV Circuit Rebuilds and Looping	Electric Distribution	Douglas Station circuit_Prin Farms circuit Tie	2021		
13614691	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3PH circuit tie-Eissler Rd to Hwy 41	2021		
13614692	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Evergreen Rd circuit Radial Tie-Larch Ln	2021		
13614693	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Farmersville circuit Rebuild	2021		
13614703	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	MARX RD circuit 3PH replace copper PH III	2021		
13614738	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	North Boeke RD circuit upgrade	2021		
13615034	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	STENDAL circuit 3PH replace copper PH V	2021		
13615206	Winslow	12kV Circuit Rebuilds and Looping	Electric Distribution	WINSLOW circuit 3PH replace copper PH III	2021		
13616342	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	DAM circuit 3PH replace copper conductor	2021		
13616346	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3PH circuit Tie-Mohr Sub N. to St Joe_Schenk	2021		
13616347	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Fifth Ave and Highland circuit Tie upgrade	2021		
13616524	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Fifth Ave circuit and North Park circuit Tie upgrade	2021		
13616526	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	FIFTH AVE circuit 3PH replace copper conductor	2021		
13726535	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	HOOSIER AVE circuit 3PH repl copper Phase I	2021		
13883947	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert N Kentucky Ave circuit exit to OH	2021		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13615166	Evansville	4kV Conversions	Electric Distribution	Welborn Alternate circuit Conversion (Mulberry Sub)	2021		
13993861	Evansville	4kV Conversions	Electric Distribution	Garrison Ave CKT Conversion (Dixieland Sub) Ph I	2021		
14044176	Evansville	4kV Conversions	Electric Distribution	Garrison Ave CKT Conversion (Dixieland Sub) Ph II	2021		
14008964	Evansville	Distribution Automation	Electric Distribution	2021-Distribution Automation #2 Enterprise and Lloyd Crossing circuits	2021		
14008997	Evansville	Distribution Automation	Electric Distribution	2021-Distribution Automation #1 Lafayette, Seventh and West Columbia	2021		
14009005	Evansville	Distribution Automation	Electric Distribution	2021-Distribution Automation #3 Jenner Rd and Oak Grove Rd circuits	2021		
14009011	Evansville	Distribution Automation	Electric Distribution	2021-Distribution Automation #4 Burkhardt Rd and Virginia Street circuits	2021		
14009021	Evansville	Distribution Automation	Electric Distribution	2021-Distribution Automation #5 Homestead Ave and Old State Rd	2021		
14009033	Evansville	Distribution Automation	Electric Distribution	2021-Distribution Automation #6 Green River Rd and Eastland Mall circuits	2021		
13614503	Evansville	Distribution Capacitor Replacements	Electric Distribution	Concord Boulevard circuit - capacitor upgrade	2021		
13614506	Mt. Vernon	Distribution Capacitor Replacements	Electric Distribution	Copperline Road circuit - capacitor upgrade	2021		
13614512	Dale	Distribution Capacitor Replacements	Electric Distribution	Dale North circuit - capacitor upgrade	2021		
13614621	Dale	Distribution Capacitor Replacements	Electric Distribution	Dale South circuit - capacitor upgrade	2021		
13614652	Newburgh	Distribution Capacitor Replacements	Electric Distribution	Dam circuit - capacitor upgrade	2021		
13614654	Evansville	Distribution Capacitor Replacements	Electric Distribution	Division Street circuit - capacitor upgrade	2021		
13614690	Evansville	Distribution Capacitor Replacements Instrument	Electric Distribution	Evergreen Road circuit - capacitor upgrade	2021		
13970318	Boonville	Transformer Replacements Instrument	Electric Transmission Substation	Pelzer PT replacements	2021		
13970343	Evansville	Transformer Replacements	Electric Distribution Substation	Mullberry PT replacements	2021		
13970369	Various	Mobile Asset Data Collection	Electric Transmission Substation	Mobile Asset Data Collection	2021		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14080684	Mt. Vernon	Substation Arrester Replacements	Electric Transmission Substation	Replace arresters: Point-transformer1- tertiary-Porcelain- Brown	2021		
13970639	Evansville	Substation Battery System Replacements	Electric Transmission Substation	Charger Replacement	2021		
13970644	Evansville	Substation Battery System Replacements	Electric Distribution Substation	Battery Replacement	2021		
13964153	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	BOONVILLE PIONEER 166 - 4848992	2021		
13964154	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	BOONVILLE PIONEER 188 - 4842773	2021		
13964160	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	BOONVILLE PIONEER 288 - 4842846	2021		
13964161	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	BOONVILLE PIONEER 388 - 4848976	2021		
13964168	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	BOONVILLE PIONEER 488 - 4848453	2021		
13964170	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	BOONVILLE PIONEER 588 - 4848978	2021		
13964263	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	BUCKWOOD Sub SWGR #2 Convert	2021		
13964320	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	Civic Center Sub SWGR #2 Replace	2021		
13964328	Newburgh	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE CULLEY 138KV OCB 2388	2021		
13964336	Newburgh	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE CULLEY 138KV OCB 2400	2021		
13964337	Newburgh	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE CULLEY 138KV OCB 2477	2021		
13964524	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	FAIRLAWN 388 - 4852157	2021		
13964526	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	FAIRLAWN 488 - 4851754	2021		
13965205	Newburgh	Substation Circuit Breaker Replacements	Electric Distribution Substation	GRIMM ROAD 188 - 4858820	2021		
13965243	Newburgh	Substation Circuit Breaker Replacements	Electric Distribution Substation	GRIMM ROAD 288 - 4858822	2021		
13965275	Newburgh	Substation Circuit Breaker Replacements	Electric Distribution Substation	GRIMM ROAD 388 - 4852160	2021		
13966075	Boonville	Substation Circuit Breaker Replacements	Electric Transmission Substation	PELZER 177 - 4859332	2021		
13966076	Boonville	Substation Circuit Breaker Replacements	Electric Transmission Substation	PELZER 188 - 4852168	2021		
13966077	Boonville	Substation Circuit Breaker Replacements	Electric Transmission Substation	PELZER 277 - 4852167	2021		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13966108	Haubstadt	Substation Circuit Breaker Replacements	Electric Distribution Substation	SAINT WENDELL 188 - 4859705	2021		
13966154	Haubstadt	Substation Circuit Breaker Replacements	Electric Distribution Substation	SAINT WENDELL 288 - 4859706	2021		
13966155	Haubstadt	Substation Circuit Breaker Replacements	Electric Distribution Substation	SAINT WENDELL 388 - 4859707	2021		
13970187	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	TEKOPPEL 288 - 4860092	2021		
13626454	Rockport	Substation Physical Security Upgrades	Electric Transmission Substation	Newtonville Substation	2021		
13964274	Evansville	Substation Transformer Replacements	Electric Distribution Substation	BUCKWOOD T2 - L252748	2021		
13964323	Evansville	Substation Transformer Replacements	Electric Distribution Substation	Civic Center Sub Replace T2	2021		
13965714	Evansville	Substation Transformer Replacements	Electric Distribution Substation	REPL of MULBERRY SUB Dist. Network T3	2021		
13965715	Evansville	Substation Transformer Replacements	Electric Distribution Substation	REPL of MULBERRY SUB Dist. Network T4	2021		
13966156	Haubstadt	Substation Transformer Replacements	Electric Distribution Substation	SAINT WENDELL T1 - A5735	2021		
13970189	Evansville	Substation Transformer Replacements	Electric Distribution Substation	TEKOPPEL T2 - UBS3021-1	2021		
13964151	Mt. Vernon	System Protection Relay Upgrades	Electric Distribution Substation	AutoSect - Benton Corner Y33	2021		
13964341	Newburgh	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL- Culley 138kV Bus 1 PROT upgrade	2021		
13964342	Newburgh	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL- Culley 138kV Bus 2 PROT upgrade	2021		
13965434	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL Heidelbach 69kV Bus PROT upgrade	2021		
13965713	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	Relay REPL-Mulberry Y65 Y65-2	2021		
13965802	Rockport	System Protection Relay Upgrades	Electric Transmission Substation	Newtonville Sub DDR	2021		
13965807	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL-Northeast Z81-2	2021		
13966078	Boonville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL-Pelzer Y61 and Y56-1	2021		
13966192	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- Smythe T1 and T2 MSOC	2021		
14312151	Ft. Branch	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Toyota 100 500 T2	2021		
14312171	Mt. Vernon	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Mead Johnson Park 288	2021		
13751987	Newburgh	Transmission Line Looping	Electric Transmission	Y58_Y59 Loop for Paradise Sub (1.8 mi) (Incl w_OPGW plan)	2021		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13751978	Evansville	Transmission Line Rebuilds	Electric Transmission	Y52-1 NE to Millersburg Rd (2.2 miles) (Incl w_OPGW plan)	2021		
13751989	Evansville	Transmission Line Rebuilds	Electric Transmission	Civic Center 2 Replace underground (0.5 mi)	2021		
13751992	Boonville	Transmission Line Rebuilds	Electric Transmission	Y68 Rebuild Lynnville Meter to Lynnville (12.3 mi) (No OPGW required)	2021		
13506082	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Little Nation Estates - UD Loop _ Tie	2021		
13506086	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Parkside Terrace Sub	2021		
13519187	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Greenbriar Co-Op Phase III	2021		
13519188	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Highland Hills Apts	2021		
13519195	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Hillview Lake	2021		
13614230	Evansville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Embassy East	2021		
13614241	Boonville	Underground Cable Replacements and Looping	Electric Distribution	underground Cable replace in Mobile Manor Phase III	2021		
13615371	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Broadview SUBD Cable replace Phase 7	2021		
13616708	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Diamond Valley	2021		
13616709	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Dunaway 2	2021		
13616720	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Evergreen Acres Phase II	2021		
13616721	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Keenland Court	2021		
13616723	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Lakeland Gardens	2021		
13616727	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Lakeside Terrace Cable replace Phase VI	2021		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13617006	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Das Morgen Landes	2021		
13617460	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Christmas Lake Phase 7	2021		
13680225	Francisco	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR Unknown	2021		
13727426	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2021		
13727438	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2021		
13727476	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable REPL in Greenbriar Hills Phase II	2021		
13727580	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR Unknown	2021		
14000946	Santa Clause	Underground Cable Replacements and Looping	Electric Distribution	Christmas Lake cable replacement -third main feed install PhII	2021		
13519183	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 3000A Library	2021		
13614249	Evansville	Underground Network Upgrades	Electric Distribution	Replace Civic circuits 1 2 3 underground conductor Phase IV	2021		
13614253	Evansville	Underground Network Upgrades	Electric Distribution	Replace Mulberry circuit 1 2 3 underground Phase IV	2021		
13616707	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 3000A Library	2021		
13616737	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 3000A Station N22	2021		
13617102	Evansville	Underground Network Upgrades	Electric Distribution	Replace Civic circuits 1 2 3 underground conductor Phase VI	2021		
13614513	Dale	Underslung Replacements	Electric Distribution	convert d1705 to a GOAB - DALE SOUTH- MARIAH HILL	2021		
13614659	Evansville	Underslung Replacements	Electric Distribution	convert d1043 to a GOAB-EVERGREEN RD- DARMSTADT	2021		
13614660	Evansville	Underslung Replacements	Electric Distribution	convert d2023 to a GOAB-EVERGREEN RD- N CENTRAL	2021		
13614697	Holland	Underslung Replacements	Electric Distribution	convert d1715 to a GOAB - HOLLAND- DALE NORTH	2021		
13614698	Holland	Underslung Replacements	Electric Distribution	convert d1716 to a GOAB - HOLLAND- DALE NORTH	2021		

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13614826	Newburgh	Underslung Replacements	Electric Distribution	convert d1763 to a GOAB-OAK GROVE RD- JENNER RD	2021		
14159754	Various	Wood Pole Replacements	Electric Distribution	2021 wood pole replacements	2021		
13519117	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	HWY 57 circuit 3PH replace copper conductor	2022		
13616336	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	COPPERLINE RD circuit 3PH replace copper PH II	2022		
13616339	Dale	12kV Circuit Rebuilds and Looping	Electric Distribution	DALE NORTH circuit 3PH replace copper PH II	2022		
13616340	Dale	12kV Circuit Rebuilds and Looping	Electric Distribution	DALE SOUTH circuit 3PH replace copper PH II	2022		
13616343	Ft. Branch	12kV Circuit Rebuilds and Looping	Electric Distribution	DOUGLAS ST circuit 3PH replace copper PH I	2022		
13616345	Ft. Branch	12kV Circuit Rebuilds and Looping	Electric Distribution	DOUGLAS ST circuit 3PH replace copper PH II	2022		
13616575	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	MARX RD circuit 3PH replace copper PH IV	2022		
13617308	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Fifth Ave circuit and Mt Auburn Tie upgrade	2022		
13617322	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	FOLSOMVILLE circuit 3PH replace copper	2022		
13617327	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Ford RD circuit and Marrs circuit Tie Capacity upgrade	2022		
13726520	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	GREENCOVE circuit 3PH repl copper Phase I	2022		
13726644	Santa Clause	12kV Circuit Rebuilds and Looping	Electric Distribution	LINCOLN CITY circuit 3PH replace copper	2022		
13726646	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	7115 Upper Mt Vernon Rd - Move poles out of field	2022		
13726677	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	McCOOL ROAD circuit 3PH repl copper Phase I	2022		
13726880	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	S BOEKE RD 3PH repl copper Phase I	2022		
13726881	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	S BOEKE RD 3PH repl copper Phase II	2022		
13726889	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	WABASH circuit 3PH repl copper Phase II	2022		
13519119	Evansville	4kV Conversions	Electric Distribution	Ball Park circuit Conversion (Garvin Sub) PHI	2022		
13519154	Evansville	4kV Conversions	Electric Distribution	Louisiana St circuit Conversion (Garvin Sub) PhI	2022		
13613132	Evansville	4kV Conversions	Electric Distribution	Maxwell Ave CKT Conversion (Plymouth Sub) PHI	2022		
13997167	Evansville	4kV Conversions	Electric Distribution	Ball Park circuit Conversion (Garvin Sub) PHII	2022		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13997170	Evansville	4kV Conversions	Electric Distribution	Ball Park circuit Conversion (Garvin Sub) PHIII	2022		
13997199	Evansville	4kV Conversions	Electric Distribution	Louisiana St circuit Conversion (Garvin Sub) PhII	2022		
13997204	Evansville	4kV Conversions	Electric Distribution	Louisiana St circuit Conversion (Garvin Sub) PhIII	2022		
13997207	Evansville	4kV Conversions	Electric Distribution	Maxwell Ave CKT Conversion (Plymouth Sub) PHII	2022		
14013045	Evansville	4kV Conversions	Electric Distribution	Ball Park circuit Conversion (Garvin Sub) PHIV	2022		
14026536	Evansville	4kV Conversions	Electric Distribution	Maxwell Ave CKT Conversion (Plymouth Sub) PHIII	2022		
14009052	Ft. Branch	Distribution Automation	Electric Distribution	2022-Distribution Automation #7 Douglas Station and Fort Branch circuits	2022		
14009105	Mt. Vernon	Distribution Automation	Electric Distribution	2022-Distribution Automation #6 Caborn and Farmersville circuits	2022		
14009118	Evansville	Distribution Automation	Electric Distribution	2022-Distribution Automation #1 John Street Midtown Park circuits	2022		
14009152	Evansville	Distribution Automation	Electric Distribution	2022-Distribution Automation #2 Marx Rd circuits	2022		
14009191	Evansville	Distribution Automation	Electric Distribution	2022-Distribution Automation #3 Highland and Fifth Ave circuits	2022		
14009199	Evansville	Distribution Automation	Electric Distribution	2022-Distribution Automation #4 Outer Lincoln Ave and Frame Rd circuits	2022		
14009261	Boonville	Distribution Automation	Electric Distribution	2022-Distribution Automation #5 Fillman and City circuits	2022		
13616333	Evansville	Distribution Capacitor Replacements	Electric Distribution	Browning Road circuit - capacitor upgrade	2022		
13616497	Evansville	Distribution Capacitor Replacements	Electric Distribution	Fifth AVE circuit - capacitor upgrade	2022		
13617325	Evansville	Distribution Capacitor Replacements	Electric Distribution	Ford Road circuit - capacitor upgrade	2022		
13888498	Newburgh	Distribution Capacitor Replacements	Electric Distribution	Frame Road circuit - capacitor upgrade	2022		
13888546	Evansville	Distribution Capacitor Replacements	Electric Distribution	Greencove circuit - capacitor upgrade	2022		
13888688	Santa Clause	Distribution Capacitor Replacements	Electric Distribution	Lincoln City circuit - capacitor upgrade	2022		
13888690	Evansville	Distribution Capacitor Replacements	Electric Distribution	Lynch Road circuit - capacitor upgrade	2022		

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13888789	Evansville	Distribution Capacitor Replacements	Electric Distribution	Rotherwood AVE circuit - capacitor upgrade	2022		
13888938	Haubstadt	Distribution Capacitor Replacements	Electric Distribution	Haubstadt circuit - capacitor upgrade	2022		
13888994	Rockport	Distribution Capacitor Replacements	Electric Distribution	Holland circuit - capacitor upgrade	2022		
13888998	Newburgh	Distribution Capacitor Replacements	Electric Distribution	Jenner Road circuit - capacitor upgrade	2022		
13889027	Newburgh	Distribution Capacitor Replacements	Electric Distribution	Lenn Road circuit - capacitor upgrade	2022		
13889032	Mt. Vernon	Distribution Capacitor Replacements	Electric Distribution	Marrs circuit - capacitor upgrade	2022		
13889039	Boonville	Distribution Capacitor Replacements	Electric Distribution	McCool Road circuit - capacitor upgrade	2022		
14153671	Evansville	Distribution Capacitor Replacements	Electric Distribution	Hedden Road circuit - capacitor upgrade	2022		
13970345	Evansville	Instrument Transformer Replacements	Electric Distribution Substation	Slaughter PT replacements	2022		
14080679	Mt. Vernon	Substation Arrester Replacements	Electric Transmission Substation	Replace arresters: MT VERNON MAIN- transformer 1- highside-Porcelain- Brown	2022		
14080680	Mt. Vernon	Substation Arrester Replacements	Electric Transmission Substation	Replace arresters: MT VERNON MAIN Y33- Porcelain-Brown	2022		
13970640	Mt. Vernon	Substation Battery System Replacements	Electric Distribution Substation	Charger Replacement	2022		
13970645	Evansville	Substation Battery System Replacements	Electric Distribution Substation	Battery Replacement	2022		
13964219	Newburgh	Substation Circuit Breaker Replacements	Electric Distribution Substation	Broadview Sub SWGR #2 Replace	2022		
13964338	Newburgh	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE CULLEY 138KV OCB 2688	2022		
13964345	Newburgh	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE CULLEY 69KV OCB 126	2022		
13964363	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	EAST INDUSTRIAL 288 - 4860135	2022		
13964364	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	EAST INDUSTRIAL 388 - 4851752	2022		
13964519	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	FAIRLAWN 188 - 4852153	2022		
13964522	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	FAIRLAWN 288 - 4851753	2022		
13964528	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	FOLZ ROAD 188 - 4859328	2022		
13964547	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	FOLZ ROAD 288 - 4859327	2022		

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13964771	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	GIVENS 388 - 4859339	2022		
13964773	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	GIVENS 488 - 4859341	2022		
13965105	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	Green Oaks Sub SWGR #2 Convert	2022		
13965365	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE HEIDELBACH OCB 2177	2022		
13965386	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE HEIDELBACH OCB 2277	2022		
13965473	Stendel	Substation Circuit Breaker Replacements	Electric Distribution Substation	HEMENWAY 188 - 4858852	2022		
13965493	Stendel	Substation Circuit Breaker Replacements	Electric Distribution Substation	HEMENWAY 288 - 4858827	2022		
13965553	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	HIRSCH ROAD SUBSTATION 188 - 4725750	2022		
13965575	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	HIRSCH ROAD SUBSTATION 288 - 4726212	2022		
13966103	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	SAINT PHILLIPS 188 - 4859313	2022		
13966105	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	SAINT PHILLIPS 288 - 4859314	2022		
13966158	Dale	Substation Circuit Breaker Replacements	Electric Distribution Substation	SANTA CLAUS 188 - 4852575	2022		
13966163	Dale	Substation Circuit Breaker Replacements	Electric Distribution Substation	SANTA CLAUS 288 - 4852573	2022		
13966166	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SLAUGHTER AVENUE 100 - 4859198	2022		
13966167	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SLAUGHTER AVENUE 388 - 4858879	2022		
13966186	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SLAUGHTER AVENUE 488 - 4858873	2022		
13966187	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SLAUGHTER AVENUE 588 - 4858878	2022		
13966189	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SLAUGHTER AVENUE 500 - 4858882	2022		
13970256	Newburgh	Substation Circuit Breaker Replacements	Electric Distribution Substation	Replacement of YANKEETOWN 12kV circuit Breaker 1	2022		
13970259	Newburgh	Substation Circuit Breaker Replacements	Electric Distribution Substation	Replacement of YANKEETOWN 12kV circuit Breaker 2	2022		
13970647	Evansville	Substation Physical Security Upgrades	Electric Transmission Substation	AB Brown 345 Substation	2022		
13964217	Newburgh	Substation Transformer Replacements	Electric Distribution Substation	BROADVIEW T2 - CM17478-10101	2022		
13964458	Evansville	Substation Transformer Replacements	Electric Distribution Substation	EAST INDUSTRIAL T2 - 62-08-60774	2022		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13964527	Evansville	Substation Transformer Replacements	Electric Distribution Substation	FAIRLAWN T1 - 236B9452	2022		
13964655	Evansville	Substation Transformer Replacements	Electric Distribution Substation	FUQUAY T1 - L246425A	2022		
13964845	Mt. Vernon	Substation Transformer Replacements	Electric Distribution Substation	GIVENS T2 - C05750-5- 1	2022		
13965512	Stendel	Substation Transformer Replacements	Electric Distribution Substation	HEMENWAY T1 - C02896-5-1	2022		
13966106	Mt. Vernon	Substation Transformer Replacements	Electric Distribution Substation	SAINT PHILLIPS T1 - A6080	2022		
13970142	Evansville	Substation Transformer Replacements	Electric Distribution Substation	SUNBEAM T2 - L252866	2022		
13970190	Evansville	Substation Transformer Replacements	Electric Distribution Substation	TEKOPPEL T1 - M162434B	2022		
13965709	Evansville	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Underground Network SCADA-Distribution Mulberry	2022		
13964362	Holland	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL- Duff Z84-3 Z78-1	2022		
13965613	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL Maryland T2 CB 388 CB 488	2022		
13965707	Mt. Vernon	System Protection Relay Upgrades	Electric Transmission Substation	Mt. Vernon 69kV transfer scheme upgrade	2022		
13965750	Rockport	System Protection Relay Upgrades	Electric Transmission Substation	Newtonville T5 capacitor 1 capacitor 2 MSOC	2022		
13965751	Rockport	System Protection Relay Upgrades	Electric Transmission Substation	Newtonville L302161 and L303161	2022		
13965820	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL-Northeast Y56-1 Y54	2022		
13966098	Rockport	System Protection Relay Upgrades	Electric Distribution Substation	Rockport 12kV PROT- CONTR upgrade	2022		
14035029	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	AutoSect - Garvin Y51-	2022		
13751934	Boonville	Transmission Line Looping	Electric Distribution Substation	City of Boonville- Pioneer Substation Mod for Loop Feed	2022		
13751940	Boonville	Transmission Line Looping	Electric Distribution Substation	Boonville Substation Mod for Loop Feed	2022		
13751979	Boonville	Transmission Line Looping	Electric Transmission	Y56 Loop-Boonville & Boonville-Pioneer Subs New Line with OPGW (2.5 mi) Eng., ROW & Const	2022		
13751964	Evansville	Transmission Line Rebuilds	Electric Transmission	Y31-1 Northwest to Ohio River Rebuild (2.08 miles)	2022		
13616974	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Broadview SUBD Cable replace Phase 8	2022		

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13617010	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Evergreen Acres Phase III	2022		
13617014	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Jamestown Section	2022		
13617031	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Liberty Terrace Cable replace	2022		
13617056	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Old State One Thru Four Phase I	2022		
13617058	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Romain Park	2022		
13617088	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Sharon Rose Manor SUBD Cable replace	2022		
13617096	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Triple Crown Estates	2022		
13617100	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground replace in Westbrooke W. Phase I	2022		
13617469	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground Cable replace in Old State One Thru Four Phase II	2022		
13617471	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Regency Club Apartments Cable replace	2022		
13617474	Boonville	Underground Cable Replacements and Looping	Electric Distribution	Tomahawk Drive Cable replacement	2022		
13617476	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground replacement in Westbrooke W. Phase II	2022		
13617478	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Underground replacement in Westbrooke W. Phase III	2022		
13727087	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Audubon Estates Cable REPL Phase I	2022		
13727439	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR Unknown	2022		
13727441	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2022		
13727474	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Glenview Industrial Cable REPL	2022		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13727480	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR-1 PMH- 9	2022		
13727483	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR -2 PMH- 9	2022		
13727548	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2022		
13727597	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Roman Acres Cable REPL	2022		
13727697	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR Unknown	2022		
13506074	Evansville	Underground Network Upgrades	Electric Distribution	Replace Net Trans CM-22 One Riverfront Place 2	2022		
13616851	Evansville	Underground Network Upgrades	Electric Distribution	Replace Civic circuits 1 2 3 underground conductor Phase V	2022		
13616876	Evansville	Underground Network Upgrades	Electric Distribution	Replace Mulberry circuit 1 2 3 underground Phase V	2022		
13617049	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 3000A Station N23	2022		
13617462	Evansville	Underground Network Upgrades	Electric Distribution	replace Net Trans CM-22 One Riverfront Place 1	2022		
13617510	Evansville	Underground Network Upgrades	Electric Distribution	Replace Civic circuits 1 2 3 underground conductor Phase VII	2022		
13616540	Evansville	Underslung Replacements	Electric Distribution	convert d1521 to a GOAB-JOHN ST- RIVERSIDE DRIVE	2022		
14159756	Various	Wood Pole Replacements	Electric Distribution	2022 wood pole replacements	2022		
13500119	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	ELLENWOOD 2 CKT 3PH repl copper Phase I	2023		
13500120	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	ELLENWOOD 2 CKT 3PH repl copper Phase II	2023		
13501928	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	STOCKWELL RD CKT 3PH repl copper Phase I	2023		
13505938	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	SPRINGFIELD CKT 3PH repl copper Phase I	2023		
13612989	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	Chandler and McCool CKT Tie Capacity UPGRDE	2023		
13613187	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Uniontown Three PH Feeder CKT Tie	2023		
13615072	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	UNION TOWNSHIP 3PH repl copper PH III	2023		

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13616576	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Newburgh CKT - Reconductor	2023		
13617276	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	COPPERLINE RD CKT 3PH repl copper PH III	2023		
13617305	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	DALE SOUTH CKT 3PH repl copper PH III	2023		
13617328	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Ford RD CKT UPGRDE	2023		
13617410	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Highland -Mt Auburn CKT Tie Capacity UPGRDE	2023		
13617423	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	MARX RD CKT 3PH repl copper PH V	2023		
13726515	Ft. Branch	12kV Circuit Rebuilds and Looping	Electric Distribution	FORT BRANCH CKT 3PH repl copper Phase II	2023		
13726637	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	KRATZVILLE ROAD 3PH repl copper Phase I	2023		
13726647	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Relo 1PH to road from field-Lower Mt Vernon Rd	2023		
13726683	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert MT AUBURN CKT exit to OH	2023		
13726800	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	MT AUBURN CKT 3PH repl copper Phase I	2023		
13726871	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	PELZER CKT 3PH repl copper Phase I	2023		
13613122	Evansville	4kV Conversions	Electric Distribution	Faultless CKT Conversion (Plymouth Sub)	2023		
13613169	Evansville	4kV Conversions	Electric Distribution	Swift CKT Conversion (Read Sub) PHI	2023		
13613182	Evansville	4kV Conversions	Electric Distribution	Town Center CKT Conversion (Garvin Sub) PHI	2023		
13613189	Evansville	4kV Conversions	Electric Distribution	Whirlpool #4 CKT Conversion (Read Street Sub)	2023		
13964724	Evansville	4kV Conversions	Electric Distribution Substation	Garvin Sub - UPGRDE substation to 12 kV	2023		
13993871	Evansville	4kV Conversions	Electric Distribution	Ruvan CKT Conversion (Dixieland Sub)	2023		
13997152	Evansville	4kV Conversions	Electric Distribution	Swift CKT Conversion (Read Sub) PHII	2023		
13997154	Evansville	4kV Conversions	Electric Distribution	Swift CKT Conversion (Read Sub) PHIII	2023		
13997156	Evansville	4kV Conversions	Electric Distribution	Town Center CKT Conversion (Garvin Sub) PHII	2023		
13997159	Evansville	4kV Conversions	Electric Distribution	Town Center circuit Conversion (Garvin Sub) PHIII	2023		

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14009307	Evansville	Distribution Automation	Electric Distribution	2023-Distribution Automation #1 Browning Rd and Wortman Rd CKTs	2023		
14009323	Haubstadt	Distribution Automation	Electric Distribution	2023-Distribution Automation #2 Haubstadt and Warrenton circuits	2023		
14009566	Boonville	Distribution Automation	Electric Distribution	2023-Distribution Automation #3 McCool Rd and Chandler circuits	2023		
14009575	Mt. Vernon	Distribution Automation	Electric Distribution	2023-Distribution Automation #4 Marrs and Indiana Mounds circuits	2023		
14009601	Boonville	Distribution Automation	Electric Distribution	2023-Distribution Automation #5 Bowling Alley and Oak Dale School	2023		
13617312	Rockport	Distribution Capacitor Replacements	Electric Distribution	Folsomville CKT - CAP UPGRDE	2023		
13888655	Boonville	Distribution Capacitor Replacements	Electric Distribution	Hospital CKT - CAP UPGRDE	2023		
13888741	Evansville	Distribution Capacitor Replacements	Electric Distribution	MT Auburn CKT - CAP UPGRDE	2023		
13888784	Newburgh	Distribution Capacitor Replacements	Electric Distribution	Oak Grove Road CKT - CAP UPGRDE	2023		
13888787	Evansville	Distribution Capacitor Replacements	Electric Distribution	Outer Lincoln AVE CKT - CAP UPGRDE	2023		
13888795	Evansville	Distribution Capacitor Replacements	Electric Distribution	Thompson AVE CKT - CAP UPGRDE	2023		
13888800	Evansville	Distribution Capacitor Replacements	Electric Distribution	Villa Drive CKT - CAP UPGRDE	2023		
13888935	Evansville	Distribution Capacitor Replacements	Electric Distribution	Harmony Way CKT - CAP UPGRDE	2023		
13889018	Evansville	Distribution Capacitor Replacements	Electric Distribution	Kleitz Road CKT - CAP UPGRDE	2023		
13889048	Boonville	Distribution Capacitor Replacements Geomagnetic	Electric Distribution	Vanada CKT - CAP UPGRDE Geomagnetic	2023		
13970265	Oakland City	Disturbance Protection	Electric Distribution Substation	Disturbance Protection Replace arrester:	2023		
14080685	Mt. Vernon	Substation Arrester Replacements	Electric Transmission Substation	Point-transformer1 low side-Porcelain- Brown	2023		
14080686	Mt. Vernon	Substation Arrester Replacements	Electric Distribution Substation	Replace arrester: Wadesville Y76- Porcelain-Brown	2023		
13970641	Mt. Vernon	Substation Battery System Replacements	Electric Transmission Substation	Charger Replacement	2023		
13970646	Mt. Vernon	Substation Battery System Replacements	Electric Distribution Substation	Battery Replacement	2023		
13964324	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	COURT STREET 277 - 4860088 Replacement	2023		

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13964350	Dale	Substation Circuit Breaker Replacements	Electric Distribution Substation	DALE 100 - 4858836	2023		
13964357	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	DEVON 488 - 4727258	2023		
13964516	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	ELLIOTT TRANSMISSION STATION 400 - 4859157	2023		
13964517	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	ELLIOTT TRANSMISSION STATION 500 - 4859158	2023		
13965051	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	Green Oaks Sub SWGR #1 Convert	2023		
13965581	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	JASPER MAIN 177 - 4860105	2023		
13965845	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	NORTHWEST 277 - 4859661	2023		
13965868	Oakland City	Substation Circuit Breaker Replacements	Electric Distribution Substation	OAKLAND CITY 277 - 4859713	2023		
13965990	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	OHIO RIVER STATION 4800 - 4859340	2023		
13966065	Boonville	Substation Circuit Breaker Replacements	Electric Distribution Substation	Paradise Sub SWGR #1 Replace	2023		
13966079	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	PERRY TOWNSHIP 188 - 4852574	2023		
13966082	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	PERRY TOWNSHIP 288 - 4852172	2023		
13966091	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	PPG 177 - 4859769	2023		
13966094	Rockport	Substation Circuit Breaker Replacements	Electric Distribution Substation	ROCKPORT 388 - 4859684	2023		
13966201	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	SAINT HENRY 177 - 4859202	2023		
13966203	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	SAINT HENRY 277 - 4859204	2023		
13970132	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SUNBEAM 388 - 4858862	2023		
13970141	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SUNBEAM 488 - 4858837	2023		
13970222	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	WADESVILLE 188 - 4859596	2023		
13970223	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	WADESVILLE 288 - 4859241	2023		
13970227	Winslow	Substation Circuit Breaker Replacements	Electric Transmission Substation	WINSLOW SWITCHING STATION 377 - 4749484	2023		
13970654	Evansville	Substation Physical Security Upgrades	Electric Transmission Substation	Northwest Substation	2023		

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13964359	Evansville	Substation Transformer Replacements	Electric Distribution Substation	DEVON T1 - C05624- 51	2023		
13965307	Newburgh	Substation Transformer Replacements	Electric Distribution Substation	GRIMM ROAD T1 - L252380	2023		
13965325	Newburgh	Substation Transformer Replacements	Electric Distribution Substation	GRIMM ROAD T2 - M162327A	2023		
13966020	Evansville	Substation Transformer Replacements	Electric Distribution Substation	OHIO RIVER STATION T1 - 17479-101-01	2023		
13966086	Evansville	Substation Transformer Replacements	Electric Distribution Substation	PERRY TOWNSHIP T1 - L252788A	2023		
13966096	Rockport	Substation Transformer Replacements	Electric Distribution Substation	ROCKPORT T2 - PGP- 16752	2023		
13966190	Evansville	Substation Transformer Replacements	Electric Distribution Substation	SLAUGHTER AVENUE T1 - 9Z1080	2023		
13970090	Evansville	Substation Transformer Replacements	Electric Distribution Substation	STRINGTOWN T2 - 1925610101	2023		
13970162	Evansville	Substation Transformer Replacements	Electric Distribution Substation	SUNBEAM T1 - C46879- 1-1	2023		
13970225	Mt. Vernon	Substation Transformer Replacements	Electric Distribution Substation	WADESVILLE T1 - H888044	2023		
13964356	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	Arc Flash Relay PROT Deaconess (SWGR)	2023		
13965782	Rockport	System Protection Relay Upgrades	Electric Transmission Substation	Newtonville Y70 Y69-1 Y56-2 Y56-1	2023		
13965844	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL- NE 138kV Bus PROT UPGRDE	2023		
13965846	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL- Northwest 69kV Bus PROT UPGRDE	2023		
13966024	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL-ORS 126- 188-288-388-488	2023		
13752010	Evansville	Transmission Line Rebuilds	Electric Transmission	Z85-2 Grimm to Angel Mounds (3.2)	2023		
13519178	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Carriage House II Apt Cable REPL	2023		
13614247	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Village Lane Apartments Cable REPL	2023		
13616732	Evansville	Underground Cable Replacements and Looping	Electric Distribution	UG Cable REPL in Mater Dei Provincial	2023		
13617099	Evansville	Underground Cable Replacements and Looping	Electric Distribution	UG Cable REPL in Walling SUBD	2023		
13617463	Ft. Branch	Underground Cable Replacements and Looping	Electric Distribution	CR 1600N Lincoln City - Albin Rd	2023		

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13617508	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Wiltshire Cable REPL	2023		
13727431	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Brookshire Estates Cable REPL Phase I	2023		
13727440	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9	2023		
13727464	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Eastland Estates Cable REPL Phase I	2023		
13727475	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Green River Estates A Cable REPL Phase I	2023		
13727491	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Highridge SUBD Cable REPL	2023		
13727552	Evansville	Underground Cable Replacements and Looping	Electric Distribution	McCullough Cable REPL	2023		
13727581	Evansville	Underground Cable Replacements and Looping	Electric Distribution	North Lake Village Phase I Cable REPL	2023		
13727582	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Orchard Knoll Estates Cable REPL Phase I	2023		
13727586	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Peach Blossom SUBD Cable REPL	2023		
13727601	Evansville	Underground Cable Replacements and Looping	Electric Distribution	St. Joseph Cable REPL Phase I	2023		
13727635	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Tanglewood SUBD Cable REPL Phase I	2023		
13727666	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Town and Country Est Cable REPL Phase I	2023		
13727667	Evansville	Underground Cable Replacements and Looping	Electric Distribution	University Heights Cable REPL Phase I	2023		
13975765	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Westwood Hills Cable REPL	2023		
13506085	Evansville	Underground Network Upgrades	Electric Distribution	Repl Net Trans CM- 22 3000A Station N25	2023		
13617125	Evansville	Underground Network Upgrades	Electric Distribution	Replace Mulberry CKT 1 2 3 UG Phase VI	2023		
13617466	Evansville	Underground Network Upgrades	Electric Distribution	Repl Net Trans CM- 22 3000A Station N24	2023		

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14159759	Various	Wood Pole Replacements	Electric Distribution	2023 wood pole replacements	2023		
Not Applicable	Evansville	Advanced Distribution Management System	Electric Distribution	ADMS	2017-2019		
Not Applicable	Various	Advanced Metering Infrastructure	Electric Distribution	АМІ	2017-2020		
14039080	Evansville	East West Transmission Line	Electric Transmission	East to West 138kV Transmission Line	2019-2022		
13501706	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3Phase CKT Tie along Darnell School Rd			PSP- Future value can not be determined
13501929	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	STOCKWELL CKT 3PH repl copper Phase II			PSP- Future value can not be determined
13518714	Haubstadt	12kV Circuit Rebuilds and Looping	Electric Distribution	3PH OH CKT tie between two radial feeds			PSP- Future value can not be determined
13519161	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	SPRINGFIELD CKT 3PH repl copper PH II			PSP- Future value can not be determined
13613116	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Extend Ohio Township CKT to Epworth Rd			PSP- Future value can not be determined
13614502	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	CONCORD BLVD CKT 3PH repl copper			PSP- Future value can not be determined
13614853	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Reconductor along Boonville New Harmony Rd			PSP- Future value can not be determined
13616581	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	UNION TOWNSHIP 3PH repl copper PH			PSP- Future value can not be determined
13703653	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert ROSE HILL CKT exit from UG to OH			PSP- Future value can not be determined
13720962	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3PH OH tie between Armstrong and Hornville CKT			PSP- Future value can not be determined
13720965	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	3PH OH tie between Baseline CKT laterals			PSP- Future value can not be determined
13720968	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Blairsville CKT Repl 3PH repl copper conduit			PSP- Future value can not be determined
13726514	Ft. Branch	12kV Circuit Rebuilds and Looping	Electric Distribution	FORT BRANCH CKT 3PH repl copper Phase I			PSP- Future value can not be determined
13726516	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert FRAME ROAD CKT exit from UG to OH			PSP- Future value can not be determined
13726518	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	FRAME ROAD 3PH replace copper			PSP- Future value can not be determined
13726521	Haubstadt	12kV Circuit Rebuilds and Looping	Electric Distribution	HAUBSTADT CKT 3PH replace copper			PSP- Future value can not be determined
13726523	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	HEDDEN ROAD CKT 3PH replace copper			PSP- Future value can not be determined
13726527	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	HERITAGE CKT 3PH replace copper			PSP- Future value can not be determined
13726529	Dale	12kV Circuit Rebuilds and Looping	Electric Distribution	HOLLAND CKT 3PH repl copper Phase I			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13726533	Dale	12kV Circuit Rebuilds and Looping	Electric Distribution	HOLLAND CKT 3PH repl copper Phase II			PSP- Future value can not be determined
13726631	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	JENNER ROAD CKT 3PH replace copper			PSP- Future value can not be determined
13726633	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	KRATZVILLE RD 3PH repl copper Phase II			PSP- Future value can not be determined
13726679	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert McCUTCHANVILLE CKT exit to OH			PSP- Future value can not be determined
13726828	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	MT AUBURN CKT 3PH repl copper Phase II			PSP- Future value can not be determined
13726831	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	MT AUBURN CKT 3PH repl copper Phase III			PSP- Future value can not be determined
13726864	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	OAKDALE SCHOOL 3PH repl copper Phase			PSP- Future value can not be determined
13726873	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	PELZER CKT 3PH repl copper Phase II			PSP- Future value can not be determined
13726875	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert ROTHERWOOD AVE CKT exit to OH			PSP- Future value can not be determined
13726877	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	ROTHERWOOD AVE CKT 3PH replace copper			PSP- Future value can not be determined
13726886	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	WABASH CKT 3PH repl copper Phase I			PSP- Future value can not be determined
13726890	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	WADESVILLE CKT 3PH repl copper Phase I			PSP- Future value can not be determined
13726947	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	WADESVILLE CKT 3PH repl copper Phase II			PSP- Future value can not be determined
13883940	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert NEWBURGH CKT exit from UG to OH			PSP- Future value can not be determined
13883955	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert OLD BOONVILLE CKT exit to OH			PSP- Future value can not be determined
13883960	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert OLD PETERSBURGH exit to OH			PSP- Future value can not be determined
13883993	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert OUTER LINCOLN exit to OH			PSP- Future value can not be determined
13884004	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert PARKLAWN CKT exit from UG to OH			PSP- Future value can not be determined
14032943	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	ARMSTRONG CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14032971	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	CHRISNEY NORTH 3PH repl copper Phase I			PSP- Future value can not be determined
14032972	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	CHRISNEY NORTH 3PH repl copper Phase II			PSP- Future value can not be determined
14032973	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	CHRISNEY SOUTH 3PH repl copper Phase I			PSP- Future value can not be determined
14032974	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	CHRISNEY SOUTH 3PH repl copper Phase II			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14032975	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	City CKT - Replace copper conductor with aluminum			PSP- Future value can not be determined
14032976	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	CULVERSON 3PH repl copper Phase I			PSP- Future value can not be determined
14032977	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	DARMSTADT 3PH replace copper			PSP- Future value can not be determined
14032980	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	Edson and Indian Mounds CKT Tie Capacity UPGRDE			PSP- Future value can not be determined
14032982	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	FARMERSVILLE CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14032983	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	FILLMAN CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033013	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	FORD RD CKT 3PH repl copper PH I			PSP- Future value can not be determined
14033014	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	GOVERNOR CKT 3PH replace copper			PSP- Future value can not be determined
14033019	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	Green Springs CKT - Repl copper conductor			PSP- Future value can not be determined
14033026	Oakland City	12kV Circuit Rebuilds and Looping	Electric Distribution	HWY 64 CKT 3PH replace copper			PSP- Future value can not be determined
14033027	Newburgh	12kV Circuit Rebuilds and Looping	Electric Distribution	HWY 662 CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033028	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	HORNVILLE CKT 3PH replace copper			PSP- Future value can not be determined
14033030	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Convert 1PH to 3PH along Schenk Rd			PSP- Future value can not be determined
14033038	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	HWY 41 CKT 3PH replace copper			PSP- Future value can not be determined
14033039	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	INDIAN MOUNDS ROAD 3PH replace copper			PSP- Future value can not be determined
14033040	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	LAFAYETTE AVE 3PH repl copper Phase I			PSP- Future value can not be determined
14033041	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	LAFAYETTE AVE 3PH repl copper Phase II			PSP- Future value can not be determined
14033063	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	LINCOLN CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033064	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	LODGE AVE CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033065	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	Midtown Park CKT - Repl copper conductor			PSP- Future value can not be determined
14033066	Ft. Branch	12kV Circuit Rebuilds and Looping	Electric Distribution	MONTGOMERY CKT 3PH replace copper			PSP- Future value can not be determined
14033067	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	POLLACK AVE CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033069	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	POLLACK AVE CKT 3PH repl copper Phase II			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14033099	Francisco	12kV Circuit Rebuilds and Looping	Electric Distribution	PRINCETON FARMS 3PH replace copper			PSP- Future value can not be determined
14033121	Rockport	12kV Circuit Rebuilds and Looping	Electric Distribution	ROCKPORT CKT 3PH replace copper			PSP- Future value can not be determined
14033122	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	RUSH CREEK CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033123	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	RUSH CREEK CKT 3PH repl copper Phase II			PSP- Future value can not be determined
14033127	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	SAINT JOSEPH AVE 3PH repl copper			PSP- Future value can not be determined
14033128	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	SCALES LAKE CKT 3PH replace copper			PSP- Future value can not be determined
14033130	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	SEVENTH AVE_12 3PH repl copper Phase I			PSP- Future value can not be determined
14033131	Boonville	12kV Circuit Rebuilds and Looping	Electric Distribution	SHELTON RD CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033133	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	THOMPSON AVE CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033155	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	UNIONTOWN CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033156	Mt. Vernon	12kV Circuit Rebuilds and Looping	Electric Distribution	UNIONTOWN CKT 3PH repl copper Phase II			PSP- Future value can not be determined
14033159	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	VILLA DRIVE CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033160	Haubstadt	12kV Circuit Rebuilds and Looping	Electric Distribution	WARRENTON CKT 3PH repl copper Phase I			PSP- Future value can not be determined
14033161	Haubstadt	12kV Circuit Rebuilds and Looping	Electric Distribution	WARRENTON CKT 3PH repl copper Phase II			PSP- Future value can not be determined
14033162	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	VILLA DRIVE CKT 3PH repl copper Phase II			PSP- Future value can not be determined
14033163	Evansville	12kV Circuit Rebuilds and Looping	Electric Distribution	W COLUMBIA 3PH repl copper Ph I			PSP- Future value can not be determined
14034023	Dale	12kV Circuit Rebuilds and Looping	Electric Distribution	ABBEY CKT 3PH Replace Copper Conductor			PSP- Future value can not be determined
13613133	Evansville	4kV Conversions	Electric Distribution	Olmstead Ave circuit Conversion (Garvin Sub) PHI			PSP- Future value can not be determined
13613168	Evansville	4kV Conversions	Electric Distribution	STRINGTOWN CKT Conversion (Garvin Sub) PHI			PSP- Future value can not be determined
13965711	Evansville	4kV Conversions	Electric Distribution Substation	Mulberry Sub - 12 kV Addition-TRF #2			PSP- Future value can not be determined
13993840	Evansville	4kV Conversions	Electric Distribution	Diamond Ave CKT Conversion (Dixieland Sub) Ph I			PSP- Future value can not be determined
13993860	Mt. Vernon	4kV Conversions	Electric Distribution	Fuher Ford CKT Conversion (Water Street Sub)			PSP- Future value can not be determined
13993863	Evansville	4kV Conversions	Electric Distribution	Kentucky Ave CKT Conversion (Dixieland Sub) Ph I			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13996859	Evansville	4kV Conversions	Electric Distribution	STRINGTOWN CKT Conversion (Garvin Sub) PHII			PSP- Future value can not be determined
13996860	Evansville	4kV Conversions	Electric Distribution	STRINGTOWN CKT Conversion (Garvin Sub) PHIII			PSP- Future value can not be determined
13996864	Evansville	4kV Conversions	Electric Distribution	STRINGTOWN CKT Conversion (Garvin Sub) PHIV			PSP- Future value can not be determined
13996885	Evansville	4kV Conversions	Electric Distribution	Olmstead Ave circuit Conversion (Garvin Sub) PHII			PSP- Future value can not be determined
13996887	Evansville	4kV Conversions	Electric Distribution	Olmstead Ave circuit Conversion (Garvin Sub) PHIII			PSP- Future value can not be determined
14011918	Evansville	4kV Conversions	Electric Distribution	Olmstead Ave CKT Conversion (Garvin Sub) PHIV			PSP- Future value can not be determined
14044152	Evansville	4kV Conversions	Electric Distribution	Diamond Ave CKT Conversion (Dixieland Sub) Ph II			PSP- Future value can not be determined
14044159	Evansville	4kV Conversions	Electric Distribution	Kentucky Ave CKT Conversion (Dixieland Sub) Ph II			PSP- Future value can not be determined
14044160	Evansville	4kV Conversions	Electric Distribution	Kentucky Ave CKT Conversion (Dixieland Sub) Ph III			PSP- Future value can not be determined
13888773	Evansville	Distribution Capacitor Replacements	Electric Distribution	North Central CKT - CAP UPGRDE			PSP- Future value can not be determined
13888776	Evansville	Distribution Capacitor Replacements	Electric Distribution	North Park CKT - CAP UPGRDE			PSP- Future value can not be determined
13888785	Boonville	Distribution Capacitor Replacements	Electric Distribution	Oakdale School CKT - CAP UPGRDE			PSP- Future value can not be determined
13888903	Rockport	Distribution Capacitor Replacements	Electric Distribution	Chrisney North CKT - CAP UPGRDE			PSP- Future value can not be determined
13889045	Boonville	Distribution Capacitor Replacements	Electric Distribution	Pelzer CKT - CAP UPGRDE			PSP- Future value can not be determined
14060233	Mt. Vernon	Distribution Capacitor Replacements	Electric Distribution	Wabash CKT - CAP UPGRDE			PSP- Future value can not be determined
13970318	Dale	Instrument Transformer Replacements	Electric Transmission Substation	Saint Henry PT REPLs			PSP- Future value can not be determined
13970342	Rockport	Instrument Transformer Replacements	Electric Transmission Substation	Tell City PT REPLs			PSP- Future value can not be determined
13970261	Oakland City	Optical Ground Wire	Electric Transmission	OPGW - Toyota to Francisco(Z75) 9.1 mi			PSP- Future value can not be determined
13964566	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	FOLZ ROAD 388 - 4859329			PSP- Future value can not be determined
13965899	Oakland City	Substation Circuit Breaker Replacements	Electric Distribution Substation	Replace OAKLAND CITY 188			PSP- Future value can not be determined
14034457	Winslow	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE CATO OCB			PSP- Future value can not be determined
14034474	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	REPL of COLONIAL TEMP 12kV CKT Breaker			PSP- Future value can not be determined

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14034479	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	REPLACE COURT STREET OCB 177			PSP- Future value can not be determined
14034486	Dale	Substation Circuit Breaker Replacements	Electric Distribution Substation	Dale Sub SWGR #1 Convert			PSP- Future value can not be determined
14034498	Dale	Substation Circuit Breaker Replacements	Electric Distribution Substation	Dale Sub SWGR #2 Convert			PSP- Future value can not be determined
14034503	Evansville	Substation Circuit Breaker	Electric Distribution Substation	DEACONESS 166 - 4859237			PSP- Future value can not be
14034507	Evansville	Replacements Substation Circuit Breaker	Electric Distribution Substation	DEVON 588 - 4725333			determined PSP- Future value can not be
14034508	Holland	Replacements Substation Circuit Breaker	Electric Transmission Substation	REPLACE DUBOIS OCB			determined PSP- Future value can not be
14034512	Holland	Replacements Substation Circuit Breaker	Electric Transmission Substation	REPLACE DUBOIS OCB			determined PSP- Future value can not be
14034513	Holland	Replacements Substation Circuit Breaker	Electric Transmission Substation	REPLACE DUBOIS OCB			determined PSP- Future value can not be
14034516	Holland	Replacements Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE DUBOIS OCB 400			determined PSP- Future value can not be determined
14034517	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE DUBOIS OCB 500			PSP- Future value can not be determined
14034523	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE DUBOIS OCB 2000			PSP- Future value can not be determined
14034527	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE DUBOIS OCB 3000			PSP- Future value can not be determined
14035071	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE GRANDVIEW TS 138 OCB 2177			PSP- Future value can not be determined
14035073	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE GRANDVIEW TS 138 OCB 2377			PSP- Future value can not be determined
14035082	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE JASPER MAIN OCB 277			PSP- Future value can not be determined
14035084	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	LOUIS ALLIS 388 - 4858964			PSP- Future value can not be determined
14035116	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	LOUIS ALLIS 488 - 4852155			PSP- Future value can not be determined
14035118	Boonville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE LYNNVILLE OCB 577			PSP- Future value can not be determined
14035120	Boonville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE LYNNVILLE OCB 677			PSP- Future value can not be determined
14035211	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE MT. VERNON TS OCB 126			PSP- Future value can not be determined
14035215	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE MT. VERNON TS OCB 366			PSP- Future value can not be determined
14035217	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE MT. VERNON TS OCB 388			PSP- Future value can not be determined
14035218	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE MT. VERNON TS OCB 466			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14035219	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE MT. VERNON TS OCB 1000			PSP- Future value can not be determined
14035248	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE MT. VERNON TS OCB 2000			PSP- Future value can not be determined
14035249	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE MT. VERNON TS OCB 5000			PSP- Future value can not be determined
14035274	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE MT. VERNON TS OCB 6000			PSP- Future value can not be determined
14035276	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPL of NEWTONVILLE 69kV CKT Breaker 466			PSP- Future value can not be determined
14035277	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NEWTONVILLE OCB 1199			PSP- Future value can not be determined
14035278	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NEWTONVILLE OCB 1299			PSP- Future value can not be determined
14035285	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NEWTONVILLE OCB 1366			PSP- Future value can not be determined
14035287	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NEWTONVILLE OCB 1377			PSP- Future value can not be determined
14035292	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NEWTONVILLE OCB 2188			PSP- Future value can not be determined
14035293	Rockport	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NEWTONVILLE OCB 2288			PSP- Future value can not be determined
14035295	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHEAST 138KV OCB 2126			PSP- Future value can not be determined
14035296	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHEAST 138KV OCB 2188			PSP- Future value can not be determined
14035303	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHEAST 138KV OCB 2199			PSP- Future value can not be determined
14035304	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHEAST 138KV OCB 2288			PSP- Future value can not be determined
14035305	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHEAST 138KV OCB 2299			PSP- Future value can not be determined
14035306	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHEAST 138KV OCB 2388			PSP- Future value can not be determined
14035308	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHEAST 138KV OCB 2488			PSP- Future value can not be determined
14035311	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHEAST 138KV OCB 2588			PSP- Future value can not be determined
14035313	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHWEST 138KV OCB 1000			PSP- Future value can not be determined
14035314	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHWEST 138KV OCB 2000			PSP- Future value can not be determined
14035316	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHWEST 138KV OCB 3000			PSP- Future value can not be determined
14035317	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHWEST 138KV OCB 4000			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14035318	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHWEST 138KV OCB 5000			PSP- Future value can not be determined
14035321	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHWEST 138KV OCB 6000			PSP- Future value can not be determined
14035345	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE NORTHWEST 138KV OCB 8000			PSP- Future value can not be determined
14035358	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	OHIO RIVER STATION 100 - 4859353			PSP- Future value can not be determined
14035387	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	OHIO RIVER STATION 166 - 4859352			PSP- Future value can not be determined
14035388	Evansville	Substation Circuit Breaker	Electric Distribution Substation	OHIO RIVER STATION 188 - 4859356			PSP- Future value can not be
14035389	Evansville	Replacements Substation Circuit Breaker	Electric Distribution Substation	OHIO RIVER STATION 266 - 4859354			determined PSP- Future value can not be
14035391	Evansville	Replacements Substation Circuit Breaker	Electric Distribution Substation	OHIO RIVER STATION 288 - 4859355			determined PSP- Future value can not be
14035393	Evansville	Replacements Substation Circuit Breaker Replacements	Electric Distribution Substation	OHIO RIVER STATION 388 - 4859357			determined PSP- Future value can not be
14035394	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	OHIO RIVER STATION 488 - 4859351			determined PSP- Future value can not be determined
14035422	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	PLYMOUTH 16 - 4859333			PSP- Future value can not be determined
14035425	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	PLYMOUTH 26 - 4859334			PSP- Future value can not be determined
14038824	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	PLYMOUTH 36 - 4859335			PSP- Future value can not be determined
14038828	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	REPL of POINT 12kV CKT Breaker 188			PSP- Future value can not be determined
14038829	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	REPL of POINT 12kV CKT Breaker 288			PSP- Future value can not be determined
14038830	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE PPG OCB 277			PSP- Future value can not be determined
14038897	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE ST. HENRY OCB 177			PSP- Future value can not be determined
14038898	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE ST. HENRY OCB 188			PSP- Future value can not be determined
14038901	Holland	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE ST. HENRY OCB 277			PSP- Future value can not be determined
14038902	Dale	Substation Circuit Breaker Replacements	Electric Distribution Substation	REPL of SAINT MEINRAD 12kV CKT Breaker 2			PSP- Future value can not be determined
14038904	Dale	Substation Circuit Breaker Replacements	Electric Distribution Substation	REPL of SAINT MEINRAD 12kVCKT Breaker 1			PSP- Future value can not be determined
14038907	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SMYTHE SUBSTATION 100 - 4859714			PSP- Future value can not be determined
14038908	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SMYTHE SUBSTATION 488 - 4858824			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14038912	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	WATER STREET 16 - 4859240			PSP- Future value can not be determined
14038913	Stendel	Substation Circuit Breaker Replacements	Electric Distribution Substation	REPL of STENDAL 12kV CKT Breaker			PSP- Future value can not be determined
14038916	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	SUNBEAM 288 - 4858854			PSP- Future value can not be determined
14038917	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	TEKOPPEL 100 - 4858877			PSP- Future value can not be determined
14038918	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	TEKOPPEL 388 - 4858880			PSP- Future value can not be determined
14038920	Evansville	Substation Circuit Breaker Replacements	Electric Distribution Substation	TEKOPPEL 488 - 4858871			PSP- Future value can not be determined
14038947	Mt. Vernon	Substation Circuit Breaker Replacements	Electric Distribution Substation	WATER STREET 26 - 4859239			PSP- Future value can not be determined
14038993	Winslow	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE WINSLOW OCB 377			PSP- Future value can not be determined
14039010	Winslow	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE WINSLOW OCB 477			PSP- Future value can not be determined
14039078	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE BROWN 138KV OCB 2300			PSP- Future value can not be determined
14039079	Evansville	Substation Circuit Breaker Replacements	Electric Transmission Substation	REPLACE BROWN 138KV OCB 2388			PSP- Future value can not be determined
13626450	Evansville	Substation Physical Security Upgrades	Electric Transmission Substation	AB Brown 138 Substation			PSP- Future value can not be determined
13970648	Newburgh	Substation Physical Security Upgrades	Electric Transmission Substation	Culley 138 Substation			PSP- Future value can not be determined
13970650	Oakland City	Substation Physical Security Upgrades	Electric Transmission Substation	Francisco Substation			PSP- Future value can not be determined
13970651	Mt. Vernon	Substation Physical Security Upgrades	Electric Transmission Substation	Mount Vernon Substation			PSP- Future value can not be determined
13970655	Mt. Vernon	Substation Physical Security Upgrades	Electric Transmission Substation	Point Substation			PSP- Future value can not be determined
13970656	Newburgh	Substation Physical Security Upgrades	Electric Transmission Substation	Warrick Substation			PSP- Future value can not be determined
13964568	Evansville	Substation Transformer Replacements	Electric Distribution Substation	FOLZ ROAD T1 - RA720704			PSP- Future value can not be determined
13964598	Evansville	Substation Transformer Replacements	Electric Distribution Substation	FOLZ ROAD T2 - A5418			PSP- Future value can not be determined
13965745	Evansville	Substation Transformer Replacements	Electric Distribution Substation	REPL of MULBERRY SUB Dist. Network T5			PSP- Future value can not be determined
13965803	Rockport	Substation Transformer Replacements	Electric Transmission Substation	REPL of NEWTONVILLE Trans SUBSTA TRF 2			PSP- Future value can not be determined
13965804	Rockport	Substation Transformer Replacements	Electric Transmission Substation	REPL of NEWTONVILLE Trans SUBSTA TRF 3			PSP- Future value can not be determined
13966023	Evansville	Substation Transformer Replacements	Electric Distribution Substation	OHIO RIVER STATION T2 - G1580-01			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13970212	Boonville	Substation Transformer Replacements	Electric Distribution Substation	REPL of VIGO Dist. Substation TRF			PSP- Future value can not be determined
14034434	Mt. Vernon	Substation Transformer Replacements	Electric Distribution Substation	REPL of BENTON CORNER Dist. SUBSTA TRF			PSP- Future value can not be determined
14034446	Evansville	Substation Transformer Replacements	Electric Distribution Substation	REPL of BERRY PLASTICS Dist. SUBSTA			PSP- Future value can not be determined
14034450	Boonville	Substation Transformer	Electric Distribution Substation	REPL of BOONVILLE Dist. Substation TRF			PSP- Future value can not be
14034458	Winslow	Replacements Substation Transformer	Electric Transmission Substation	REPL of CATO Trans Substation TRF			determined PSP- Future value can not be
14034460	Santa Clause	Replacements Substation Transformer	Electric Distribution Substation	REPL of CHRISNEY Substation TRF			determined PSP- Future value can not be
14034477	Mt. Vernon	Replacements Substation Transformer	Electric Distribution Substation	REPL of COUNTY LINE Dist. SUBSTA TRF			determined PSP- Future value can not be
14034502	Dale	Replacements Substation Transformer	Electric Distribution Substation	REPL of DALE Dist. Substation TRF			determined PSP- Future value can not be
14034531	Holland	Replacements Substation Transformer	Electric Transmission Substation	REPL of DUBOIS Trans Substation TRF 1			determined PSP- Future value can not be
14034533	Holland	Replacements Substation Transformer Replacements	Electric Transmission Substation	REPL of DUBOIS Trans Substation TRF 2			determined PSP- Future value can not be determined
14035079	Evansville	Substation Transformer Replacements	Electric Transmission Substation	REPL of HEIDELBACH Trans Substation TRF			PSP- Future value can not be determined
14035121	Boonville	Substation Transformer Replacements	Electric Transmission Substation	REPL of LYNNVILLE Dist. Substation TRF			PSP- Future value can not be determined
14035122	Mt. Vernon	Substation Transformer Replacements	Electric Distribution Substation	REPL of MEAD JOHNSON PARK Dist. SUBSTA TRF			PSP- Future value can not be determined
14035192	Mt. Vernon	Substation Transformer Replacements	Electric Transmission Substation	REPL of MT VERNON MAIN SUBSTA TRF 3			PSP- Future value can not be determined
14035275	Mt. Vernon	Substation Transformer Replacements	Electric Distribution Substation	REPL of NEW HARM SW STAT Dist. SUBSTA TRF			PSP- Future value can not be determined
14035351	Oakland City	Substation	Electric Distribution Substation	REPL of OAKLAND CITY Dist. SUBSTA TRF			PSP- Future value can not be determined
14038914	Stendel	Substation Transformer Replacements	Electric Distribution Substation	REPL of STENDAL Dist. Substation TRF			PSP- Future value can not be determined
14039051	Newburgh	Substation Transformer Replacements	Electric Distribution Substation	REPL of YANKEETOWN Dist. Substation TRF			PSP- Future value can not be determined
13625678	Evansville	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	Distribution SCADA - Colonial Temp Sub			PSP- Future value can not be determined
13964287	Evansville	Supervisory Control and Data Acquisition Upgrades	Electric Distribution Substation	UG Network SCADA- Distribution Civic			PSP- Future value can not be determined
14356772	Evansville	Supervisory Control and Data Acquisition Upgrades	Electric Transmission Substation	Ohio River Station RTU Replacement			PSP- Future value can not be determined
13625633	Boonville	System Protection Relay Upgrades	Electric Distribution Substation	Arc Flash Relay PROT Boonville PIO			PSP- Future value can not be determined

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13626388	Mt. Vernon	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL-NEW HARM Y33 L10669 (HE)			PSP- Future value can not be determined
13965604	Boonville	System Protection Relay Upgrades	Electric Transmission Substation	Relay REPL-Lynnville Y57 Y64 Y68 Y36			PSP- Future value can not be determined
13965900	Oakland City	System Protection Relay Upgrades	Electric Distribution Substation	Oakland City Y52-2 Y52-3 Y36 HWY64 12kV			PSP- Future value can not be determined
13966193	Evansville	System Protection Relay Upgrades	Electric Transmission Substation	Relay replacement- Smythe Y25-1 Y25-2 Y42			PSP- Future value can not be determined
14035396	Evansville	System Protection Relay Upgrades	Electric Distribution Substation	AutoSect - Perry Twp. Tap Y32			PSP- Future value can not be determined
14312120	Evansville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Whirlpool 166 266 366			PSP- Future value can not be determined
14312126	Evansville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement USI 488			PSP- Future value can not be determined
14312129	Evansville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Tekoppel 100 188 388 488			PSP- Future value can not be determined
14312132	Mt. Vernon	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Southwind 188			PSP- Future value can not be determined
14312136	Evansville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Slaughter 688			PSP- Future value can not be determined
14312141	Evansville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Oak Grove Road 188 288			PSP- Future value can not be determined
14312142	Evansville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Hillsdale 188 388			PSP- Future value can not be determined
14312143	Evansville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Folz Rd 488			PSP- Future value can not be determined
14312148	Boonville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Degonia 188 288			PSP- Future value can not be determined
14312149	Evansville	System Protection Relay Upgrades	Electric Distribution	Relay Replacement Azteca T1			PSP- Future value can not be determined
13751962	Evansville	Transmission Line Looping	Electric Distribution Substation	Garvin Substation Mod for Loop Feed			PSP- Future value can not be determined
13751968	Evansville	Transmission Line Looping	Electric Transmission	Y43_51 - Loop for Garvin Substation (No OPGW Required)			PSP- Future value can not be determined
13751982	Newburgh	Transmission Line Looping	Electric Distribution Substation	Broadview Sub Reconfigure 69 kV SW & Substation Feed			PSP- Future value can not be determined
13751983	Evansville	Transmission Line Looping	Electric Transmission Substation	Scott Sub New Z71 Line Terminal			PSP- Future value can not be determined
13751984	Ft. Branch	Transmission Line Looping	Electric Transmission Substation	Toyota Sub New Z71 Line Terminal			PSP- Future value can not be determined
13751997	Evansville	Transmission Line Looping	Electric Distribution Substation	Eastland Substation MOD for Loop Feed			PSP- Future value can not be determined
13751998	Ft. Branch	Transmission Line Looping	Electric Transmission	Z71 Scott to Toyota 138kV line-Phase I			PSP- Future value can not be determined

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13752002	Haubstadt	Transmission Line Looping	Electric Distribution Substation	Short Single Trans Line Stations LOOP St Wendel			PSP- Future value can not be determined
13752003	Evansville	Transmission Line Looping	Electric Transmission	Y42 Loop for Eastland Sub to Y58 (0.6 mi) (Incl w_OPGW plan)			PSP- Future value can not be determined
13752005	Ft. Branch	Transmission Line Looping	Electric Transmission	Z71 Scott to Toyota 138kV line-Phase II			PSP- Future value can not be determined
13970252	Mt. Vernon	Transmission Line Looping	Electric Transmission	Y32 Loop for Perry Twp. Sub (Incl w_OPGW plan)			PSP- Future value can not be determined
14035398	Evansville	Transmission Line Looping	Electric Distribution Substation	Perry Twp. Substation MOD for Loop Feed			PSP- Future value can not be determined
13626464	Mt. Vernon	Transmission Line Rebuilds	Electric Transmission	Y32 Mead Jo to Mead Jo Tap Reconductor (0.9 mi) (No OPGW Required)			PSP- Future value can not be determined
13751965	Winslow	Transmission Line Rebuilds	Electric Transmission	Y36 Winslow to SR61- E 800S (with OPGW)(4.6 miles)			PSP- Future value can not be determined
13751967	Winslow	Transmission Line Rebuilds	Electric Transmission	Y36 Lynnville to SR61- E 800S (with OPGW)(4.98 miles)			PSP- Future value can not be determined
13751986	Mt. Vernon	Transmission Line Rebuilds	Electric Transmission	Y31 Leonard Rd to Z- 93 Rebuild (6.8 miles) (No OPGW required)			PSP- Future value can not be determined
13751991	Oakland City	Transmission Line Rebuilds	Electric Transmission	Y35 Rebuild Kings - Oakland City (13.2 mi) w_OPGW			PSP- Future value can not be determined
13752000	Stendel	Transmission Line Rebuilds	Electric Transmission	Z84 Pole Replacement Duff-IPL (19.6 mi)			PSP- Future value can not be determined
13752004	Boonville	Transmission Line Rebuilds	Electric Transmission	Y68&Y77 Castle to Lynnville Meter (4.8 mi) (No OPGW required)			PSP- Future value can not be determined
13752008	Stendel	Transmission Line Rebuilds	Electric Transmission	Z84 Pole Replacement Duff-Dubois (2.7 mi)			PSP- Future value can not be determined
14039077	Mt. Vernon	Transmission Line Rebuilds	Electric Transmission	Z94 AB Brown to Mt Vernon (13.6 mi)			PSP- Future value can not be determined
14039102	Dale	Transmission Line Rebuilds	Electric Transmission	Y67-2 Rebuild Dubois- Huntingburg (3.5 mi) w_OPGW			PSP- Future value can not be determined
13615324	Evansville	Underground Cable Replacements and Looping	Electric Distribution	UG Cable REPL in Autumn Winds			PSP- Future value can not be determined
13616730	Evansville	Underground Cable Replacements and Looping	Electric Distribution	UG Cable REPL in Lindar			PSP- Future value can not be determined
13616844	Evansville	Underground Cable Replacements and Looping	Electric Distribution	UG Cable REPL in Valley Rose			PSP- Future value can not be determined
13616903	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	UG Cable REPL in Andrea Court SUBD			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13617019	Evansville	Underground Cable Replacements and Looping	Electric Distribution	UG Cable REPL in Jasper			PSP- Future value can not be determined
13617026	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Lakeside Terrace Estates Cable REPL			PSP- Future value can not be determined
13727429	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Bohannon Estates Cable REPL			PSP- Future value can not be determined
13727442	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Char Lee Estates Cable REPL			PSP- Future value can not be determined
13727447	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Charter Oaks Apartments Cable REPL			PSP- Future value can not be determined
13727449	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Cinnamon Tree Cable REPL			PSP- Future value can not be determined
13727452	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Crossvalley Cable REPL			PSP- Future value can not be determined
13727469	Evansville	Underground Cable Replacements and Looping	Electric Distribution	ENT ACRES Cable REPL			PSP- Future value can not be determined
13727485	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Heritage Hill Cable REPL Phase I			PSP- Future value can not be determined
13727494	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Hillside Terrace Cable REPL			PSP- Future value can not be determined
13727536	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Jeffrey Court Cable REPL			PSP- Future value can not be determined
13727538	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Lake Placid Estates Cable REPL			PSP- Future value can not be determined
13727549	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Malibu Park Cable REPL			PSP- Future value can not be determined
13727555	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Midway Acres Cable REPL			PSP- Future value can not be determined
13727577	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Mullens Estates Cable REPL			PSP- Future value can not be determined
13727584	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Orchard Trail Cable REPL			PSP- Future value can not be determined
13727589	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13727590	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Princeton Court Apts Cable REPL			PSP- Future value can not be determined
13727598	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Rosewood SUBD Cable REPL			PSP- Future value can not be determined
13727599	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Sahara Place II Cable REPL			PSP- Future value can not be determined
13727602	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Schnee SUBD Cable REPL			PSP- Future value can not be determined
13727604	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Solarbron Pointe Cable REPL PhI			PSP- Future value can not be determined
13727611	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Spring Street Cable REPL			PSP- Future value can not be determined
13727634	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Tall Timbers SUBD Cable REPL			PSP- Future value can not be determined
13727661	Evansville	Underground Cable Replacements and Looping	Electric Distribution	The Ridge SUBD Cable REPL			PSP- Future value can not be determined
13727664	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Timberlake on Kratzville Cable REPL			PSP- Future value can not be determined
13727701	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Woods Tower Cable REPL			PSP- Future value can not be determined
13727703	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Wyndclyff Cable REPL			PSP- Future value can not be determined
13810748	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Country Club Est Cable REPL Phase II			PSP- Future value can not be determined
13990994	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Solarbron Pointe Cable REPL PhII			PSP- Future value can not be determined
13993896	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Airport Industrial Park Cable REPL Phase I			PSP- Future value can not be determined
13993908	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Alsop Cable REPL			PSP- Future value can not be determined
13993910	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Avondale Apts Cable REPL			PSP- Future value can not be determined
13993911	Evansville	Underground Cable Replacements and Looping	Electric Distribution	BBR Cable REPL			PSP- Future value can not be determined

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13993912	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Bluegrass Farms SUBD Cable REPL Phase I			PSP- Future value can not be determined
13993913	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Bentwood Estates Cable REPL Phase I			PSP- Future value can not be determined
13993914	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Browning Rd. Estates Cable REPL			PSP- Future value can not be determined
13993915	Boonville	Underground Cable Replacements and Looping	Electric Distribution	Cedar Hill Cable REPL			PSP- Future value can not be determined
13993918	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Chapel Hill Cable REPL			PSP- Future value can not be determined
13993919	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Charles Lawrence Cable REPL			PSP- Future value can not be determined
13993943	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Connie's Place SUBD Cable REPL			PSP- Future value can not be determined
13993944	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Country Trace Cable REPL			PSP- Future value can not be determined
13993945	Boonville	Underground Cable Replacements and Looping	Electric Distribution	Crescent Hills Cable REPL			PSP- Future value can not be determined
13995570	Evansville	Underground Cable Replacements and Looping	Electric Distribution	UG Cable REPL in Devonshire I			PSP- Future value can not be determined
13995574	Evansville	Underground Cable Replacements and Looping	Electric Distribution	E And K Cable REPL			PSP- Future value can not be determined
13995575	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Fehr SUBD Cable REPL			PSP- Future value can not be determined
13995605	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Harmony Woods Cable REPL			PSP- Future value can not be determined
13995608	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Indian Woods Apartments Cable REPL Phase I			PSP- Future value can not be determined
13995610	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Indian Woods Apartments Cable REPL Phase II			PSP- Future value can not be determined
13995612	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Kenosha Hills Cable REPL Phase I			PSP- Future value can not be determined
13995615	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Kirkwood Lake Estates Cable REPL			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13995620	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Locust Industrial Cable REPL			PSP- Future value can not be determined
13995621	Boonville	Underground Cable Replacements and Looping	Electric Distribution	Maple Heights Cable REPL			PSP- Future value can not be determined
13995647	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Maxwell Place Cable REPL			PSP- Future value can not be determined
13995648	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Morgan Center Cable REPL			PSP- Future value can not be determined
13995649	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Moss Creek Cable REPL Phase I			PSP- Future value can not be determined
13995652	Evansville	Underground Cable Replacements and Looping	Electric Distribution	North Lake Village Phase II Cable REPL			PSP- Future value can not be determined
13995653	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Oak Hill Terrace Etc. Cable REPL Phase I			PSP- Future value can not be determined
13995654	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Oak Meadows Cable REPL Phase I			PSP- Future value can not be determined
13995656	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Oak Ridge SUBD Cable REPL			PSP- Future value can not be determined
13995657	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Oak View Place Cable REPL			PSP- Future value can not be determined
13995682	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Pine Lake Estates Cable REPL			PSP- Future value can not be determined
13995684	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Plaza East Cable REPL			PSP- Future value can not be determined
13995686	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Pleasant Acres Cable REPL			PSP- Future value can not be determined
13995688	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Powers Place Cable REPL Phase I			PSP- Future value can not be determined
13995689	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Sugar Mill Creek Cable REPL Phase II			PSP- Future value can not be determined
13995690	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Summit Place Cable REPL			PSP- Future value can not be determined
13995714	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Sycamore Lake SUBD Cable REPL			PSP- Future value can not be determined

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13995715	Evansville	Underground Cable Replacements and Looping	Electric Distribution	The Lofts Cable REPL			PSP- Future value can not be determined
13995716	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Timbers Apts Cable REPL			PSP- Future value can not be determined
13995717	Evansville	Underground Cable Replacements and Looping	Electric Distribution	University Shopping Cable REPL Phase I			PSP- Future value can not be determined
13995718	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Westward Estates Cable REPL			PSP- Future value can not be determined
13995720	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Whispering Hills Cable REPL Phase I			PSP- Future value can not be determined
13995727	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Windsong Cable REPL			PSP- Future value can not be determined
13995728	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Woodward Place Cable REPL			PSP- Future value can not be determined
13995729	Evansville	Underground Cable Replacements and Looping	Electric Distribution	York Harris SUBD Cable REPL			PSP- Future value can not be determined
14034047	Evansville	Underground Cable Replacements and Looping	Electric Distribution	East Meade Cable REPL			PSP- Future value can not be determined
14034049	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Eastside Industrial Cable REPL			PSP- Future value can not be determined
14034050	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Foxfire West Cable REPL			PSP- Future value can not be determined
14034052	Evansville	Underground Cable Replacements and Looping	Electric Distribution	German Pines Cable REPL			PSP- Future value can not be determined
14034053	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Green River Estates B Cable REPL Phase I			PSP- Future value can not be determined
14034055	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Ashwood Cable REPL			PSP- Future value can not be determined
14034057	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Carter Heights SUBD Cable REPL			PSP- Future value can not be determined
14034058	Haubstadt	Underground Cable Replacements and Looping	Electric Distribution	Columbia Village SUBD Cable REPL			PSP- Future value can not be determined
14034062	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR PMH-9			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14034063	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Harbortown SUBD Cable REPL			PSP- Future value can not be determined
14034065	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Harmony Manor Cable REPL			PSP- Future value can not be determined
14034066	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Heathmoore Cable REPL			PSP- Future value can not be determined
14034067	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Key West SUBD Cable REPL			PSP- Future value can not be determined
14034071	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Lant Manor Cable REPL Phase I			PSP- Future value can not be determined
14034083	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Lindauer Manor Apts Cable REPL			PSP- Future value can not be determined
14034084	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR Unknown			PSP- Future value can not be determined
14034086	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Locust Square Cable REPL			PSP- Future value can not be determined
14034088	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Mission Viejo Cable REPL			PSP- Future value can not be determined
14034090	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Morgan Estates Cable REPL			PSP- Future value can not be determined
14034092	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Brookview and Mt. Ashley Cable REPL Phase I			PSP- Future value can not be determined
14034093	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Normandy Arms Cable REPL			PSP- Future value can not be determined
14034096	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Plantation Estates Cable REPL Phase I			PSP- Future value can not be determined
14034097	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Sandalwood Cable REPL			PSP- Future value can not be determined
14034098	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Simon Kenton Cable REPL			PSP- Future value can not be determined
14034100	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Southwind Apartments Cable REPL			PSP- Future value can not be determined
14034104	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Replace 600 Amp Live Front SWGR Unknown			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14034105	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Henze Rd- Cable Repl			PSP- Future value can not be determined
14034106	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Woodland Condos Cable REPL			PSP- Future value can not be determined
14034107	Boonville	Underground Cable Replacements and Looping	Electric Distribution	Old Purdu Sub Urd Cable Repl			PSP- Future value can not be determined
14034108	Boonville	Underground Cable Replacements and Looping	Electric Distribution	Squire Estates Urd Cable Repl			PSP- Future value can not be determined
14034110	Boonville	Underground Cable Replacements and Looping	Electric Distribution	Country Rd Cable Repl			PSP- Future value can not be determined
14034149	Boonville	Underground Cable Replacements and Looping	Electric Distribution	Dogwood Lane- Shelton Road Cable Repl			PSP- Future value can not be determined
14034179	Rockport	Underground Cable Replacements and Looping	Electric Distribution	Lincoln State Park Ph I			PSP- Future value can not be determined
14034180	Rockport	Underground Cable Replacements and Looping	Electric Distribution	Lincoln State Park Ph			PSP- Future value can not be determined
14034181	Boonville	Underground Cable Replacements and Looping	Electric Distribution	Wildwood Dr Urd Repl			PSP- Future value can not be determined
14034192	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Framewood Estates Ph I			PSP- Future value can not be determined
14034193	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Framewood Estates Ph II			PSP- Future value can not be determined
14034222	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Old Stone Sub Ph I			PSP- Future value can not be determined
14034223	Newburgh	Underground Cable Replacements and Looping	Electric Distribution	Old Stone Sub Ph II			PSP- Future value can not be determined
14034225	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Indiana Port-Mt Vernon Cable Repl			PSP- Future value can not be determined
14034226	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Nation Rd and Alderson Ln-Cable Repl			PSP- Future value can not be determined
14034234	Mt. Vernon	Underground Cable Replacements and Looping	Electric Distribution	Hidden Valley Sub Cable Repl			PSP- Future value can not be determined
14034236	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Schroeder Sub Cable Repl			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
14034248	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Old Orchard Green Lane Cable Repl			PSP- Future value can not be determined
14034249	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Wood Ridge Dr Cable Repl			PSP- Future value can not be determined
14034251	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Eastlake Sub Cable Repl			PSP- Future value can not be determined
14034253	Evansville	Underground Cable Replacements and Looping	Electric Distribution	Char Mar Estates Cable Repl			PSP- Future value can not be determined
13960254	Santa Clause	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2430			PSP- Future value can not be determined
13960373	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2045, D2045			PSP- Future value can not be determined
13960375	Winslow	Underslung Replacements	Electric Distribution	Convert Ex Inline switch To a GOAB D3203, D1699			PSP- Future value can not be determined
13960384	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switchitch To a GOAB D1862, D1913, D2364			PSP- Future value can not be determined
13960389	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch To a GOAB D1344, D3078, D1103, D1123, D1350, D1104, D1221, D1987, D2207			PSP- Future value can not be determined
13960390	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch To a GOAB D2666, D2070, D2069, D2665, D1041, D1243, D1248, D2059			PSP- Future value can not be determined
13960398	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch To a GOAB D1014, D1004, D1036			PSP- Future value can not be determined
13960401	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to A GOAB D2021, D1740, D1851, D2093, D2171, D2189			PSP- Future value can not be determined
13960415	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1838, D1970			PSP- Future value can not be determined
13960416	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2118, D2120, D2121, D2123, D2127, D2128, D2130, D2131, D2133			PSP- Future value can not be determined
13960418	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB ABS277, ABS288			PSP- Future value can not be determined
13960433	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1229			PSP- Future value can not be determined

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13960436	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3016, D3083, D1299, D1839, D3004, D1256, D1257, D1259, D1298, D3001, D3007, D3013			PSP- Future value can not be determined
13960438	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1840, D1253, D1846, D1250, D1251, D1844, D2449			PSP- Future value can not be determined
13960447	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1265			PSP- Future value can not be determined
13960449	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1979, D1271, D1270, D1276, D1979			PSP- Future value can not be determined
13960453	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2039, D2107, D1679, D3075, D1615, D1616, D3049			PSP- Future value can not be determined
13960611	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2433			PSP- Future value can not be determined
13960612	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1955, D1278, D1279, D1280, D1281			PSP- Future value can not be determined
13960613	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2176, 1765, D1780, D1778, D1779, D2177			PSP- Future value can not be determined
13960615	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2178			PSP- Future value can not be determined
13960616	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3081, D1746, D1610, D1742, D2194, D3107			PSP- Future value can not be determined
13960618	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1066			PSP- Future value can not be determined
13960619	Rockport	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1791, D1792, D3131			PSP- Future value can not be determined
13960622	Rockport	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1228			PSP- Future value can not be determined
13960625	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3201, D2320, D2345, D2135, D2138, D2057, D2154, D2350			PSP- Future value can not be determined
13960666	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2350, D1439, D3011			PSP- Future value can not be determined
13960671	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1287, D1283			PSP- Future value can not be determined
13960674	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3047, D1589			PSP- Future value can not be determined

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13960676	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3031, D3030, D1275		·	PSP- Future value can not be determined
13960678	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1291, D1289, D1290, D1294, D1942			PSP- Future value can not be determined
13960679	Dale	Underslung Replacements	Electric Distribution	Convert Ex inline switch to a GOAB D2405, D2404, D1702			PSP- Future value can not be determined
13960710	Holland	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1724, D2065, D3121			PSP- Future value can not be determined
13960746	Dale	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1796, D3128, D1700, D1703, D1734, D3129			PSP- Future value can not be determined
13960748	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1432, D1481, D2206, D1725, D1747, D1776, D1222, D1748, D2310, D2311			PSP- Future value can not be determined
13960780	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1297, D1295, D1296, D3006			PSP- Future value can not be determined
13960802	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1308, D1833, D1304, D1306, D1307, D1917			PSP- Future value can not be determined
13960804	Haubstadt	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1689, D1745, D1692, D1805			PSP- Future value can not be determined
13960806	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1999, D1315, D2000, D2643			PSP- Future value can not be determined
13960836	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2604, D3065, D1659			PSP- Future value can not be determined
13960838	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3092, D1498, D2081, D2082, D2082, D1726, ABS277, D1180, D1182, D1496, D2060, D2061, D2062, D2063			PSP- Future value can not be determined
13960839	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2072, D1556, D1557, D1558			PSP- Future value can not be determined
13960846	Winslow	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2628			PSP- Future value can not be determined
13960847	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline Switch to a GOAB D1070, D2077, D1961, D1266, D2038, D2078, D1124			PSP- Future value can not be determined

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13960848	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3032, D3033, D1511, D1593, D1596, D1606, D1941, D2301			PSP- Future value can not be determined
13960850	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1993, D1192, D1302, D1420, D1835, D2008, D2452			PSP- Future value can not be determined
13960851	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2398, D1625, D1629, D2040			PSP- Future value can not be determined
13960923	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1087, D1323, D1325, D2025			PSP- Future value can not be determined
13960984	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3202, D1990, D3190, D2406, D2152, D2153, D2157, D2184			PSP- Future value can not be determined
13961037	Dale	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1755, D1753, D2092, D2314, D2315, D3106			PSP- Future value can not be determined
13961038	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1033, D1631			PSP- Future value can not be determined
13961040	Ft. Branch	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1686, D1267, D1683, D1684, D1685, D1687, D1688, D1690, D2590			PSP- Future value can not be determined
13961042	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1244, D2668, D1242, D3023, D3089			PSP- Future value can not be determined
13961073	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1500, D1738, D2022, D2024			PSP- Future value can not be determined
13961095	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1855, D1001, D1154, d1208, D1849, D1852, D1853, D1854			PSP- Future value can not be determined
13961096	Rockport	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1706,D1723			PSP- Future value can not be determined
13961098	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1311, D2001, D1272, D2391			PSP- Future value can not be determined
13961120	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1757, D2190, D2312			PSP- Future value can not be determined
13961123	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1327, D1328, D1330, D1331, D1333, D1869, D1952			PSP- Future value can not be determined

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13961124	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2196, D1341, D1351, D2623, D1335, D1336, D1337, D1338, D1339, D1340, D1342, D2465, D3155			PSP- Future value can not be determined
13961125	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2589			PSP- Future value can not be determined
13961126	Haubstadt	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1834, D1817, D1612, D2015, D1694, D1802, D1815, D1816, D2017			PSP- Future value can not be determined
13961128	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1360, D1842, D1355, D1361			PSP- Future value can not be determined
13961129	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1570, D1569, D2174, D2182			PSP- Future value can not be determined
13961183	Ft. Branch	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1695, D3176, D1696, D1697			PSP- Future value can not be determined
13961208	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1198, D2018, D2382, D3109			PSP- Future value can not be determined
13961209	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1370, D1371, D1981, D2165, D2410, D3091			PSP- Future value can not be determined
13961212	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1162, D1245, D1249, D1994, D2004, D3117			PSP- Future value can not be determined
13961213	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a Gab D1255, D1841, D1843, D2307, D2337, D2469			PSP- Future value can not be determined
13961235	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3042, D2185, D1502, D1599, D1600, D1956			PSP- Future value can not be determined
13961265	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2197, D1801, D1068, D1372, D1374, D1376, D2210, D2569, D2570, D3156			PSP- Future value can not be determined
13961266	Holland	Underslung Replacements	Electric Distribution	Convert Ex inline switch to a GOAB D1713, D1714, D1799			PSP- Future value can not be determined
13961267	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3027, D1379, D1382, D1383			PSP- Future value can not be determined

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13961300	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1388, D1386, D1387, D1814			PSP- Future value can not be determined
13961301	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3116, D1085, D1912			PSP- Future value can not be determined
13961302	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2030, D2125, D2137, D2139, D2141			PSP- Future value can not be determined
13961303	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2113, D2098, D2102, D2325, D2326, D1634, D1635, D1636, D1640, D1645, D1646, D2076, D2103			PSP- Future value can not be determined
13961305	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1764, D1762			PSP- Future value can not be determined
13961306	Evansville	Underslung Replacements	Electric Distribution	Convert EX Inline switch to a GOAB D1390, D1396, D1397, D1405, D1394, D1392, D1393, D1399, D1400, D1401, D1402, D1403, D1520, D1900			PSP- Future value can not be determined
13961314	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D233, D2011, D2514, D2225, D1406, D1407, D1408, D1409, D1806, D2451			PSP- Future value can not be determined
13961315	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1622, D1661, D3055			PSP- Future value can not be determined
13961316	Francisco	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3168, D3167			PSP- Future value can not be determined
13961317	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1193, d1235, D1236, D1237, D1238, D2009, D2036			PSP- Future value can not be determined
13961319	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2397, D3206			PSP- Future value can not be determined
13961321	Evansville	Underslung Replacements	Electric Distribution	Convert Ex inline switch to a GOAB D1082 D1411, D1413, D1497			PSP- Future value can not be determined
13961322	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2145, D1046, D1007, D1045, D1155, D1915, D2142, D2144, D2146, D2368			PSP- Future value can not be determined
13961347	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2499, D2003, D1421			PSP- Future value can not be determined
13961348	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1766, D1767, D1770			PSP- Future value can not be determined

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13961383	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1213, D1808, D1822, D1807			PSP- Future value can not be determined
13961385	Rockport	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1719, D1721, D1720, D3130, D3135			PSP- Future value can not be determined
13961387	Santa Clause	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3020, D3019, D2362, D3127			PSP- Future value can not be determined
13961389	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1989, D2037, D2088			PSP- Future value can not be determined
13961390	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3041, D1595, D1605, D1698, D1809, D1964, D2186			PSP- Future value can not be determined
13961397	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1095, D1514, D1567, D1431, D1429, D1430, D1527, D1870			PSP- Future value can not be determined
13961447	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3149, D3151, D1437, D1438, D3147			PSP- Future value can not be determined
13961449	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1171, D1874			PSP- Future value can not be determined
13961485	Dale	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB d1788, D1798			PSP- Future value can not be determined
13961489	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2101, D1158, D1159,D1161, D1633,D1649,D1650,D 1671,D2542			PSP- Future value can not be determined
13961495	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1449, D1848, D2212			PSP- Future value can not be determined
13961502	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1151, D1982, D1148, D1149, D1054, D1150, D1152, D1926			PSP- Future value can not be determined
13961504	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1111, D3024, D3076, D1113, D1385, D1434, D1971			PSP- Future value can not be determined
13961506	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1607, D3103, D3200, D1608, D3192			PSP- Future value can not be determined
13961507	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1356, D3105, D1837, D1914			PSP- Future value can not be determined
13961508	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1958, D1974			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13961509	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2058, D2219			PSP- Future value can not be determined
13961511	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2074, D1973, D1460, D1195, D1872, D1877, D1954, D2064, D2067, D2073, D2478, D2479, D2480, D3162			PSP- Future value can not be determined
13961512	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2491, D1468, D2066, D1071, D1469, D1470, D1966			PSP- Future value can not be determined
13961514	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1960, D2079, D2080, D1349, D1495, D3077			PSP- Future value can not be determined
13961516	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1651, D2031, D1653, D2402, d3061			PSP- Future value can not be determined
13961522	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2114			PSP- Future value can not be determined
13961524	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex inline switch to a GOAB D1881			PSP- Future value can not be determined
13961528	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1773, D1774, D1775, D3108			PSP- Future value can not be determined
13961532	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1471, D1472, D1474			PSP- Future value can not be determined
13961533	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2582			PSP- Future value can not be determined
13961588	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1167, D1165, D1168, D1905			PSP- Future value can not be determined
13961590	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3114, D1419, D1483, D1485			PSP- Future value can not be determined
13961592	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1177			PSP- Future value can not be determined
13961761	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1777, D2179			PSP- Future value can not be determined
13961800	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D110, D3035, D1048, D1488, D2218, D3022			PSP- Future value can not be determined
13961802	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2122, D2124			PSP- Future value can not be determined
13961803	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3207			PSP- Future value can not be determined
13961804	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1894, D1895			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13961806	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1362, D2068, D3173, D3174, D1364, D2383			PSP- Future value can not be determined
13961808	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3028, D1252, D1381, D3017, D3029			PSP- Future value can not be determined
13961810	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1944, D3160, D1501			PSP- Future value can not be determined
13961833	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1507, D1508, D1509, D1512, D1939			PSP- Future value can not be determined
13961834	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2096, D1827, D2211			PSP- Future value can not be determined
13961835	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2126, D3111			PSP- Future value can not be determined
13961836	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1516, D1517			PSP- Future value can not be determined
13961844	Francisco	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3175, D1803, D1804, D3195			PSP- Future value can not be determined
13961845	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2198, D1073, D1519, D1977, D1985, D3158			PSP- Future value can not be determined
13961846	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1179, D1525, D1526, D1528, D1529			PSP- Future value can not be determined
13961847	Rockport	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1718, D3171, D1717, D1728, D2034, D3134, D3136			PSP- Future value can not be determined
13961848	Hatfield	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1709, D1729, D1789, D3132, D3133, D3137, D3138			PSP- Future value can not be determined
13961855	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1535, D3113, D1532, D1534, D1533, D1536, D1539, D1885, D2005, D2086, D2334, D2340, D2460			PSP- Future value can not be determined
13961856	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1373, D2377, D3015, D3157			PSP- Future value can not be determined
13961858	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1544, D1547, D1820, D1977			PSP- Future value can not be determined
13961859	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2476, D2516, D2517, D2518, D1666, D2512, D2515			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13961860	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1921, D2215			PSP- Future value can not be determined
13961862	Santa Clause	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3018, D3124, D3125			PSP- Future value can not be determined
13961863	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3139, D1782, D1781			PSP- Future value can not be determined
13961864	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1823, D1824, D1825, D2459			PSP- Future value can not be determined
13963067	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2389, D1768, D2318, D2319			PSP- Future value can not be determined
13963068	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2651			PSP- Future value can not be determined
13963072	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1550, D1548, D1549, D1551, D1552, D1553, D1554, D2413			PSP- Future value can not be determined
13963074	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2095, D2381, D3084, D2380, D2540, D3067			PSP- Future value can not be determined
13963076	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2042, D2043, D2085, D3152, D1436, D1560, D1561, D1968, D2084, D3148, D3150			PSP- Future value can not be determined
13963078	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2002			PSP- Future value can not be determined
13963080	Boonville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1783, D1784, D2052, D2602, D2612			PSP- Future value can not be determined
13963082	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1811, D18142, D1896, D2221			PSP- Future value can not be determined
13963085	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2492, D2494, D1572, D1571, D2027, D2300			PSP- Future value can not be determined
13963088	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1574			PSP- Future value can not be determined
13963090	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1675, D1991, D2614, D3062, D3063			PSP- Future value can not be determined
13963091	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3059			PSP- Future value can not be determined
13963093	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1186, D1531, D1592, D1901			PSP- Future value can not be determined

Maximo Work Order Number	City	TDSIC Plan Program	Work Group	Maximo Short Description	Current Planned Year	Final Engineered Estimated Project Cost (in 2016 Dollars)	Future Value of Final Engineered Estimated Project Cost
13963094	Rockport	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1227, D175, D2633			PSP- Future value can not be determined
13963263	Newburgh	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3029, D3043, D1197, D2164			PSP- Future value can not be determined
13963264	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1466, D1467, D1576, D1577, D1579, D1580, D1943			PSP- Future value can not be determined
13963265	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2615			PSP- Future value can not be determined
13963267	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1293, D1582, D1583, D1584, D1585,D1586, D1886			PSP- Future value can not be determined
13963268	Mt. Vernon	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2401, D2477, D1662, D1677, D3050			PSP- Future value can not be determined
13963269	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1131			PSP- Future value can not be determined
13963290	Haubstadt	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1611, D1613, D1800, D2016, D2335, D2338, D2611			PSP- Future value can not be determined
13963364	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1587			PSP- Future value can not be determined
13963365	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D2050, D1047, D1050, D1089, D1090, D1224, D1225, D1459, D1727, D1826, D1859, D1972, D1980, D2446, D2458			PSP- Future value can not be determined
13963366	Winslow	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1693			PSP- Future value can not be determined
13963406	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D1845, D1847, D2161, D3003			PSP- Future value can not be determined
13963408	Evansville	Underslung Replacements	Electric Distribution	Convert Ex Inline switch to a GOAB D3025, D1092, D1435			PSP- Future value can not be determined



# 12kV Circuit Rebuilds and Looping

### **Program Details**

• Estimated Cost: \$30.7M

• Expected Timeframe for Project Execution: Years 2017 - 2023

#### **Customer Benefits**

- Increased system reliability and integrity, including:
  - Reduced risk of poles breaking and falling during storms
  - Reduced risk of wire breaking and falling during storms
  - o Reduced risk of electrical hazards related to storm damage
  - o Decreased number of unplanned outages
  - Reduced outage times
- Savings in reduced number of emergency repairs/emergency work

This Program was validated by the Black & Veatch Risk Model analysis.

# **Program Description**

The circuit rebuild program includes the replacement of obsolete and aged conductors with higher capacity and stronger aluminum cables, aging poles with poles based on current, more robust construction standards, and other hardware and equipment as needed to satisfy current construction standards and improve reliability. In addition, Vectren South will incorporate looping (circuit ties) with modern switches that will improve grid resilience by providing alternate feeds for reenergizing customers during extended outages.

#### Rationale

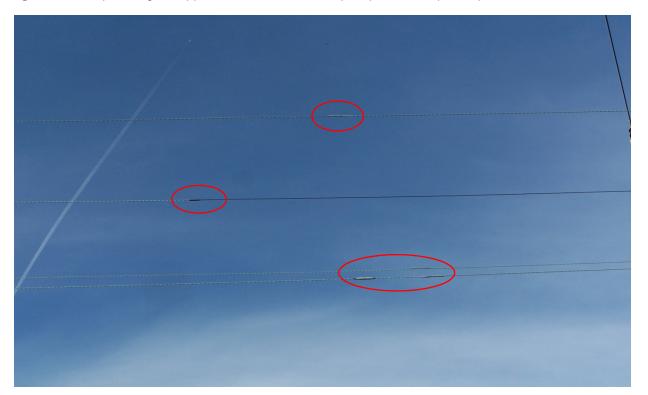
Replacing outdated conductors and improving looping schemes brings the circuits and supporting infrastructure in this program up to current construction standards. Vectren South has identified outdated urban and rural three phase overhead copper conductors and wood poles for replacement as part of our continual system improvement practice. The copper conductor was phased out of new construction standards approximately 30 years ago. Each project will require the replacement of the copper conductor with an aluminum conductor and wood poles, 32 years or older, with new stronger poles, per Vectren South standards. All substandard or dilapidated equipment along the project's route will be replaced as well.

Looping, otherwise known as circuit ties, for radial circuits is the most cost effective way to provide contingency for transferring customer load during a prolonged outage. The projects will identify radials circuits, starting with worst performing circuits, which could benefit from a circuit tie with adjacent circuits.

The rebuilt lines and added loops with new switches will position Vectren South to modernize electrical service with future enhancements such as Distribution Automation (DA) and fault location isolation and service restoration (FLISR). Vectren South prioritized these projects based on an internal worst performing circuit list and Distribution Automation projects.



Figure 1. Example of aged copper conductors with multiple splices from past repairs





**Figure 2.** Aluminum conductors (left) became the industry standard approximately 30 years ago. This program focuses on replacing outdated conductors (such as the copper conductor on the right) to enhance safety, reliability, and capacity.



# **4kV Conversions**

#### **Program Details**

Estimated Cost: \$46.0M

Expected Timeframe for Project Execution: Years 2017 - 2023

#### **Customer Benefits**

- Shorter restoration times due to enhanced operational flexibility more switching points with adjacent 12kV systems
- Elimination of 4kV system reduces outages caused by 4kV system failures and 4kV substation
  equipment failures (i.e. for which spare and replacement parts are not readily available) resulting
  in improved reliability
- Increased system integrity and improved electric system performance, and reduced operational costs

This Program was validated by the Black & Veatch Risk Model analysis.

### **Program Description**

Vectren South will convert its aging and isolated 4kV system to a standardized and modern 12kV system with looping and tie capability.

#### Rationale

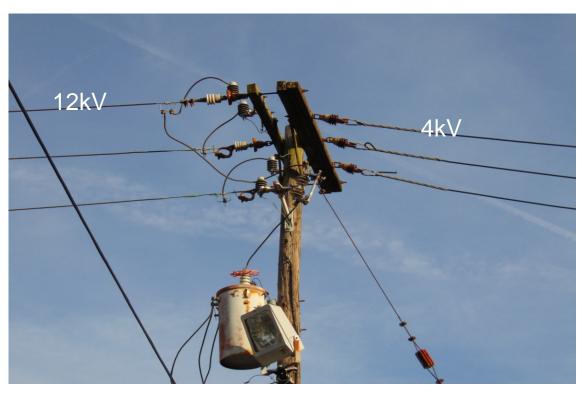
Vectren South's remaining 4kV system is nearly 70 years old and well past its useful life. As Vectren South expands and ties together its 12kV system, the older 4kV facilities become isolated without adequate support from adjacent circuits. This means that when a 4kV circuit sustains a fault, all customers on that circuit will lose power service until the repair is completed. In comparison, customers connected to modern, looped 12kV circuits can be re-energized long before the fault is repaired because these customers can be fed from adjacent circuits.

Replacing 4kV circuits with modern 12kV systems will improve operational efficiencies and service to customers. Procuring parts for the obsolete 4kV system is costly and difficult. Replacing 4kV circuits with 12kV voltage and equipment standardizes and streamlines Vectren South's construction, equipment and maintenance procedures. This will enhance safety, reduce inventory and facilitate faster service restoration from adjacent circuits/loops in the event of a failure.

Replacing the 4kV circuits with the 12kV systems also enhances conservation. 4kV circuits can only deliver approximately 20 percent of the power that can be delivered by a modern 12kV circuit due to the physical limitations of its cable, conductors, and equipment. In addition, line losses on 4kV circuits are approximately *nine times greater* than those from a 12kV circuit supplying an equivalent load over the same conductors. The reason for this is 4kV circuits require approximately three times more current (amps) to supply the same amount of power as a 12kV circuit.

Prioritization of the 4kV to 12kV conversion projects is based on the age of the assets, likelihood of failure, consequence of failure and contingency options. Completing the replacement of the 4kV system through planned and completed projects will cost-effectively reduce the number of 4kV assets and the risk associated with them. Reducing the 4kV system foot print faster will also support system stability and reduce the need for maintaining inventory of obsolete equipment.





**Figure 1.** Pole location where a 12kV feeder and 4kV feeder meet. After converting the 4kV system to 12kV, this location and others will be outfitted with switches enhancing operational flexibility in support of increased reliability.



# **Advanced Distribution Management System**

#### **Program Details**

Estimated Cost: \$8.2M

• Expected Timeframe for Project Execution: Years 2017 - 2019

#### **Customer Benefits**

- Faster identification of outages, improved accuracy with estimated restoration times and faster outage restoration
- Faster isolation of outages to specific problem areas (example tree on power line, wildlife intrusion or car hitting a pole)
- Improved tracking of field crews for faster response times

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

#### **Program Description**

Vectren South plans to replace its current Outage Management System (OMS) and install a Distribution Management System (DMS) to form what the industry now calls an Advanced Distribution Management System (ADMS).

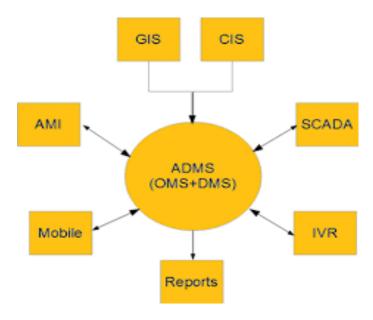
### Rationale

A new ADMS will provide a full portfolio of tools (described more fully below) that modernize distribution grid operations and satisfy rising customer expectations in demand side management. Core functionality will provide a technology platform with a shared network model and common user experience for all roles that are required to monitor, control and optimize the secure operation of the electrical distribution network.

Currently, the utility industry depends on OMS technology to support emergency response and ensure customer service quality. In addition, an OMS contributes to improving labor efficiency and maintaining revenue expectations by faster service restoration. A typical DMS is made up of a number of modules that support AMI, demand response, distributed generation and mobile integrations, at the same time improving analytics and reliability reporting. Integrating OMS products with advanced metering infrastructure (AMI) for outage notification and the callback function, as well as including the automated switching operation, which is intended to minimize an affected area through the use of advanced protection systems and local automation, pushes OMSs into the realm of ADMS. In addition, access to up-to-date consumption data, via the meter data management (MDM) component of AMI, provides network-loading data for system analysis, which is required to study the planned switching actions' impact on circuit overload or to model price-sensitive load as a result of utility-deployed demand-response programs.

Vectren South expects its ADMS to support engineering and customer service in providing accurate information to customers and to operations staff in their day to day switching and restoration efforts. This system will enhance Vectren South's situational awareness of the entire Vectren South electric distribution system. The system will be implemented in two phases. Phase 1 will improve the outage system, predictive outage engine and reporting and phase 2 will bring in the DMS modules and further integration to other systems.





**Figure 1**. ADMS future state: Operators will have a centralized application at which the electric distribution system can be monitored and controlled.

# Legend

- Advanced Distribution Management System (ADMS)
- Outage Management System (OMS)
- Distribution Management System (DMS)
- Geographic Information System (GIS)
- Customer Information System (CIS)
- Supervisory Control and Data Acquisition (SCADA)
- Interactive Voice Response (IVR)
- Advanced Metering Infrastructure (AMI)



# **Distribution Automation**

### **Program Details**

Estimated Cost: \$13.9M

• Expected Timeframe for Project Execution: Years 2017 - 2023

# **Customer Benefits**

Faster outage restoration

- Quickly isolate outages to specific problem areas (example tree on power line or car hitting a pole)
- o Better system reliability through replacement of aging and poor performing equipment
- Real time equipment monitoring leads to improved efficiency of labor, improved preventative maintenance scheduling (i.e. through better information on line status), enhanced safety, and better data for system planning

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

### **Program Description**

Vectren South plans to install Distribution Automation (DA) to enable remote operation of certain switches, called gang operated air break (GOAB) switches, so that they can be opened and closed remotely from Vectren South's Control Room. The program includes new switches with motor operators, communication radios, and other supporting equipment.

### Rationale

Vectren South's ability to open and close switches remotely will allow system operators to assess the situation, isolate the fault, and quickly restore power to as many customers as possible before field crews arrive on the scene. Prior to the installation of DA equipment, restoration times were dependent on the response times of the field crews. With DA, many of the affected customers can be restored within minutes. The installation of DA equipment also prepares Vectren South for additional fault location, isolation, and service restoration (FLISR) technologies and systems that will ultimately automate power restoration and further improve reliability. The remote switching and monitoring provided by DA also improves the efficiency of maintenance procedures and enhances system planning. Vectren South prioritized these projects based on an internal worst performing circuit list, other DA projects, availability of supervisory control and data acquisition (SCADA) in substations, number of 3-phase circuit ties and the number of circuits tied.





Figure 1. Example of new motor operator and controls for GOAB switch





**Figure 2.** Example of entire DA switch installation showing GOAB switch at top of pole and motor operator/controls cabinet with connecting linkage to switch



# **Distribution Capacitor Replacements**

# **Program Details**

Estimated Cost: \$3.8M

Expected Timeframe for Project Execution: Years 2017 - 2023

# **Customer Benefits**

- Reduce power losses on distribution circuits
- More reliable capacitor bank switching
- Reduces the risk of back feed and damage to customer equipment

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

#### **Program Description**

Vectren South plans to update its power factor correction on certain 12kV circuits, selected for their low or lagging power factors. This program involves the replacement of aging capacitor banks and installation of new capacitor banks where needed.

#### Rationale

The primary objective of the capacitor replacement program is to improve the power factor on Vectren South's distribution system, thereby reducing the amount of power needed on each circuit. Vectren South's distribution system contains over 300 capacitor banks and many are nearing or have exceeded their useful lives. In addition, many of these banks contain tanks with low rupture strength installed in ungrounded configurations. A capacitor bank failure can cause low voltage issues for customers, oil spills and line losses. Because many of Vectren South's older capacitor installations were installed as ungrounded banks, certain outage events can result in back feed and damage to customer equipment. Because the tanks of modern capacitors have higher rupture strength, they can be installed in a grounded configuration, which prevents the potential for back feed during outages and reduces the risk of damage to customer equipment.

Vectren South will complete a detailed engineering study for all circuits in this program. Each study will include a detailed model with historical load data to determine how best to improve power factor at each specific location. This program aligns with industry best-practice for improving power factor on overhead distribution circuits by adding capacitor banks at strategic locations.



# <u>Appendix</u>

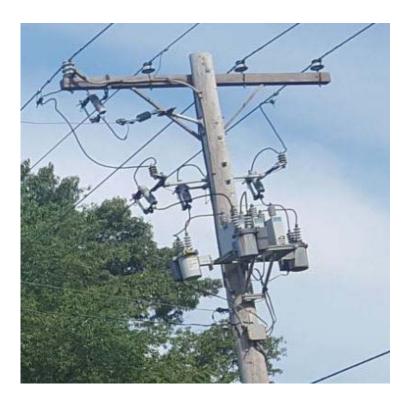


Figure 1. Example of switched capacitor bank with oil switches



# **East West Transmission Line**

### **Program Details**

Estimated Cost: \$59.3M

• Expected Timeframe for Project Execution: Years 2019 - 2022

#### **Customer Benefits**

- Allows reliable operation during N-1 events as required by NERC Reliability Standards TOP-002-2.1b Normal Operations Planning and TPL-001-4 Transmission System Planning Performance Requirements
- Improved reliability and power quality

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

# **Project Description**

Vectren South plans to build an approximately 37 miles long, 138kV line in existing rights of way occupied by an existing 69kV line. The existing 69kV line will be reconstructed to accommodate the new 138kV line on the same structures. The line route is from east to west, from Vectren South's FB Culley generation station, through the Pigeon Creek transmission substation, terminating at the AB Brown generation station. In addition to the new line, Vectren South plans several upgrades to its 69kV system in Evansville metro and four new 138kV line terminals: one at AB Brown, two at Pigeon Creek, and one at FB Culley. 69 kV system upgrades include replacement of 69 kV switches, and upgrades and replacements to portions of the existing 69 kV lines.

### Rationale

As Vectren South studied the effects of adding generation (as described in Vectren South's 2016 Integrated Resource Plan filed with the IURC) to serve its projected load by 2024, Vectren South identified a need for an additional 138 kV line to reduce the congestion that this additional generation would create. This new line will provide a parallel path to the only existing 138kV path through Evansville metro. Without this additional line and upgrades to Vectren South's 69kV system in Evansville metro, system studies projected that the Vectren South system would not meet North American Electric Reliability Corporation (NERC) N-1 standards. (N-1 [N minus 1] standards refer to the effect of the failure of a single element like a transformer or generator on system reliability, and the requirement that the system be able to maintain operation in the event of the failure of a single element). The line is necessary to ensure system reliability and power quality under Vectren South's new generation structure.



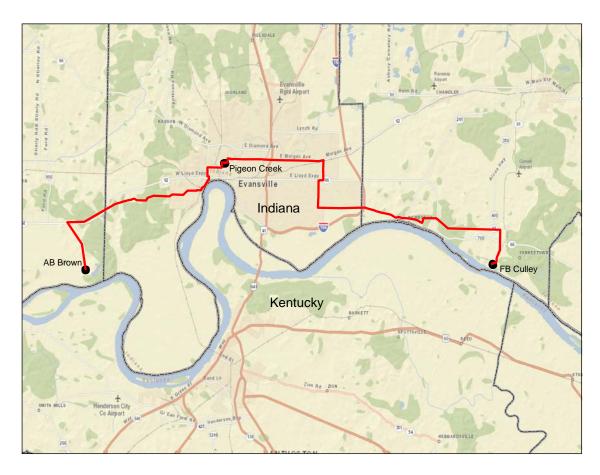


Figure 1. Proposed Route of New East West 138kV Transmission Line



# **Geomagnetic Disturbance Protection**

### **Program Details**

• Estimated Cost: \$1.2M

• Expected Timeframe for Project: Year 2023

### **Customer Benefits**

- Increased reliability and reduced risk of certain kinds of large scale power outages (e.g. geomagnetic disturbance related outages), affecting a large number of customers
- Reduced risk of geomagnetic disturbance related outages requiring emergency repairs

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

### **Program Description**

Vectren South installed a monitoring device to gather geomagnetically-induced current (GIC) data from one of its 345kV transformers to assist in the evaluation of the geomagnetic disturbance (GMD) risk. Vectren South will analyze this data and will take additional measures necessary to protect the interconnected Bulk Electric System from the effects of GMDs reducing the risk of large scale, long duration power outages.

#### Rationale

GMDs caused by the sun's solar flares can harm some devices (i.e. particularly devices like transformers operating at 300kV and above) connected to the electric transmission system. Based on these GMD risks, the North American Electric Reliability Corporation (NERC) has developed a GMD standard, NERC Reliability Standard TPL-007-1 Transmission System Planned Performance for Geomagnetic Disturbance Events. This requires utilities to assess the potential risk of GMD events on the electric system through vulnerability assessments and thermal impact assessments of transformers. (Although research suggests that geographic position may affect the severity a GMD, NERC and FERC directives do not distinguish among the geographic regions.)

In addition to this NERC GMD Standard, FERC has also directed NERC to develop modifications to require the collection of GIC monitoring and magnetometer data to further guide utilities' GMD protection and enhance grid resiliency. Vectren South has already installed a monitor on one of the three 345/138kV transformers in our system. Data from this monitor will help Vectren South identify and track the effects of GMDs on the Vectren South system, particularly the 345kV transformers.

While Vectren South has already taken steps to monitor for GMDs and reduce the risks of GMD related outages on Vectren South's system (i.e. Vectren South can fully operate without our 345/138kV transformers, assuming Vectren South generation is operating), the loss of a high voltage transformer would limit Vectren South system resiliency and increase the risk of large scale long duration power outages, until that damaged high voltage transformer has been replaced.





Figure 1. Display of monitor that is connected to SCADA RTU



Figure 2. Current Transformer (CT) installed to measure transformer neutral to ground.



# **Instrument Transformer Replacements**

### **Program Details**

Estimated Cost: \$2.7M

Expected Timeframe for Project Execution: Years 2017 - 2022

### **Customer Benefits**

Reduction in unplanned outages and related efficiencies concerning reduction in emergency work

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

### **Program Description**

Vectren South plans to replace selected aging instrument transformers and add instrument transformers in specific locations in the Vectren South system.

### Rationale

Instrument transformers provide vital system information concerning voltage, loading, and other metrics. Instrument transformers are often paired with metering and relay equipment to facilitate system monitoring and protection. Vectren's system includes instrument transformers called current transformers (CTs) and potential transformers (PTs). CTs are often embedded within the equipment they are monitoring (e.g. breakers, transformers, etc.). When the asset is replaced, the CTs are replaced as well. However, PTs are typically stand-alone devices and those are generally not replaced unless they fail.

When an instrument transformer fails, it can cause an electrical fault and an outage. If an older instrument transformer fails, porcelain fragments may be ejected that can cause injury or equipment damage. Instrument transformers for high voltage systems present additional safety hazards when they fail, because they are typically filled with oil, which can be a fire hazard or environmental issue.

Vectren South regularly performs infrared surveys of substations to identify equipment displaying abnormal heating. Abnormal heating is an indicator of risk for failure, and those instrument transformers that show abnormal heating will be replaced.





Figure 1. Example of three aged instrument transformers



Figure 2. Example of three new modern instrument transformers



# **Mobile Asset Data Collection**

### **Program Details**

• Estimated Cost: \$1.1M

• Expected Timeframe for Project Execution: Year 2021

#### **Customer Benefits**

- Improved asset management strategy which will promote fewer interruptions and equipment failures and provide better system reliability
- Improve operational efficiency through enhanced maintenance practices
- Reduced or avoided emergency repairs and cost avoidance from after-hours work

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

# **Program Description**

Vectren South plans to evolve its asset management strategy from a "time based" maintenance program to one based on real-time asset health information. This asset health information will populate an asset index that Vectren South will use for asset risk analysis, moving forward.

# **Rationale**

Vectren South plans to upgrade its asset health data collection processes by improving our ability to collect new data, monitor and analyze asset data in real-time. This will help reduce risks and data quality issues. Electronic asset information can be inputted into other systems automatically for better overall system analyses. A single data depository will allow Vectren South to have better management of these assets. Access to this kind of mobile data in the field will lead to shorter outage durations, due to improved troubleshooting.

Vectren South's current manual maintenance and location testing efforts are set out in Table 1.

**Table 1. Current Manual Maintenance & Location Testing Inspections** 

Aerial Patrols	Overhead Reliability Program (ORP)				
Infrared	Pole Inspections (Loading, Condition)				
Transformer Inspections	Fault Indicators <sup>L</sup>				
Battery Charger Inspections	Asset Placement <sup>L</sup>				
Breaker Inspections	Underground Fault Placement/Location <sup>L</sup>				
Hot Oil Testing	Inventory of Assets/Switching Schedules				

Note: All items are maintenance inspections unless notated with "L." Those notated with "L" are location testing inspections.



# **Optical Ground Wire**

### **Program Details**

Estimated Cost: \$8.2M

• Expected Timeframe for Project Execution: Years 2017 - 2018

### **Customer Benefits**

- Faster outage restoration, through real-time identification of equipment issues and outages
- Improved overall power quality and reliability
- Establish real-time, two-way communications with line equipment, thereby reducing the need to dispatch skilled personnel and specialized equipment, thereby reducing related costs
- Enhanced capabilities for physical and cyber security of assets within the Vectren South system

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

# **Program Description**

Vectren South plans to expand its existing Optical Ground Wire (OPGW) network to provide a reliable and secure communications backbone, supporting planned and future Smart Grid improvements.

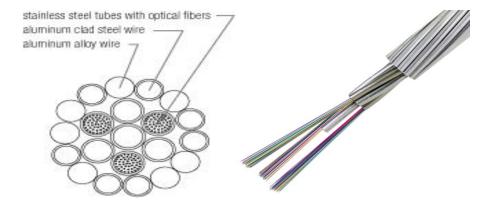
### Rationale

Vectren South currently uses a combination of leased land lines, radio and fiber optic (via OPGW) cable systems for communicating between control centers and assets located throughout the Vectren South service territory. Expansion of Vectren South's OPGW network will reduce dependence on certain legacy communication systems which cannot serve the expanding needs of today's technology. OPGW supports future programs, including substation physical security surveillance data and Advanced Metering Infrastructure (AMI) data collection and transfer. OPGW provides a private network for secure communications that improve protection from cyber threats. As Vectren South implements intelligent assets at substations and throughout the electric grid, Vectren South's need for a secure OPGW communication system increases.

OPGW is a dual functioning cable, meaning it serves two purposes. It is designed to replace traditional static wires on overhead transmission lines with the added benefit of containing optical fibers. OPGW fibers are used for communication and carry protection and control signals between electrical substations and provide asset condition and system status data to control centers for monitoring real-time system parameters. OPGW provides superior communication system reliability compared to radio (traditional microwave point-to-point) systems since fiber is not affected by weather or topography. In addition, the speed of communication is significantly improved enabling greater levels of real-time system capabilities and rapid response to system events, and data transfer capability (bandwidth) is also improved.

This program installs OPGW using existing transmission lines within existing right-of-ways, reducing the expense of expanding the communication system. Projects have been identified based on the existing OPGW implementation plan. The plan is based on creating multiple OPGW loops for redundancy and reliability by using a systematic approach in closing in the holes of the loops and combining with rebuild schedules of those transmission lines.





**Figure 1**. The illustrations above show a cross section of the cable. An OPGW is primarily placed in the secure topmost position of the transmission line where it "shields" the phase conductors from lightning while providing a telecommunications path for internal as well as third party communications.

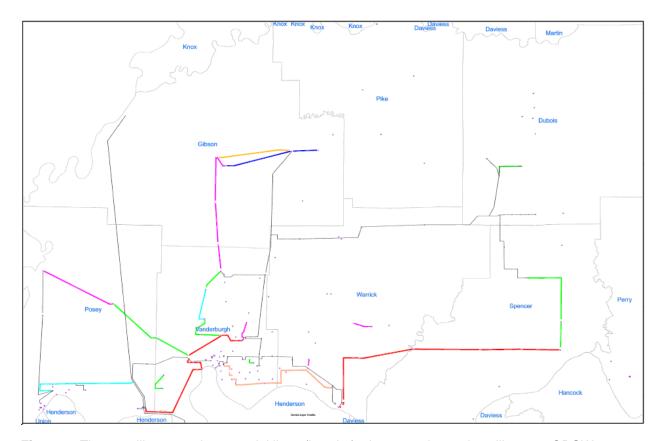


Figure 2. The map illustrates the potential lines (in color) where we plan on installing new OPGW.



# **PCB Transformer Replacements**

# **Program Details**

Estimated Cost: \$2.3M

Expected Timeframe for Project Execution: Years 2017 - 2018

### **Customer Benefits**

- Reduced safety hazards from PCBs for the general public and Vectren South personnel
- Reduced risk of environmental impacts from a transformer failure
- Risk management: Reduce risk of unplanned events and outages from failed transformers

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

### **Program Description**

Vectren South plans to replace approximately 310 transformers located near schools, parks and daycare facilities that may contain polychlorinated biphenyls (PCBs).

### Rationale

Manufacturing and use of PCB was banned by the Toxic Substances Control Act in the 1970s due to known health and environmental risks. Until the ban, some manufacturers used PCBs in their transformer oil and other materials. Vectren South has a number of operating transformers old enough to have PCBs in their transformer oil. Although the EPA does not require utilities to proactively replace PCB contaminated transformers, Vectren South prefers to replace these transformers.

Currently, Vectren South classifies any transformer with a manufacturing date of 1985 or earlier as a PCB contaminated transformer until testing verifies otherwise. And, this program will replace those transformers within Vectren South's system located near schools, parks and daycare facilities.





Figure 1. Examples of transformers manufactured before PCB ban



## **Substation Arrester Replacements**

#### **Program Details**

Estimated Cost: \$138.9K

Expected Timeframe for Project Execution: Years 2017 - 2023

### **Customer Benefits**

- Reduced risk of unplanned outages
- Increased protection against faults and lightning for certain Vectren South equipment
- Reduced risk of safety hazards to the general public and Vectren South personnel

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

## **Program Description**

Vectren South plans to replace substation arresters that are at or beyond their expected life to reduce the risk of arrester failures and consequent damage to other substation facilities. These devices protect electrical equipment in substations from over voltages caused by lightning strikes and other system events.

#### Rationale

During its service, an arrester is exposed to repeated lightning strikes and other voltage surges, and, with each exposure, its effectiveness decreases, in turn increasing its risk of failure. An arrester failure at a substation can cause a system outage and depending on the arrester type, the failure can also result in collateral damage to surrounding equipment. Many of the arresters targeted in this program have porcelain housings. The catastrophic failure of a porcelain housed arrester can be especially damaging to nearby equipment and pose a safety risk to maintenance personnel and the public.

This program replaces arresters at increased risk of failing due to time in service, thereby reducing the risks of arrester failures, including reduction in risks of injuries to workers and the public and of damage to other substation equipment.





Figure 1. Example of a failed porcelain housed arrester



Figure 2. Example of aged porcelain arrester (left) and modern polymer arrester (right)



# **Substation Battery System Replacements**

### **Program Details**

Estimated Cost: \$374.3K

Expected Timeframe for Project Execution: Years 2017 - 2023

#### **Customer Benefits**

- Reduced risk of unplanned outages related to battery failures
- Reduced risk of unplanned/emergency battery repairs and replacements
- Reduced risk of environmental impacts due to battery-related transformer or breaker failure
- Enhanced compliance with battery maintenance and testing at the identified transmission substations as required by NERC standards (PRC-005)

This Program was validated by the Black & Veatch Risk Model analysis.

## **Program Description**

Vectren South plans to identify and replace substation battery systems (i.e. including the cells, wiring, racks and chargers) using existing data to identify battery systems most likely to fail. In addition, Vectren South plans to add battery and monitoring equipment to its supervisory control and data acquisition (SCADA), so that Vectren South can monitor voltage and battery/charger condition remotely with early detection of potential battery related issues.

#### Rationale

Battery systems provide an uninterruptable back up power supply to substation equipment. Protective relaying equipment relies on this energy source to operate properly and protect equipment. At substations with SCADA, batteries also provide the backup energy supply that allows Vectren South to monitor and remotely operate equipment during a system disturbance. If a substation battery system fails, protection schemes cannot be properly set, posing risks to employee safety and to substation equipment.

Approximately 120 Vectren South substations have battery systems and each system has a 10-20 year expected service life. The age of each asset and historic replacement per year were used to determine the replacements within the Plan. Vectren South inspects its batteries, chargers, and racks every four months. Using that existing data for prioritization, Vectren South will identify the battery systems most at risk of failure and replace them.







Figure 1. Current battery backup equipment and panel



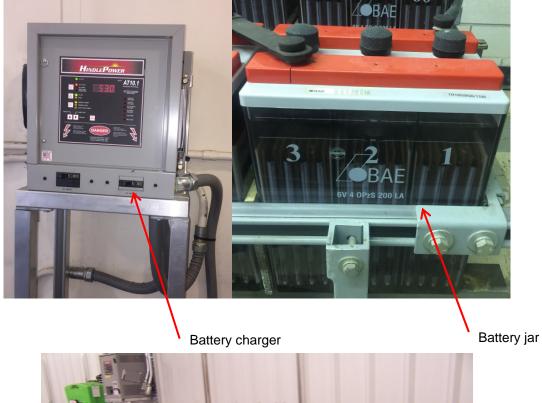




Figure 1. Station battery & rack with spill containment



# **Substation Circuit Breaker Replacements**

### **Program Details**

Estimated Cost: \$41.9M

Expected Timeframe for Project Execution: Year 2017 - 2023

#### **Customer Benefits**

- Reduced risk of unplanned outages resulting in improved reliability
- Reduced risk of environmental impacts due to breaker failure
- Reduces risk of safety hazards to the public and Vectren personnel

This program was validated by the Black & Veatch Risk Model analysis.

## **Program Description**

Vectren South plans to replace outdated circuit breakers with standardized vacuum or gas technology circuit breakers, depending on the use of the circuit breaker. Most of the assets identified for replacement are aged oil circuit breakers and air circuit breakers.

### Rationale

Vectren South's system includes nearly 700 circuit breakers. Approximately 220 of these assets are oil circuit breakers, more than half of which have been in service for 40 years or more. Another 65 circuit breakers are air circuit breakers, many of which have been in service 45 years or more. Vectren South will replace, on average, approximately 20 circuit breakers per year with standardized vacuum or gas technology, depending on the application.

Circuit breakers function as primary protective devices for substation transformers and other substation and transmission assets. A circuit breaker protects by quickly disconnecting equipment from a fault and safely interrupting the associating high fault currents. By design, operating times are very fast - typically between 50 and 100 milliseconds. The fast reaction time limits the time an asset is exposed to potentially damaging fault current. Circuit breakers also function as switches for interrupting or rerouting electricity under normal operating conditions. System operators rely heavily on circuit breakers to clear lines for maintenance and manage system power flows.

Replacement of oil circuit breakers is a high priority to minimize risk of environmental and safety hazards associated with the oil. Although catastrophic failures are rare, such events can result in shrapnel, fire and a substantial oil discharge.







Figure 1. Example of an aged 12kV oil breaker (left) and a new 12kV vacuum breaker (right)







Figure 2. Example of new 69kV gas breaker (left) and aged 69kV oil breaker (right)



# **Substation Physical Security Upgrades**

#### **Program Details**

Estimated Cost: \$2.9M

Expected Timeframe for Project Execution: Years 2019 - 2023

#### **Customers Benefits**

- Improved overall distribution grid power quality (i.e. potential reduction of theft) and reliability
- Reduced safety hazards to the general public and to Vectren South personnel
- · Reduced dispatch of skilled personnel and specialized equipment for emergency/unplanned work
- Improved overall substation physical security and enhanced compliance

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

### **Program Description**

Vectren South plans to upgrade physical security at substations identified by Vectren South as critical to its system.

## Rationale

Vectren South developed a methodology to assess the risk level at each of its substations, incorporating industry critical utility infrastructure guidelines, information and guidance from North American Electric Reliability Corporation (NERC) related to recent events (e.g. attacks, vandalism and thefts at substations in the US). Based on these analyses, Vectren South identified substations critical to the reliability of the Vectren South electrical system. And, based on that determination, Vectren South proposed certain upgrades to physical security at those substations. These proposed security upgrades align with current industry standards for securing critical system infrastructure and include installation of enhanced fencing, access control devices, video surveillance cameras and perimeter motion detection systems.





Figure 1. Additional lighting added to structures

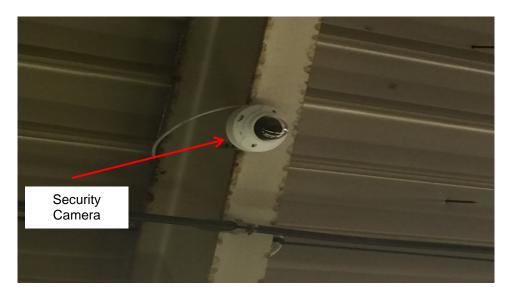


Figure 2. Cameras to be added to monitor activity



# **Substation Transformer Replacements**

#### **Program Details**

• Estimated Cost: \$68.5M

• Expected Timeframe for Project Execution: Years 2017 - 2023

#### **Customer Benefits**

- Reduced risk of unplanned outages and reliability
- Reduced risk of environmental impacts due to transformer failure
- · Reduces risk of safety hazards to the public and Vectren South personnel

This Program was validated by the Black & Veatch Risk Model analysis.

## **Program Description**

Vectren South plans to replace substation transformers at high risk of failure.

#### Rationale

The substation transformers or power transformers in this program change voltage levels between high transmission voltages (69kV or 138kV) and lower distribution voltages (12kV or 4kV) and generally range in size from 9.37MVA to 20MVA. Vectren South has approximately 200 substation transformers in its system and many are well beyond their expected service life of 35 years.

The loss of a substation transformer can result in the interruption of power to several thousand customers and restoration times can last for several hours. Vectren South works to minimize system impacts when a transformer fails by using mobile substations, spare transformers and switching contingencies. Although, these strategies will significantly shorten an outage, replacement is a more proactive approach that helps eliminate outages.

This program will replace an average of 7 to 10 substation transformers per year. Transformers to be replaced were identified using chronological age supplemented with Dissolved Gas Analysis (DGA). DGA provides insights into the actual health of a transformer that are not possible examining age alone. Assessing a transformer by age alone assumes a predictable decline in health over time regardless of external factors. However, factors such as loading, exposure to fault currents, and other stimuli can result in better or worse than expected health at a particular age. Using a combination of age and DGA allows Vectren South to determine which transformers are at the greatest risk of failure.





**Figure 1.** Example of an older substation transformer (left) and an example of a new substation transformer (right)



# **Supervisory Control and Data Acquisition Upgrades**

#### **Program Details**

Estimated Cost: \$3.4M

Expected Timeframe for Project Execution: Years 2017 – 2019, 2022

## **Customer Benefits**

- Faster evaluation of outages and restoration of service, through improved circuit sectionalization during storms
- Reduced risk of unplanned events from failed assets
- Real-time two way communications with line equipment to operate and acquire status and health now and in preparation for enhanced distribution system automation and "smart technologies" as those become available

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

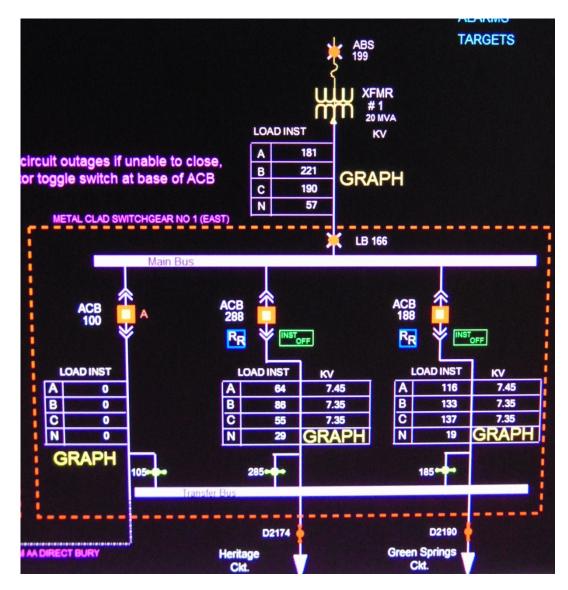
## **Program Description**

Vectren South plans to update existing Supervisory Control and Data Acquisition (SCADA) and add new SCADA capabilities where none exist.

#### Rationale

SCADA systems provide real-time system monitoring and control of assets at remote locations through a protected communication network. Vectren South has installed SCADA at approximately 75% of its substations that are delivering power to over 80% of its customers. The SCADA at these substations provides asset monitoring and remote operating capabilities capable of significantly shortening outages times. Unfortunately, a large portion of Vectren's existing SCADA equipment is no longer supported by the manufacturers, so an upgrade is necessary. This program prioritizes (e.g. by manufacturer, locations where assets are prone to failures, and locations where protection is inadequate in its current state) Vectren South's replacement of existing SCADA systems, and installs new SCADA to enhance grid reliability and gain operational efficiencies.





**Figure 1**. Example of SCADA monitoring screen in Distribution System Operations showing instantaneous load readings and voltages for circuit breakers and substation transformer



# System Protection Relay Upgrades

#### **Program Details**

• Estimate Cost: \$14.4M

Expected Timeframe for Project Execution: Years 2017 - 2023

## **Customer Benefits**

- Reduced customer interruption duration by sectionalizing the trouble area for operations to service
- Improved system visibility and stability

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

### **Program Description**

Vectren South plans to upgrade its system relays and revise its protection schemes to improve reliability for key customer groups and reduce the risk of unplanned outages.

## **Rationale**

Vectren South has approximately 4,500 protective relaying and related control systems (systems that monitor lines for short circuits) of which approximately 30-40% are beyond their useful life cycle. Of those 4,500 systems, approximately 1,100 have NERC compliance-related functions. And, of those 4,500 systems, approximately 25% are no longer supported by manufacturers (Figure 1), have a high failure rate or have within them microprocessor devices with known software/hardware issues.

In addition to replacing these at risk assets, Vectren South plans to revise its protection schemes to improve security and reliability, for example, isolating key customer groups (including hospitals, schools and/or commercial and industrial facilities) from sustained outages. Vectren South also plans projects to enhance current operational analysis (including time synchronization and oscillographic data) to minimize outage duration, assist in calculation of fault location on transmission lines and sustain system reliability.





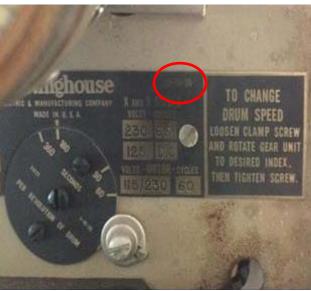


Figure 1. This photo shows a relay system from 1939 that is still in service.



# **Transmission Capacitor Replacements**

### **Program Details**

Estimated Cost: \$1.6M

• Expected Timeframe for Project Execution: Years 2019 - 2020

### **Customer Benefits**

- Improved voltage regulation on the system which results in better power quality
- · Reduced risk of unplanned power outages and improved system reliability
- Reduced system losses

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

### **Program Description**

Vectren South plans to replace identified transmission capacitor banks and related equipment at certain substations.

#### Rationale

Transmission capacitors enable better control and equalize power flow across the system. Efficient capacitor operations help conserve power by reducing line losses. Within Vectren South's system, transmission capacitor banks are typically installed at substations on the 69kV bus because a majority of Vectren South's load is served from 69kV. The capacitor banks are connected to the bus through a circuit breaker with protective relaying to provide for protection of the capacitors and to allow the switching of each bank in and out of service as needed for system load.

Vectren South plans to assess its transmission system to identify opportunities to enhance system performance through the replacement of capacitor banks, associated breakers and relaying equipment. The system assessment will use historical records, including, for example, the number of breaker operations, the average load interrupted, age of equipment, physical appearance, maintenance information and manufacturer information, to evaluate asset risk of failure. Assets with a high risk of failure and/or consequence of failure will be replaced as part of this program.





**Figure 1**. An added benefit of the new internally fused capacitor banks (right) verse the older externally fused capacitor banks (left) are the reduced risk of outages due to birds nesting and other varmints getting into the openings.



# **Transmission Line Looping**

### **Program Details**

• Estimated Cost: \$15.7M

Expected Timeframe for Project Execution: Years 2019, 2021-2022

#### **Customer Benefits**

- Reduce risk of unplanned power outages
- · Reduce the duration of unplanned power outages

This Program was validated by the Black & Veatch Risk Model analysis.

### **Program Description**

Vectren South plans to increase the number of "transmission loops" to increase the reliability and resilience of its electric system.

#### Rationale

While many of Vectren South's transmission and distribution electric substations are connected to two or more transmission lines, there are still several substations supported by a single transmission line. Providing alternate sources of power in the event of an unexpected interruption on one of the transmission lines can prevent an interruption. Substations with one transmission line source are considered "radially-fed" and are more vulnerable to reliability issues. This program will reduce the number of radial-fed substations within the Vectren South system by adding alternate transmission lines (loops) to serve those substations.

Installing transmission line loops (i.e. multiple ways to serve a customer) provides greater flexibility and more cost-effective maintenance of the electric transmission system. Substations with alternate feeds can switch their source of power, enabling operators to take a line out of service for more efficient troubleshooting and maintenance activities, with fewer impacts to customers and safer working conditions for the employee.



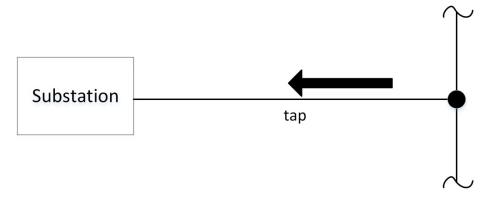


Figure 1. Example demonstrating radial feed transmission line to substation

If the tap or the main line fails, the substation will be deenergized and power will be interrupted to all customers fed from the substation.

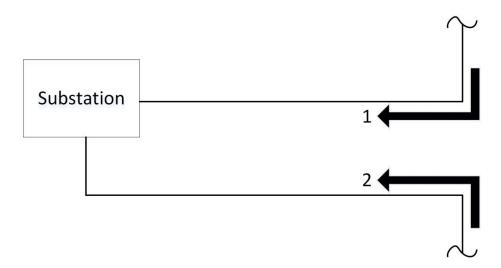


Figure 2. Example demonstrating looped transmission lines to substation

If one line fails, the substation will remain energized from the other line. Where possible, lines are installed to follow different routes to increase redundancy of service.



## **Transmission Line Rebuilds**

#### **Program Details**

Estimated Cost: \$54.5M

Expected Timeframe for Project Execution: Years 2017 - 2023

### **Customer Benefits**

- Improved reliability and power quality
- Reduced risks of emergency repair or replacement (and unplanned losses of service) due to deteriorated facilities through proactive rebuilds of identified lines

This Program was validated by the Black & Veatch Risk Model analysis.

### **Program Description**

Vectren South plans to rebuild transmission lines to Vectren South's current standard of construction.

#### Rationale

Nearly half of transmission lines across the Vectren South service territory have been in service for more than 35 years, and those lines are subject to natural decay, animal damage and normal "wear and tear." Aging transmission lines are more susceptible to failure than new and upgraded lines. Rebuilds improve line performance and extend line life, at less cost than building new lines. Transmission line rebuilds tend to use existing easements and transmission structures (where feasible) and include improved conductor capacity.

By identifying "at risk lines" based on line performance, maintenance histories and age, and by rebuilding identified transmission lines to Vectren South's current construction standards, Vectren South can enhance line reliability, standardize its storage inventory (for maintenance and repairs). Vectren South plans to coordinate these rebuilds with other system reliability and modernization programs for cost efficiencies.



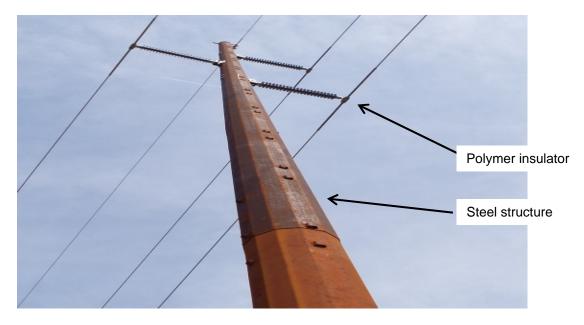


Figure 1. New construction of a transmission line using a steel pole



Figure 2. Existing transmission structure with woodpecker damage and older style construction



# **Underground Cable Replacements and Looping**

## **Program Details**

Cost Estimate: \$42.0M

Expected Timeframe for Project Execution: Years 2017 - 2023

### **Customer Benefits**

Faster outage restoration

Improved overall distribution grid power quality and reliability

This Program was validated by the Black & Veatch Risk Model analysis.

### **Program Description**

Vectren South plans to replace deteriorating underground (UG) bare concentric neutral cable (Figure 1) with jacketed primary conductor.

## Rationale

Vectren South began installing underground bare concentric neutral cable in the late 1960s. The expected life of this UG conductor is 20-to-30 years due to manufacturing technology at the time. This vintage cable possesses an exposed concentric bare copper neutral that is in direct contact with the soil. Over time, this results in corrosion and eventual failure. Because of the inability to visually assess the condition of UG conductors, Vectren South has begun replacing these assets in areas that have experienced multiple faults and have early installation dates. Vectren South has organized many UG cable assets into UG analysis areas. These areas are based on existing subdivision boundaries and other areas of collocated UG cables with similar installation dates. After identification, UG areas are created and maintained in Vectren South's Geographic Information System (GIS). Vectren South has 252 distribution circuits and of those, 130 have underground facilities contained in at least one of the 400 UG analysis areas.

Vectren South reviewed all the underground facilities within each of its 400 analysis areas and determined the average installation date for that grouping. Projects were prepared to replace the underground primary cable based on the earliest installation dates. Additional projects have been identified within the analysis areas based on known faults.

While evaluating the fault and cable age data, Vectren South will also conduct a full engineering review of the area to identify looping (alternate feed) opportunities. Looping of electric facilities greatly reduces customer outage times by providing field personnel with an alternate source to re-energize customers and isolate the faulted area until repairs can be made. This is particularly important with underground cables because the most time-consuming part of a repair and restoration effort is locating the fault. In addition to the long restoration times, the costs associated with locating and repairing underground cable exceed those for overhead line repair.

The underground conductor replacement and looping program is designed to efficiently upgrade and improve facilities that have a high risk or high consequence of failure. Vectren South replaces UG cables with the latest UG cable technology that has an external covering protecting the copper concentric neutral from corrosion.





**Figure 1.** Pictures above show an example of an UG cable with a new bare concentric neutral cable (left) and an example of corroded concentric neutral cable (right). Notice that the corroded concentric neutral cable is missing most of its copper strands.



**Figure 2.** Example of Vectren South's GIS system showing a subdivision containing multiple UG cable failures



# **Underground Network Upgrades**

## **Program Details**

Estimated Cost: \$13.3M

Expected Timeframe for Project Execution: Years 2017 - 2023

#### **Customer Benefits**

- Reduced risk of outages and increased system reliability
- Reduced risk of certain underground-related safety issues (included those related to manhole covers) for the general public and Vectren South personnel

This Program was validated by the Black & Veatch Risk Model analysis.

#### **Program Description**

Vectren South plans to upgrade its downtown Evansville underground electric network to maintain safe and reliable electric service.

#### Rationale

Vectren South's downtown Evansville underground electric network was installed in the late 1960s to provide high reliability to the downtown area. It differs from the rest of Vectren South's system by providing parallel secondary feeds from 2 to 3 different distribution circuits. The redundancy of the system and its unique protection scheme make the system very robust to cable faults and other equipment failures. Because most of the equipment is below grade, failed equipment can be difficult to replace or repair making proactive management vitally important to maintain reliability.

Vectren South upgrade plans include identification and replacement of transformers to add Remrack systems for arc flash safety, vault manhole covers to be replaced with new, vented covers that release pressure (keeping them in place during an underground fault), lead-covered primary cables and other facilities on the downtown electric network, prioritized based on age, potential risks and condition. Upgrades will enhance operations, provide Supervisory Control and Data Acquisition (SCADA) capabilities and enhance public and employee safety.







**Figure 1.** Although most network equipment is installed below grade, this example shows aged network protector and transformer installed on an elevated platform.



# **Underslung Replacements**

## **Program Details**

Cost Estimate: \$558.8K

Expected Timeframe for Project Execution: Years 2017 - 2022

### **Customer Benefits**

- Faster outage restoration and reliability
- Improved power quality for three phase customers during switching
- Enhanced safety for Vectren South personnel
- Increased operational flexibility

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

### **Program Description**

Vectren South plans to replace underslung switches in Vectren South's distribution system with standardized, three-phased Gang Operated Air Break (GOAB) switches.

### Rationale

Vectren South has experienced a number of issues related to its use of underslung switches, including age-related deterioration, arcing across the blade and corrosion. In addition, underslung switches are not rated for opening under load, which restricts how they can be used. Replacement of underslung switches with GOAB switches results in safer, more reliable, faster and more convenient switching.

Vectren South used existing Geographic Information System (GIS) data to identify and locate older three phase underslung switches. The underslung replacement criteria were set based on the proximity to other programs, such as Distribution Automation (DA) and 12kV circuit rebuilds. Additional switches were then added based on circuit tie potential and grouped by circuit in order to optimize construction efforts.







Figure 1. Example of three single underslung switches (left) and example of GOAB switch (right)

The single operating mechanism on the GOAB (red arrow on right) allows field crews to operate all three switches simultaneously while standing on the ground.







**Figure 2.** Example of closed underslung switch (left) and example of open underslung switch (right). Since switches are not gang operated, they must be opened or closed one at a time.



## **Wood Pole Replacements**

### **Program Details**

Estimated Cost: \$38.7M

• Expected Timeframe for Project Execution: Years 2017 - 2023

### **Customer Benefits**

Reduced risk of unplanned events from wood pole failures

- Reduced risk of pole-related safety hazards to the general public and Vectren South personnel
- Improved system reliability, particularly during weather events

This Program was validated by Vectren South, based on analysis of the Vectren South system, knowledge of system strengths and weaknesses, assessment of utility best practices and understanding of emerging utility technologies that can enhance system safety and reliability. Vectren South chose this approach for programs for which risk model validation was not suited.

## **Program Description**

Vectren South plans a wood pole treatment and replacement program that utilizes inspection data of approximately 11,000 poles annually with the flexibility to address urgent and emergent situations as those are identified.

### Rationale

Wood pole inspection, treatment and replacements will improve the safety and reliability of Vectren South's electrical system and strengthen it against storm damage. This program involves inspecting 10 percent of wood poles across the Vectren South system annually as part of a 10-year cycle.

Wood poles will be inspected and identified for replacement using RUS Bulletin 1730B-121 which is a guideline for inspection and treatment of wood utility poles. Vectren South uses a contracting company that specializes in pole inspections to determine which poles need to be replaced and to treat remaining poles internally and externally to extend asset life and improve overall integrity.

As part of the process, poles that have structural issues will be identified (Figure 1) and those that can be restored will be treated, both internally and externally, to extend pole life. Vectren South estimates inspections will result in 6-9% replacement rate annually depending on age and condition of the poles. These poles, and accompanying infrastructure, will then be replaced/ reinforced to meet National Electric Safety Code (NESC) requirements and Vectren South construction standards.



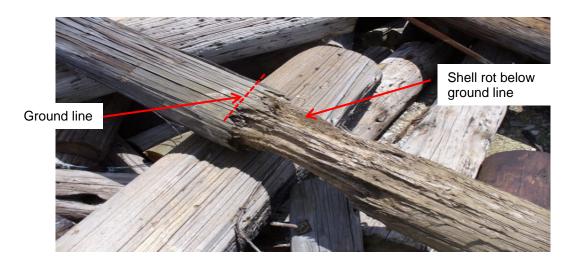


Figure 1. Pole with external decay

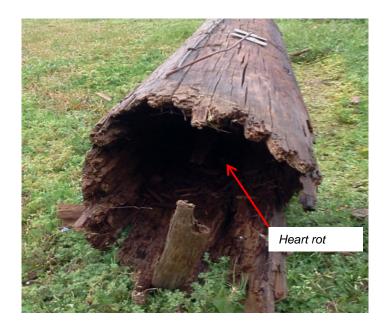


Figure 2. Pole with internal decay