

**COMMONWEALTH OF KENTUCKY
BEFORE THE
KENTUCKY PUBLIC SERVICE COMMISSION**

In the Matter of:

The Application of Duke Energy Kentucky,)
Inc., for an Order Declaring the)
Construction of Solar Facilities is an) Case No. 2017-00155
Ordinary Extension of Existing Systems in)
the Usual Course of Business)
)

APPLICATION

Now comes Duke Energy Kentucky, Inc. (Duke Energy Kentucky or the Company), pursuant to KRS 278.020, and 807 KAR 5:001, Sections 14 and 15, and other applicable law, and hereby respectfully requests from the Kentucky Public Service Commission (Commission) an Order declaring the construction of three separate solar facilities, with a combined capacity of less than 7 Mega-Watts (MWs), in three separate locations in the Company's service territory, constitutes an Ordinary Extension of Existing Systems in the Usual Course of Business. In support of this Application, Duke Energy Kentucky respectfully states as follows:

Introduction

1. Pursuant to 807 KAR 5:001, Section 14(2), Duke Energy Kentucky is a Kentucky corporation originally incorporated on March 20, 1901, in good standing, and a public utility as that term is defined in KRS 278.010(3), and, therefore, is subject to the Commission's jurisdiction. Duke Energy Kentucky is engaged in the business of furnishing natural gas and electric services to various municipalities and unincorporated

areas in Boone, Bracken, Campbell, Gallatin, Grant, Kenton, and Pendleton Counties in the Commonwealth of Kentucky.

2. Duke Energy Kentucky's business address is 139 East Fourth Street, Cincinnati, Ohio 45202. The Company's local office address in Kentucky is Duke Energy Envision Center, 4580 Olympic Boulevard, Erlanger, Kentucky 41018.

3. Copies of all orders, pleadings and other communications related to this proceeding should be sent to:

Rocco O. D'Ascenzo
Associate General Counsel
Duke Energy Kentucky, Inc.
139 E. 4th St., Cincinnati, OH 45202
Rocco.D'Ascenzo@duke-energy.com
KYfilings@duke-energy.com

Background

1. This Application is made pursuant to KRS 278.020(1) and related statutes, as well as 807 KAR 5:001 Section 15(3) and related sections.

2. KRS 278.020(1) provides in pertinent part that "[n]o person... shall commence providing utility service to or for the public or begin the construction of any plant, equipment, property, or facility for furnishing to the public any of the services enumerated in KRS 278.010... until that person has obtained from the Public Service Commission a certificate that public convenience and necessity require the service or construction."¹ KRS 278.020(1) further provides an exemption for that requirement of a Certificate of Public Convenience and Necessity (CPCN) if such new facilities are an ordinary extension in existing systems in the usual course of business.²

3. 807 KAR 5:001, Section 15(3) provides further guidance regarding the

¹ KRS 278.020(1)

² *Id.*

nature of investments that qualify as an ordinary extension in the existing system in the usual course of business providing:

A certificate of public convenience and necessity shall not be required for extensions that do not result in wasteful duplication of plant, equipment, property, or facilities, or conflict with the existing certificates or service of other utilities operating in the same area and under the jurisdiction of the commission that are in the general or contiguous area in which the utility renders service and do not involve sufficient capital outlay to materially affect the existing financial condition of the utility involved or will not result in increased charges to its customers.³

4. Duke Energy Kentucky is proposing to construct up to three separate and distinct photo-voltaic (PV) solar generating arrays, in three separate locations within its service territory (Solar Installation Projects). Each's installation's net capacity will equate to approximately between 2-3 Mega-Watts (MWs), for an aggregate total of approximately 7 MWs of new solar capacity. The Company is proposing to begin construction of the three sites in 2017, and complete construction prior to the end of December 2017 so as to maximize opportunities for a 30 percent investment tax credit that will reduce the overall project cost to customers.

5. The Company has been exploring locations for a small solar installation of less than 10 MWs in its service territory for approximately twelve months. Due to limitations in terms of size, topography (slope), availability of land and distribution circuit limitations that would be suitable for a single 7-10 MW installation, the Company began to explore the possibility of multiple, but smaller, installations in lieu of a single, larger installation. As a result of this exploration, the Company has identified three locations that are suitable for such smaller investments.

6. Duke Energy Kentucky respectfully states that the proposed Solar

³ 807 KAR 5:001, Section 15(3)

Installation Projects (both individually as well as cumulatively) qualify as an ordinary extension of an existing system in the ordinary course of business for the following reasons:

- a. The Solar Installation Projects will not result in wasteful duplication of plant, equipment or property. Duke Energy Kentucky does not currently own or operate any solar facilities. The size of these installations is not material insofar as adding significant generation capacity on the Company's system. The Solar Installation Projects will each involve a generation output of less than 3 MWs and less than 10 MWs on a cumulative basis. Therefore a site compatibility certificate pursuant to KRS 278.161 is not required on either an individual installation or total aggregate project basis. As further explained below, the approximate 7 MWs of aggregate capacity in these three separate locations is consistent with what was projected as being necessary in the Company's last integrated resource plan (IRP) filed in 2014.⁴
- b. The Solar Installation Projects will not conflict with the existing certificates or service of other utilities operating in the same area and under the jurisdiction of the commission. The Solar Installation Projects will be constructed on land owned by Duke Energy Kentucky. The Solar Installation Projects will reduce the amount of Duke Energy Kentucky load, directly serving a portion of customer demand. By doing so, the additional solar generation will offset other sources of energy that would

⁴ *In the Matter of 2014 Integrated Resource Plan of Duke Energy Kentucky, Inc.* Case No. 2014-00273, Application at 10, July 31, 2014.

have been allocated to serve native load, either generation operated by the Company or energy purchased to meet native load requirements. In addition, in the future, the Company anticipates that the Solar Installation Projects could eventually be dispatched separately into PJM Interconnection LLC along with all of the Company's generation. At the outset however, these projects will be connected to the Company's local distribution system so to reduce load on the associated circuits. In the event that a renewable portfolio standard is implemented at some future point in the Commonwealth of Kentucky, Duke Energy Kentucky will have a head start towards meeting any such compliance obligation through the renewable energy certificates (RECs) derived from these Solar Installation Projects. Until such time, any RECs created by the Solar Installation Projects will be sold in the market and any net proceeds received will be flowed back to customers in accordance with the terms of the Company's profit sharing mechanism Rider PSM. The Solar Installation Projects will be located in Duke Energy Kentucky's service territory and will be directly connected to Duke Energy Kentucky's electric delivery system.

- c. The Solar Installation Projects will not involve sufficient capital outlay to materially affect the existing financial condition of Duke Energy Kentucky. The fully loaded total costs of construction of all three phases for all three projects is estimated to be approximately \$14.8 million. Attachment 1 is a detailed budget for each of the three projects.

Constructing all three phases at once will allow Duke Energy Kentucky to achieve economies of scale for purchasing equipment and managing one Engineer, Procurement and Construction (EPC) contractor as well as to ensure that the Company will be able to take advantage of federal tax credits that will ultimately serve to lower the cost of investment and construction. This strategy will enable the Company to optimize the value of the capital that it is investing on behalf of its customers.

- d. The Solar Installation Projects will not itself result in increased charges to Duke Energy Kentucky's customers in that the estimated \$14.8 million capital investment is not significant enough to drive an application for an increase in customer rates. While the Company will eventually seek to recover the costs of owning and operating these three projects through base rates, the total aggregate cost will not result in a material increase in charges. Duke Energy Kentucky will not seek to recover the costs of this construction outside of base rates. Therefore, any impact of this investment will be offset or measured against the Company's total cost of service.
- e. Customers will benefit immediately once the resource is placed in service inasmuch as all of the zero-cost fuel energy that is generated by these facilities will be used to offset the Company's total load requirements otherwise served by generation whose fuel or energy purchases are included in and recoverable through the Company's fuel adjustment clause. Finally, benefits derived from the sale of RECs will also be

credited to customers in accordance with the Rider PSM.

7. The Solar Installation Projects include three individual sites, Walton 1, Walton 2, and Crittenden, that collectively will accommodate approximately 7 Megawatts of Alternating Current (AC) solar capacity.

8. Walton 1, will be located in Kenton County, and will be approximately 2 MWs AC of solar capacity. Walton 1 will consist of approximately 9,500 ground mounted, fixed tilt, Trina TSM-DD14A – 335 Watt solar panels (or equivalent) and approximately 32 - Schneider CL-60A String Inverters (or equivalent). The final engineering design will determine precise number of panels and inverters required. The Walton 1 system will be interconnected with the Duke Energy Kentucky Verona 42 Gen Intrcon DKY2150 distribution feeder lines. Duke Energy Kentucky will need to rebuild approximately 0.5 miles distribution lines in order to support the solar facility and take the power to the electrical grid. The anticipated cost of construction of Walton 1 is approximately \$4.38 million. Attachment 2 to this application includes a map depicting the location of the Walton 1 installation. Attachment 3 to this application includes the preliminary construction drawings, which have been stamped by a licensed Kentucky engineer. Duke Energy Kentucky does not anticipate any significant permits will be required for this construction other than local building permits once construction is ready to commence. The estimated annual ongoing cost of operation upon construction completion is approximately \$44,000.⁵

9. Walton 2, will also be located in Kenton County and on the same land as Walton 1, but will connect to a separate distribution circuit. Walton 2 will comprise

⁵ The total ongoing O&M for the Solar Projects is estimated to be approximately \$133,837 per year. The Company estimates that each individual project will require \$44,000 per year.

approximately 2 MWs AC of solar capacity. The Walton 2 project installation will consist of approximately 9,500 ground mounted, fixed tilt, Trina TSM-DD14A – 335 Watt solar panels (or equivalent) and approximately 32 - Schneider CL-60A String Inverters (or equivalent). The final engineering design will determine precise number of panels and inverters required that will be required. The Walton 2 system will interconnect with the Duke Energy Kentucky Beaver 41 Gen Intrcon DKY2149 distribution feeder lines. Duke Energy Kentucky will need to rebuild approximately 0.75 miles distribution lines in order to support the solar facility and take the power to the electrical grid. The anticipated cost of construction of Walton 2 is approximately \$4.50 million. Attachment 4 to this application includes a map depicting the location of the Walton 2 installation. Attachment 5 to this application includes the preliminary construction drawings stamped by a licensed Kentucky engineer. Duke Energy Kentucky does not anticipate any significant permits will be required for this construction other than local building permits once construction is ready to commence. The estimated annual ongoing cost of operation upon construction completion is \$44,000.

10. Finally, Crittenden Project, located in Grant County is approximately 2.75 MWs of AC solar capacity project that will consist of approximately 12,500 ground mounted, fixed tilt, Trina TSM-DD14A – 335 Watt solar panels (or equivalent) and approximately 43 - Schneider CL-60A String Inverters (or equivalent). The final engineering design will determine precise number of panels and inverters required. The Crittenden Project will interconnect with the Duke Energy Crittenden 42 Gen Intrcon DKY2151 distribution feeder lines. Duke Energy Kentucky will need to tap into these distribution lines that currently run through the site in order to support the solar facility

and take the power to the electrical grid. The anticipated cost of construction of Crittenden Project is approximately \$5.94 million. Attachment 6 to this application includes a map depicting the location of the Crittenden installation. Attachment 7 to this application includes the preliminary construction drawings stamped by a licensed Kentucky engineer. Duke Energy Kentucky does not anticipate that any significant permits will be required for this construction other than local building permits once construction is ready to commence. The estimated annual ongoing cost of operation upon construction completion is \$44,000.

11. The Solar Installation Projects are similar in nature to other renewable generation projects considered by the Commission and determined to be ordinary extensions of an existing system in the ordinary course of business and not requiring full CPCN approval.⁶

12. The Solar Installation Projects are intended to provide a small amount of renewable resource generation to Duke Energy Kentucky's predominantly coal-based generation portfolio. The three small installations will also allow Duke Energy Kentucky to gain operating experience with an intermittent, utility-owned renewable resource and will allow Duke Energy Kentucky to begin steps toward meeting any future carbon reduction or renewable targets that could be established by either the Commonwealth of

⁶ See e.g. *In re: Application of East Kentucky Power Cooperative, Inc., for an Order Declaring that the Hardin County Landfill Gas to Energy Project to be an Ordinary Extension of an Existing System in the Usual Course of Business*, Order, Case No 2005-00164, (Ky.P.S.C. July 8, 2005); finding that 2.4 MW landfill gas generating facility at a cost of approximately \$5 million was an ordinary extension; *In re: Application of East Kentucky power Cooperative, Inc. for an Order Declaring the Pendleton County Landfill Gas to Energy Project to be an Ordinary Extension of Existing Systems in the Usual Course of Business*, Order, Case No. 2006-0033, (Ky. P.S.C. March 10, 2006); finding 3.2 MW landfill gas generator with a cost of approximately \$5 Million was an ordinary extension; *In re: Application of East Kentucky Power Cooperative for an Order Declaring that the Maysville-Mason County Landfill Gas to Energy Project to be an Ordinary Extension of the Existing System in the Usual Course of Business*, Order, Case No. 2007-00509, (Ky. P.S.C. March 26, 2008); finding 1.6 MW landfill gas generator with a cost of approximately \$2.5 Million was an ordinary extension.

Kentucky or on the Federal level. The Solar Installation Projects are small in nature so to allow the Company to gain experience with owning, operating, and maintaining renewable generation resources now, so that, for example, if carbon legislation is eventually enacted, the learning and compliance curves will not be so steep. These small-scale Solar Installation Projects will also allow the Company to gain such experience with a minimal capital commitment so as not to overburden customers with costs of a more robust and expansive investment.

13. As part of its most recent Integrated Resource Plan (IRP), filed July 31, 2014, in Case No., 2014-00273, Duke Energy Kentucky, among other things, projected a less than 1% annual load growth, but nonetheless, due to anticipated CO₂ regulations, identified the need for renewable resources in the coming years. The Company's analysis identified a need for approximately 5 MW of renewable resources beginning in 2019, with annual 5-7 MW installations coming on line through 2023, and additional MWs between 2-5 MWs through 2028.⁷ The Company's IRP established that of the renewable resources analyzed, solar was the most cost effective, followed closely by wind.

14. As a result, Duke Energy Kentucky believes that the need exists to begin procurement of some level of solar now, and to take advantage of the current federal tax credits currently that are set to phase down beginning in 2020 as well as the existing market conditions that have made such investments more affordable. Projects built after 2019 will receive a declining investment tax credit (ITC) until 2021. After 2021, the commercial and utility credit will drop to a permanent 10 percent.⁸

⁷ *In the Matter of 2014 Integrated Resource Plan of Duke Energy Kentucky, Inc.* Case No. 2014-00273, Application at 10, July 31, 2014.

⁸ 26 U.S. Code § 48 - Energy credit:

15. The Solar Installation will allow the Company to run its Kentucky- sited generation portfolio in a cleaner fashion in terms of total carbon output without a degradation to the capacity available to serve its customer load requirements. The Solar Installation Projects are anticipated to have an approximate 21.6% capacity factor, which will provide some reduction in terms of Duke Energy Kentucky's total carbon emission to the extent these projects will offset the amount of coal-fired generation that is currently used to satisfy native load requirements.

WHEREFORE, Duke Energy Kentucky respectfully requests that the Commission:

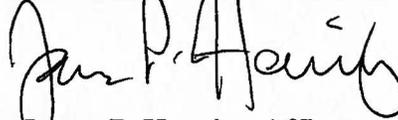
- 1) Issue a declaration that its proposed Solar Installation Projects constitute an ordinary extension of an existing system in the ordinary course of business.
- 2) Grant any other relief to which the Company may be entitled.

VERIFICATION

STATE OF OHIO)
) SS:
COUNTY OF HAMILTON)

The undersigned, James P. Henning being duly sworn, deposes and says that he is the President of Duke Energy Kentucky, Inc., that he has personal knowledge of the matters set forth in the foregoing, and that the information contained therein is true and correct to the best of his knowledge, information and belief.

DUKE ENERGY KENTUCKY



By: James P. Henning Affiant
President
Duke Energy Kentucky, Inc.

Subscribed and sworn to before me by James P. Henning, President, Duke Energy Kentucky, Inc., on this 6TH day of April, 2017.

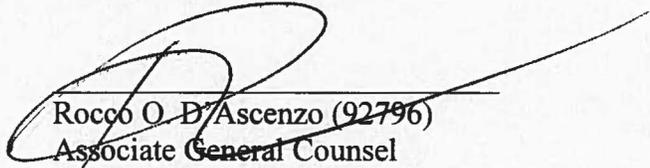


NOTARY PUBLIC

ADELE M. FRISCH
Notary Public, State of Ohio
My Commission Expires 01-05-2019

My Commission Expires: 1/5/2019

Its Attorneys,

A large, stylized handwritten signature in black ink, appearing to read 'R. D'Ascenzo', is written over a horizontal line. The signature is fluid and extends to the right of the line.

Rocco O. D'Ascenzo (92796)

Associate General Counsel

Amy B. Spiller (85309)

Deputy General Counsel

Duke Energy Business Services, LLC

139 East Fourth Street, 1313 Main

Cincinnati, Ohio 45201-0960

Phone: (513) 287-4320

Fax: (513) 287-4385

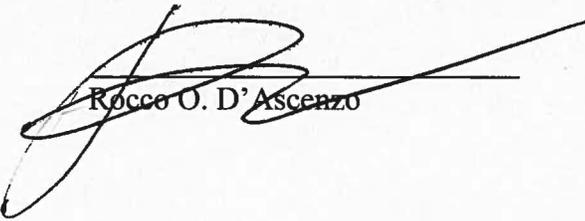
e-mail:rocco.d'ascenzo@duke-energy.com

e-mail:amy.spiller@duke-energy.com

CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing Application of Duke Energy Kentucky, Inc. has been served via overnight mail to the following party on this 10th day of April 2017.

Rebecca W. Goodman, Executive Director
Kent Chandler, Assistant Attorney General
The Office of the Attorney General
Utility Intervention and Rate Division
700 Capital Ave. Ste. 20
Frankfort, Kentucky 40601 (502)696-5453


Rocco O. D'Ascenzo

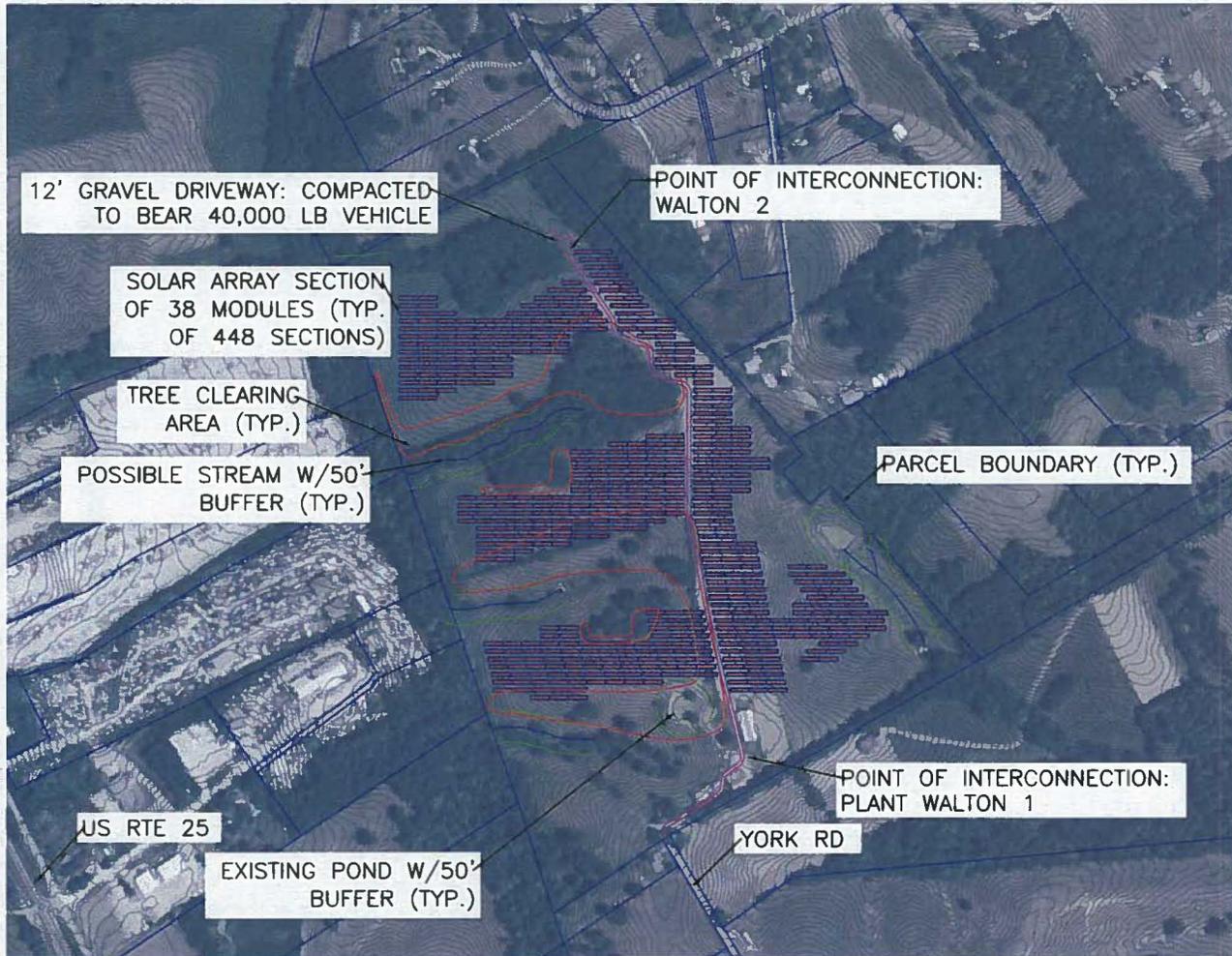
KY Solar Program Estimates

Crittenden Solar Estimate		Estimated Cost
EPC		\$3,031,900
Panels		\$1,456,057
Inverters		\$205,000
Land Purchases		\$385,000
Grid Interconnection		\$191,699
Duke Development, Project Management Oversight & Contingency		\$566,476
	Total Estimate	\$5,836,132
AFUDC Estimate		\$ 102,298
	Estimate Inclusive of AFUDC	\$5,938,430

Combined KY Solar Estimate		Estimated Cost
EPC		\$6,843,700
Panels		\$3,623,213
Inverters		\$509,000
Land Purchases		\$825,000
Grid Interconnection		\$1,012,620
Duke Development, Project Management Oversight & Contingency		\$1,699,427
	Total Estimate	\$14,512,960
AFUDC Estimate		\$306,893
	Estimate Inclusive of AFUDC	\$14,819,853

Walton 1 Solar Estimate		Estimated Cost
EPC		\$1,893,900
Panels		\$1,083,578
Inverters		\$152,000
Land Purchases		\$220,000
Grid Interconnection		\$364,501
Duke Development, Project Management Oversight & Contingency		\$566,476
	Total Estimate	\$4,280,454
AFUDC Estimate		\$102,298
	Estimate Inclusive of AFUDC	\$4,382,752

Walton 2 Solar Estimate		Estimated Cost
EPC		\$1,917,900
Panels		\$1,083,578
Inverters		\$152,000
Land Purchases		\$220,000
Grid Interconnection		\$456,420
Duke Development, Project Management Oversight & Contingency		\$566,476
	Total Estimate	\$4,396,373
AFUDC Estimate		\$102,298
	Estimate Inclusive of AFUDC	\$4,498,671



PLANT INFORMATION	
APPROXIMATE ADDRESS	352 YORK RD, WALTON, KY 41094
SITE LOCATION (LAT, LONG)	38.848899, -84.592044
AC CAPACITY (MW)	2.029; 2.029
DC CAPACITY (MW)	3.195; 3.195
FIXED TILT ANGLE (DEG.) OR TRACKING	25
INVERTER MODEL (QTY.)	SCHNEIDER CL-60A (32; 32)
MODULE MODEL (QTY.)	TRINA TSM-DD14A (II) 335W (8,512; 8,512)

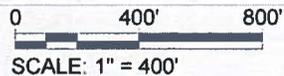
NOTES:

- ALL LOCATIONS ARE APPROXIMATE— PARCEL DATA & TOPOGRAPHY FROM GIS
- CONTOUR INTERVAL: 2'



A1

SITE PLAN



REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION	SCALE: 1:400	DES:	TITLE			
6	3/20/17		SOLAR				RJT		KY PE STAMP, DRIVEWAY, POI, MODS	DWG TYPE: PLAN <td>DFTR:</td> <td>CONCEPTUAL SITE PLAN</td>	DFTR:	CONCEPTUAL SITE PLAN			
5	2/8/17		SOLAR				RJT		TREE CLEARING AREA, MODULE UPDATE	JOB NO:	CHRD:	FOR WALTON 1 AND WALTON 2 SOLAR POWER PLANTS			
4	12/2/16		SOLAR				RJT		WALTON 1 CAPACITY UPDATE	DATE: 10/27/16	ENGR: RJT	DWG SIZE	DRAWING NO.	SHEET NO	REVISION
3	11/30/16		SOLAR				RJT		SMALL CHANGE TO WALTON 2 CAPACITY	APPD:	ANSI B 11"x17"				6



FILENAME: SITEPLAN_WALTON_EXTENSION.DWG

12.47 KV DUKE ENERGY KENTUCKY CIRCUIT H9321250042

NOTES:

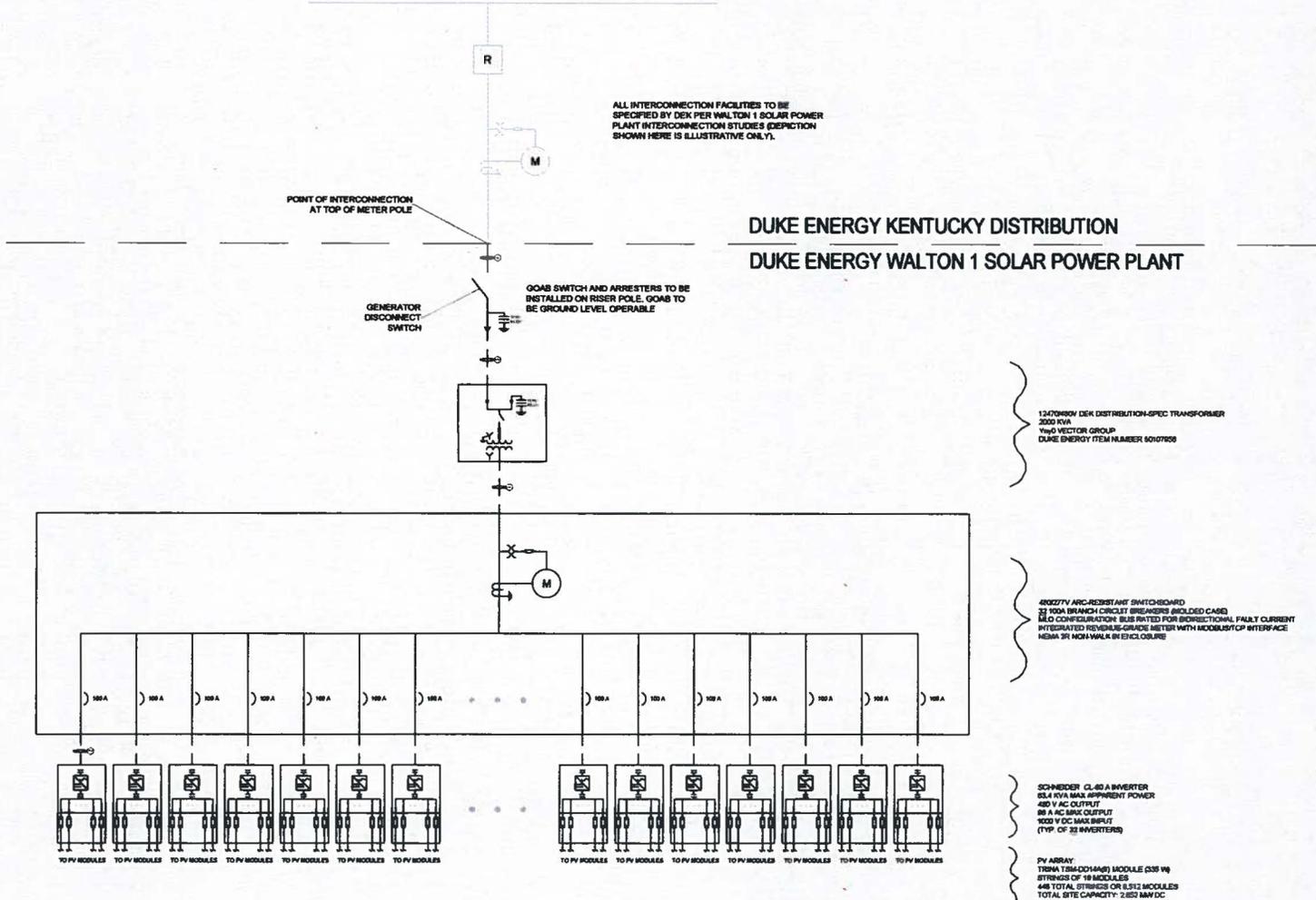
- FACILITY INFORMATION:**
PROJECT OWNER: DUKE ENERGY KENTUCKY, LLC
PROJECT NAME: WALTON 1 SOLAR POWER PLANT
SITE APPROX. ADDRESS: 352 YORK RD, WALTON, KY 41094
COORDINATES (LAT, LONG): 38.848899, -84.592044
AC CAPACITY: 2.029 MW
DC CAPACITY: 2.852 MW

2. CONDUCTOR SPECIFICATION:

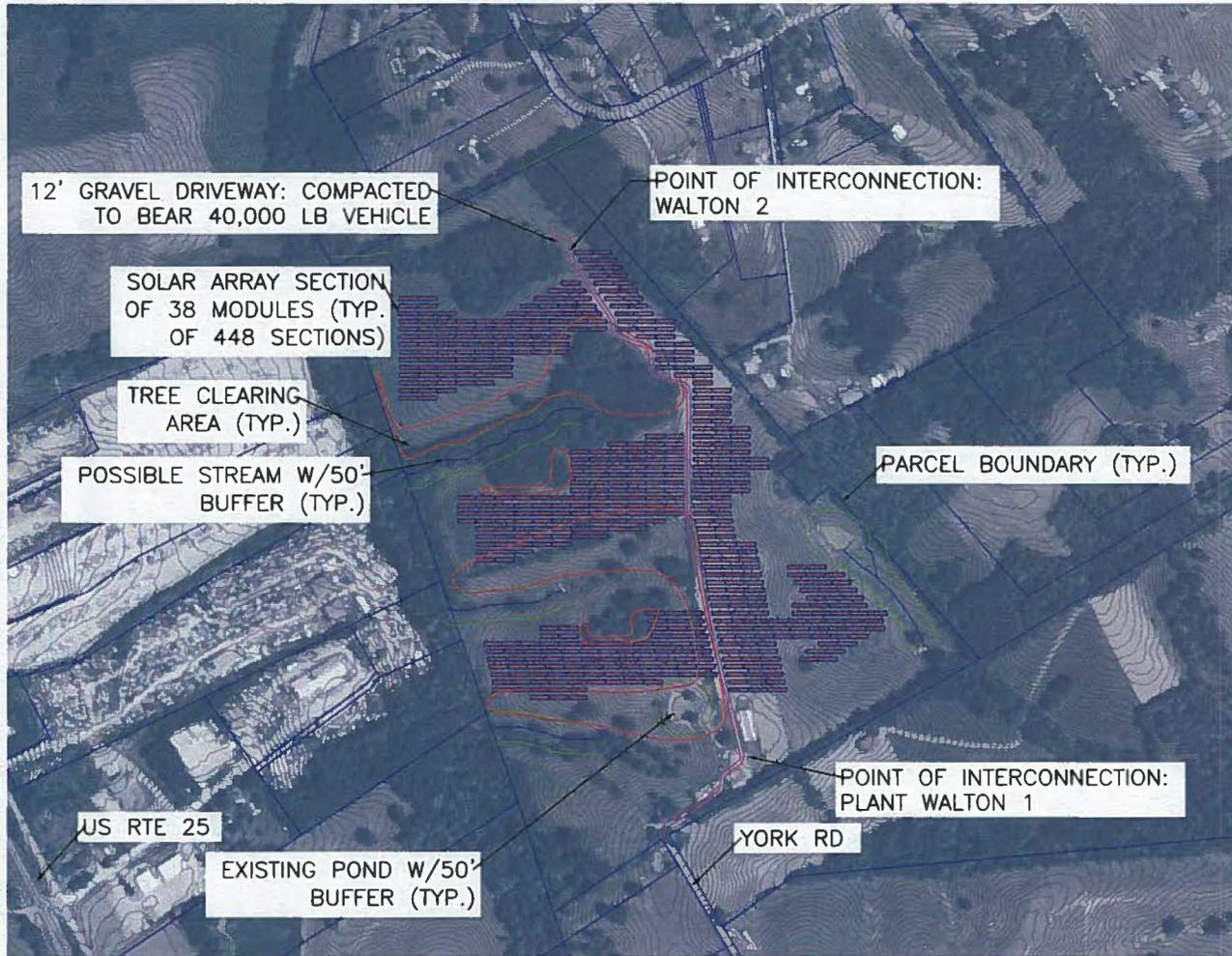
TYM #	CONDUCTORS	CONDUIT
1	3/0 AL 12.47KV SECONDARY CABLE, AL CONDUCTOR, 1 COILED PER PHASE	SCH 40 PVC
2	3/0 60KV SECONDARY TRIPLEX CABLE, AL CONDUCTOR	DIRECT BURIAL
3	1/4 15 KV TRIPLEX PRIMARY CABLE, SOLID AL CONDUCTOR	DIRECT BURIAL
4	CONDUCTOR SIZE & MATERIAL TO BE SHOWN AS SPECIFIED ON DDC DISTRIBUTION SIDE OF POI	OVERHEAD LINE

- ALL 12.47 KV FACILITIES WITHIN SOLAR PLANT TO BE CONSTRUCTED TO DUKE ENERGY KENTUCKY DISTRIBUTION STANDARDS

ALL INTERCONNECTION FACILITIES TO BE SPECIFIED BY DEK PER WALTON 1 SOLAR POWER PLANT INTERCONNECTION STUDIES (DESCRIPTION SHOWN HERE IS ILLUSTRATIVE ONLY).



REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION	SCALE:	DES:	TITLE
3	3/20/17		SOLAR				RJT		MODULE QTY., KY PE STAMP	1/8" = 1'		ONE-LINE DIAGRAM
2	2/7/17		SOLAR				RJT		REVISED POI CONFIGURATION			FOR
1	12/2/16		SOLAR				RJT		NOW WALTON 1; SMALL CAPACITY CHG			WALTON 1 SOLAR POWER PLANT
0	10/26/16		SOLAR				RJT		FOR INTERCONNECTION APPLICATION	DATE: 10/26/16	ENGR: RJT	DWG SIZE
										APPD:	ANSI B 11x17"	SHEET NO.
										FILENAME: OLD_WALTON.DWG		REVISION
												3



PLANT INFORMATION	
APPROXIMATE ADDRESS	352 YORK RD, WALTON, KY 41094
SITE LOCATION (LAT, LONG)	38.848899, -84.592044
AC CAPACITY (MW)	2.029; 2.029
DC CAPACITY (MW)	3.195; 3.195
FIXED TILT ANGLE (DEG.) OR TRACKING	25
INVERTER MODEL (QTY.)	SCHNEIDER CL-60A (32; 32)
MODULE MODEL (QTY.)	TRINA TSM-DD14A (II) 335W (8,512; 8,512)

NOTES:

- ALL LOCATIONS ARE APPROXIMATE- PARCEL DATA & TOPOGRAPHY FROM GIS
- CONTOUR INTERVAL: 2'



REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION	SCALE: 1:400	DES:	TITLE
6	3/20/17		SOLAR				RJT		KY PE STAMP, DRIVEWAY, POI, MODS	DWG TYPE: PLAN	DFTR:	CONCEPTUAL SITE PLAN
5	2/8/17		SOLAR				RJT		TREE CLEARING AREA, MODULE UPDATE	JOB NO:	ENGR:	FOR WALTON 1 AND WALTON 2 SOLAR POWER PLANTS
4	12/2/16		SOLAR				RJT		WALTON 1 CAPACITY UPDATE	DATE: 10/27/16	ENGR: RJT	DWG SIZE: ANS B 11"x17"
3	11/30/16		SOLAR				RJT		SMALL CHANGE TO WALTON 2 CAPACITY	APPD:	DRAWING NO:	SHEET NO:
										FILENAME: SITEPLAN_WALTON_EXTENSION.DWG	REVISION	6

12.47 KV DUKE ENERGY KENTUCKY CIRCUIT H9320860041

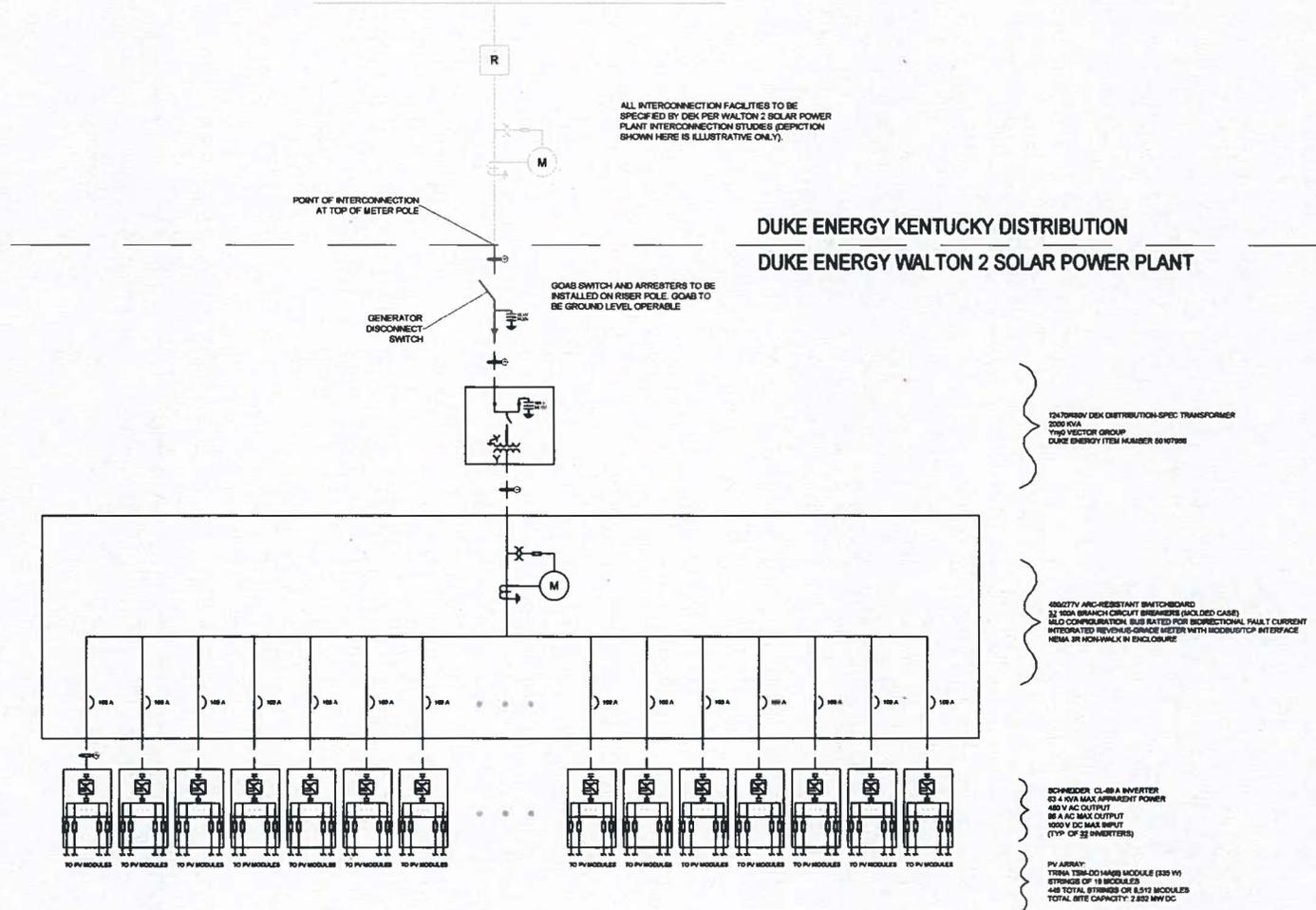
NOTES:

1. FACILITY INFORMATION:
PROJECT OWNER: DUKE ENERGY KENTUCKY, LLC
PROJECT NAME: WALTON 2 SOLAR POWER PLANT
SITE APPROX. ADDRESS: 352 YORK RD, WALTON, KY 41094
COORDINATES (LAT, LONG): 38.848899, -84.592044
AC CAPACITY: 2.029 MW
DC CAPACITY: 2.852 MW

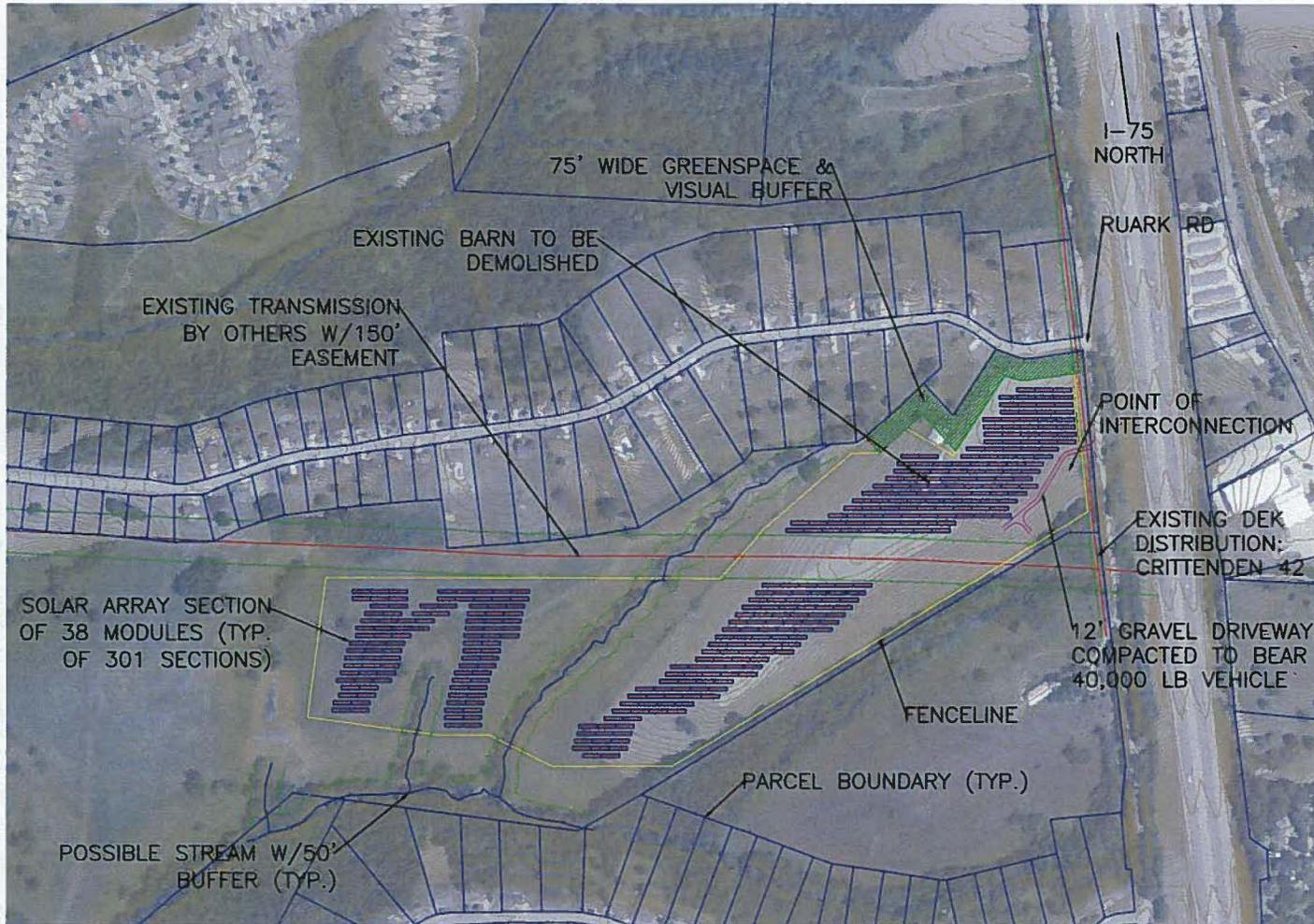
2. CONDUCTOR SPECIFICATION:

TAG #	CONDUCTORS	COMMENT
1	100 KVM, 800 SECONDARY CABLE AL CONDUCTOR, 48 BUNDLES PER 215455	8CH 40 PVC
2	20L 800V SECONDARY TRIPLEX CABLE AL CONDUCTOR	DIRECT BURIAL
3	10L 15 KV TRIPLEX PRIMARY CABLE, BOLD AL CONDUCTOR	DIRECT BURIAL
4	CONDUCTOR SIZE & MATERIAL TO BE SAME AS SPECIFIED ON DEK DISTRIBUTION SIDE OF POI	OVERHEAD LINE

3. ALL 12.47 KV FACILITIES WITHIN SOLAR PLANT TO BE CONSTRUCTED TO DUKE ENERGY KENTUCKY DISTRIBUTION STANDARDS



REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION	SCALE:	NTS	DES:	TITLE		
2	3/20/17		SOLAR				RJT		MODULE QTY., KY PE STAMP	DUKE ENERGY	DRG TYPE: SCHEMATIC	DFTR:	ONE-LINE DIAGRAM		
1	2/6/17		SOLAR				RJT		REVISED POI CONFIGURATION		JOB NO:	CHKD:	FOR		
0	11/30/16		SOLAR				RJT		FOR INTERCONNECTION APPLICATION		DATE: 11/30/16	ENGR: RJT	WALTON 2 SOLAR POWER PLANT		
FILENAME: OLD WALTON2.DWG										APPD:	ANSI B 11*17	DRWG SIZE	DRAWING NO.	SHEET NO	REVISION
														2	



PLANT INFORMATION	
APPROXIMATE ADDRESS	922 RUARK RD, DRY RIDGE, KY 41035
SITE LOCATION (LAT, LONG)	38.752058, -84.612386
AC CAPACITY (MW)	2.726
DC CAPACITY (MW)	3.832
FIXED TILT ANGLE (DEG.) OR TRACKING	25
INVERTER MODEL (QTY.)	SCHNEIDER CL-60A (43)
MODULE MODEL (QTY.)	TRINA TSM-PE14A 335W (11,438)

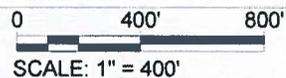
NOTES:

- ALL LOCATIONS ARE APPROXIMATE— PARCEL DATA & TOPOGRAPHY FROM GIS
- CONTOUR INTERVAL: 2'



A1

SITE PLAN



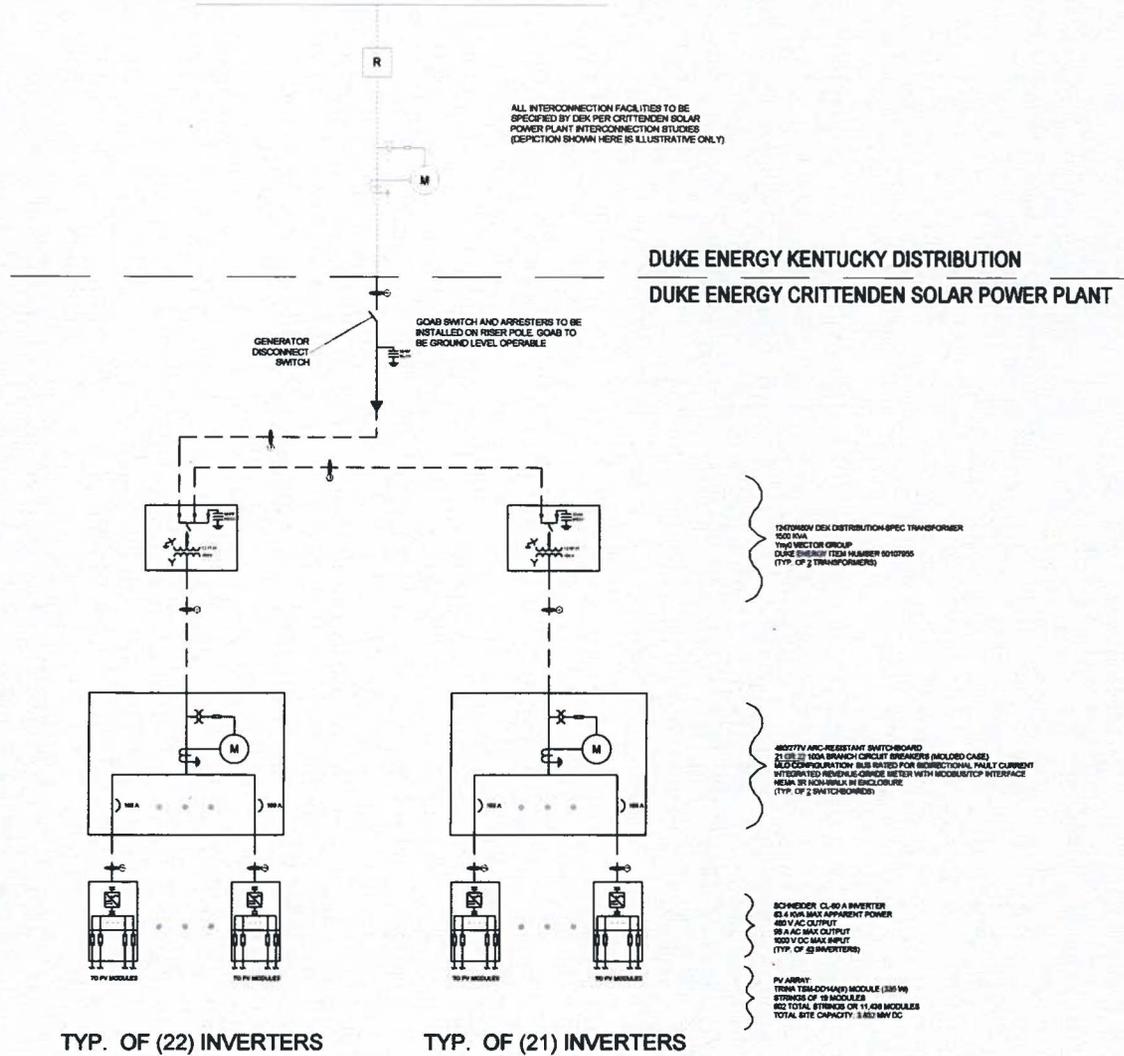
REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION	SCALE:	DES:	TITLE
1	3/20/17		SOLAR				RJT		DRIVEWAY, PE STAMP, MODULE QTY.	1:400		CONCEPTUAL SITE PLAN FOR CRITTENDEN SOLAR POWER PLANT
0	1/5/17		SOLAR				RJT		RELEASE FOR INTERCONNECTION			
										DWG TYPE: PLAN	DFTR:	FOR
FILENAME: SITEPLAN_CRITTENDEN.DWG										JOB NO:	CHKD:	DWG SIZE
										DATE: 1/5/17	ENGR: RJT	DRAWING NO.
										APPD:		SHEET NO.
												ANSI B 11"x17"
												REVISION
												1

12.47 KV DUKE ENERGY KENTUCKY CIRCUIT H9321240042

NOTES:

- FACILITY INFORMATION:**
PROJECT OWNER: DUKE ENERGY KENTUCKY, LLC
PROJECT NAME: CRITTENDEN SOLAR POWER PLANT
SITE APPROX. ADDRESS: 922 RUARK RD, DRY RIDGE, KY 41035
COORDINATES (LAT, LONG): 38.752058, -84.612386
AC CAPACITY: 2.726 MW
DC CAPACITY: 3.832 MW
- CONDUCTOR SPECIFICATION:**

TYPE #	CONDUCTORS	CONDUIT
1	180 SECONDARY TRIPLEX CABLE, AL CONDUCTOR, 5 CIRCLES PER DIVIDE.	804 HD PVC
2	36 SECONDARY TRIPLEX CABLE, AL CONDUCTOR.	DIRECT BURIAL
3	18 18 KV TRIPLEX PRIMARY CABLE, BOLD AL CONDUCTOR.	DIRECT BURIAL
4	CONDUCTOR SIZE & MATERIAL TO BE SHOWN AS SPECIFIED ON DEK DISTRIBUTION SIDE OF POI	OVERHEAD LINE
- ALL 12.47 KV FACILITIES WITHIN SOLAR PLANT TO BE CONSTRUCTED TO DUKE ENERGY KENTUCKY DISTRIBUTION STANDARDS



REV	DATE	JOB NO.	PROJECT TYPE	DES	DFTR	CHKD	ENGR	APPD	DESCRIPTION	SCALE:	NTS	DES:	TITLE								
2	3/20/17		SOLAR				RJT		MODULE QTY., KY PE STAMP	DUKE ENERGY	1/5/17	ENGR: RJT	ONE-LINE DIAGRAM								
1	2/7/17		SOLAR				RJT		REVISED POI CONFIGURATION			APPD:	CRITTENDEN SOLAR POWER PLANT								
0	1/5/17		SOLAR				RJT		RELEASE FOR INTERCONNECTION	FILENAME:	OLD CRITTENDEN.DWG	DATE:	ANSI B 11x17"								
										DWG TYPE:	SCHEMATIC	JOB NO:									
										DATE:	1/5/17	ENGR:	RJT	DWG SIZE:		DRAWING NO.:		SHEET NO.:		REVISION:	2