

Appendix G

A. Introduction

1. **Title:** Physical Security
2. **Number:** CIP-014-2
3. **Purpose:** To identify and protect Transmission stations and Transmission substations, and their associated primary control centers, that if rendered inoperable or damaged as a result of a physical attack could result in instability, uncontrolled separation, or Cascading within an Interconnection.
4. **Applicability:**

4.1. Functional Entities:

- 4.1.1** Transmission Owner that owns a Transmission station or Transmission substation that meets any of the following criteria:

4.1.1.1 Transmission Facilities operated at 500 kV or higher. For the purpose of this criterion, the collector bus for a generation plant is not considered a Transmission Facility, but is part of the generation interconnection Facility.

4.1.1.2 Transmission Facilities that are operating between 200 kV and 499 kV at a single station or substation, where the station or substation is connected at 200 kV or higher voltages to three or more other Transmission stations or substations and has an "aggregate weighted value" exceeding 3000 according to the table below. The "aggregate weighted value" for a single station or substation is determined by summing the "weight value per line" shown in the table below for each incoming and each outgoing BES Transmission Line that is connected to another Transmission station or substation. For the purpose of this criterion, the collector bus for a generation plant is not considered a Transmission Facility, but is part of the generation interconnection Facility.

Voltage Value of a Line	Weight Value per Line
less than 200 kV (not applicable)	(not applicable)
200 kV to 299 kV	700
300 kV to 499 kV	1300
500 kV and above	0

- 4.1.1.3** Transmission Facilities at a single station or substation location that are identified by its Reliability Coordinator, Planning Coordinator, or

Transmission Planner as critical to the derivation of Interconnection Reliability Operating Limits (IROLs) and their associated contingencies.

4.1.1.4 Transmission Facilities identified as essential to meeting Nuclear Plant Interface Requirements.

4.1.2 Transmission Operator.

Exemption: Facilities in a “protected area,” as defined in 10 C.F.R. § 73.2, within the scope of a security plan approved or accepted by the Nuclear Regulatory Commission are not subject to this Standard; or, Facilities within the scope of a security plan approved or accepted by the Canadian Nuclear Safety Commission are not subject to this Standard.

5. Effective Dates:

See Implementation Plan for CIP-014-2.

6. Background:

This Reliability Standard addresses the directives from the FERC order issued March 7, 2014, *Reliability Standards for Physical Security Measures*, 146 FERC ¶ 61,166 (2014), which required NERC to develop a physical security reliability standard(s) to identify and protect facilities that if rendered inoperable or damaged could result in instability, uncontrolled separation, or Cascading within an Interconnection.

B. Requirements and Measures

R1. Each Transmission Owner shall perform an initial risk assessment and subsequent risk assessments of its Transmission stations and Transmission substations (existing and planned to be in service within 24 months) that meet the criteria specified in Applicability Section 4.1.1. The initial and subsequent risk assessments shall consist of a transmission analysis or transmission analyses designed to identify the Transmission station(s) and Transmission substation(s) that if rendered inoperable or damaged could result in instability, uncontrolled separation, or Cascading within an Interconnection. *[VRF: High; Time-Horizon: Long-term Planning]*

1.1. Subsequent risk assessments shall be performed:

- At least once every 30 calendar months for a Transmission Owner that has identified in its previous risk assessment (as verified according to Requirement R2) one or more Transmission stations or Transmission substations that if rendered inoperable or damaged could result in instability, uncontrolled separation, or Cascading within an Interconnection; or
- At least once every 60 calendar months for a Transmission Owner that has not identified in its previous risk assessment (as verified according to Requirement R2) any Transmission stations or Transmission substations that if rendered inoperable or damaged could result in instability, uncontrolled separation, or Cascading within an Interconnection.

1.2. The Transmission Owner shall identify the primary control center that operationally controls each Transmission station or Transmission substation identified in the Requirement R1 risk assessment.

M1. Examples of acceptable evidence may include, but are not limited to, dated written or electronic documentation of the risk assessment of its Transmission stations and Transmission substations (existing and planned to be in service within 24 months) that meet the criteria in Applicability Section 4.1.1 as specified in Requirement R1. Additionally, examples of acceptable evidence may include, but are not limited to, dated written or electronic documentation of the identification of the primary control center that operationally controls each Transmission station or Transmission substation identified in the Requirement R1 risk assessment as specified in Requirement R1, Part 1.2.

R2. Each Transmission Owner shall have an unaffiliated third party verify the risk assessment performed under Requirement R1. The verification may occur concurrent with or after the risk assessment performed under Requirement R1. *[VRF: Medium; Time-Horizon: Long-term Planning]*

2.1. Each Transmission Owner shall select an unaffiliated verifying entity that is either:

- A registered Planning Coordinator, Transmission Planner, or Reliability Coordinator; or
 - An entity that has transmission planning or analysis experience.
- 2.2.** The unaffiliated third party verification shall verify the Transmission Owner's risk assessment performed under Requirement R1, which may include recommendations for the addition or deletion of a Transmission station(s) or Transmission substation(s). The Transmission Owner shall ensure the verification is completed within 90 calendar days following the completion of the Requirement R1 risk assessment.
- 2.3.** If the unaffiliated verifying entity recommends that the Transmission Owner add a Transmission station(s) or Transmission substation(s) to, or remove a Transmission station(s) or Transmission substation(s) from, its identification under Requirement R1, the Transmission Owner shall either, within 60 calendar days of completion of the verification, for each recommended addition or removal of a Transmission station or Transmission substation:
- Modify its identification under Requirement R1 consistent with the recommendation; or
 - Document the technical basis for not modifying the identification in accordance with the recommendation.
- 2.4.** Each Transmission Owner shall implement procedures, such as the use of non-disclosure agreements, for protecting sensitive or confidential information made available to the unaffiliated third party verifier and to protect or exempt sensitive or confidential information developed pursuant to this Reliability Standard from public disclosure.
- M2.** Examples of acceptable evidence may include, but are not limited to, dated written or electronic documentation that the Transmission Owner completed an unaffiliated third party verification of the Requirement R1 risk assessment and satisfied all of the applicable provisions of Requirement R2, including, if applicable, documenting the technical basis for not modifying the Requirement R1 identification as specified under Part 2.3. Additionally, examples of evidence may include, but are not limited to, written or electronic documentation of procedures to protect information under Part 2.4.
- R3.** For a primary control center(s) identified by the Transmission Owner according to Requirement R1, Part 1.2 that a) operationally controls an identified Transmission station or Transmission substation verified according to Requirement R2, and b) is not under the operational control of the Transmission Owner: the Transmission Owner shall, within seven calendar days following completion of Requirement R2, notify the Transmission Operator that has operational control of the primary control center of

such identification and the date of completion of Requirement R2. *[VRF: Lower; Time-Horizon: Long-term Planning]*

- 3.1.** If a Transmission station or Transmission substation previously identified under Requirement R1 and verified according to Requirement R2 is removed from the identification during a subsequent risk assessment performed according to Requirement R1 or a verification according to Requirement R2, then the Transmission Owner shall, within seven calendar days following the verification or the subsequent risk assessment, notify the Transmission Operator that has operational control of the primary control center of the removal.
- M3.** Examples of acceptable evidence may include, but are not limited to, dated written or electronic notifications or communications that the Transmission Owner notified each Transmission Operator, as applicable, according to Requirement R3.
- R4.** Each Transmission Owner that identified a Transmission station, Transmission substation, or a primary control center in Requirement R1 and verified according to Requirement R2, and each Transmission Operator notified by a Transmission Owner according to Requirement R3, shall conduct an evaluation of the potential threats and vulnerabilities of a physical attack to each of their respective Transmission station(s), Transmission substation(s), and primary control center(s) identified in Requirement R1 and verified according to Requirement R2. The evaluation shall consider the following: *[VRF: Medium; Time-Horizon: Operations Planning, Long-term Planning]*
 - 4.1.** Unique characteristics of the identified and verified Transmission station(s), Transmission substation(s), and primary control center(s);
 - 4.2.** Prior history of attack on similar facilities taking into account the frequency, geographic proximity, and severity of past physical security related events; and
 - 4.3.** Intelligence or threat warnings received from sources such as law enforcement, the Electric Reliability Organization (ERO), the Electricity Sector Information Sharing and Analysis Center (ES-ISAC), U.S. federal and/or Canadian governmental agencies, or their successors.
- M4.** Examples of evidence may include, but are not limited to, dated written or electronic documentation that the Transmission Owner or Transmission Operator conducted an evaluation of the potential threats and vulnerabilities of a physical attack to their respective Transmission station(s), Transmission substation(s) and primary control center(s) as specified in Requirement R4.
- R5.** Each Transmission Owner that identified a Transmission station, Transmission substation, or primary control center in Requirement R1 and verified according to Requirement R2, and each Transmission Operator notified by a Transmission Owner according to Requirement R3, shall develop and implement a documented physical security plan(s) that covers their respective Transmission station(s), Transmission substation(s), and primary control center(s). The physical security plan(s) shall be

developed within 120 calendar days following the completion of Requirement R2 and executed according to the timeline specified in the physical security plan(s). The physical security plan(s) shall include the following attributes: *[VRF: High; Time-Horizon: Long-term Planning]*

- 5.1.** Resiliency or security measures designed collectively to deter, detect, delay, assess, communicate, and respond to potential physical threats and vulnerabilities identified during the evaluation conducted in Requirement R4.
 - 5.2.** Law enforcement contact and coordination information.
 - 5.3.** A timeline for executing the physical security enhancements and modifications specified in the physical security plan.
 - 5.4.** Provisions to evaluate evolving physical threats, and their corresponding security measures, to the Transmission station(s), Transmission substation(s), or primary control center(s).
- M5.** Examples of evidence may include, but are not limited to, dated written or electronic documentation of its physical security plan(s) that covers their respective identified and verified Transmission station(s), Transmission substation(s), and primary control center(s) as specified in Requirement R5, and additional evidence demonstrating execution of the physical security plan according to the timeline specified in the physical security plan.
- R6.** Each Transmission Owner that identified a Transmission station, Transmission substation, or primary control center in Requirement R1 and verified according to Requirement R2, and each Transmission Operator notified by a Transmission Owner according to Requirement R3, shall have an unaffiliated third party review the evaluation performed under Requirement R4 and the security plan(s) developed under Requirement R5. The review may occur concurrently with or after completion of the evaluation performed under Requirement R4 and the security plan development under Requirement R5. *[VRF: Medium; Time-Horizon: Long-term Planning]*
- 6.1.** Each Transmission Owner and Transmission Operator shall select an unaffiliated third party reviewer from the following:
 - An entity or organization with electric industry physical security experience and whose review staff has at least one member who holds either a Certified Protection Professional (CPP) or Physical Security Professional (PSP) certification.
 - An entity or organization approved by the ERO.
 - A governmental agency with physical security expertise.

- An entity or organization with demonstrated law enforcement, government, or military physical security expertise.
- 6.2.** The Transmission Owner or Transmission Operator, respectively, shall ensure that the unaffiliated third party review is completed within 90 calendar days of completing the security plan(s) developed in Requirement R5. The unaffiliated third party review may, but is not required to, include recommended changes to the evaluation performed under Requirement R4 or the security plan(s) developed under Requirement R5.
- 6.3.** If the unaffiliated third party reviewer recommends changes to the evaluation performed under Requirement R4 or security plan(s) developed under Requirement R5, the Transmission Owner or Transmission Operator shall, within 60 calendar days of the completion of the unaffiliated third party review, for each recommendation:
- Modify its evaluation or security plan(s) consistent with the recommendation; or
 - Document the reason(s) for not modifying the evaluation or security plan(s) consistent with the recommendation.
- 6.4.** Each Transmission Owner and Transmission Operator shall implement procedures, such as the use of non-disclosure agreements, for protecting sensitive or confidential information made available to the unaffiliated third party reviewer and to protect or exempt sensitive or confidential information developed pursuant to this Reliability Standard from public disclosure.
- M6.** Examples of evidence may include, but are not limited to, written or electronic documentation that the Transmission Owner or Transmission Operator had an unaffiliated third party review the evaluation performed under Requirement R4 and the security plan(s) developed under Requirement R5 as specified in Requirement R6 including, if applicable, documenting the reasons for not modifying the evaluation or security plan(s) in accordance with a recommendation under Part 6.3. Additionally, examples of evidence may include, but are not limited to, written or electronic documentation of procedures to protect information under Part 6.4.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

1.2. Evidence Retention

The following evidence retention periods identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the CEA may ask an entity to provide other evidence during an on-site visit to show that it was compliant for the full time period since the last audit.

The Transmission Owner and Transmission Operator shall keep data or evidence to show compliance, as identified below, unless directed by its Compliance Enforcement Authority (CEA) to retain specific evidence for a longer period of time as part of an investigation.

The responsible entities shall retain documentation as evidence for three years.

If a Responsible Entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved, or for the time specified above, whichever is longer.

The CEA shall keep the last audit records and all requested and submitted subsequent audit records, subject to the confidentiality provisions of Section 1500 of the Rules of Procedure and the provisions of Section 1.4 below.

1.3. Compliance Monitoring and Assessment Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints Text

1.4. Additional Compliance Information

Confidentiality: To protect the confidentiality and sensitive nature of the evidence for demonstrating compliance with this standard, all evidence will be retained at the Transmission Owner’s and Transmission Operator’s facilities.

Appendix H

Jinko 72

310-330 Watt

POLYCRYSTALLINE MODULE

*1500V Available

Positive power tolerance of 0/+3%



KEY FEATURES



High Voltage

1000V standard; 1500V option lowers BOS costs and yields better LCOE



Innovative Solar Cells

Four busbar cell technology improves module efficiency



PID Resistance

Resistance against PID for improved durability



Low-Light Performance

New glass technology improves light absorption and retention



Strength and Durability

Certified for high snow (5400Pa) and wind (2400Pa) loads



Weather Resistance

Certified for salt mist and ammonia resistance

LINEAR PERFORMANCE WARRANTY

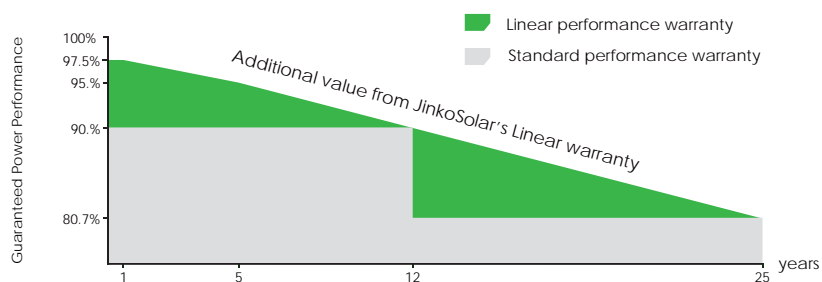
10 Year Product Warranty • 25 Year Linear Power Warranty

- ISO9001:2008 Quality Standards
- ISO14001:2004 Environmental Standards
- OHSAS18001 Occupational Health & Safety Standards

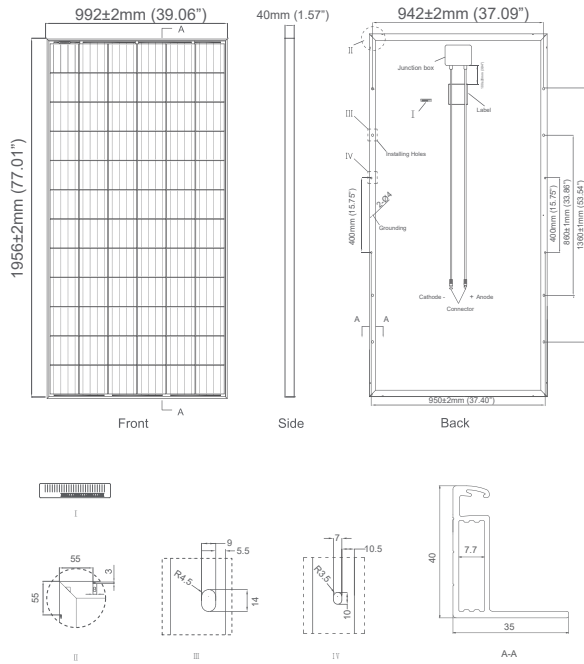
Nomenclature:

JKM320P - 72 -

Code	Certification
null	1000V
V	1500V



Engineering Drawings

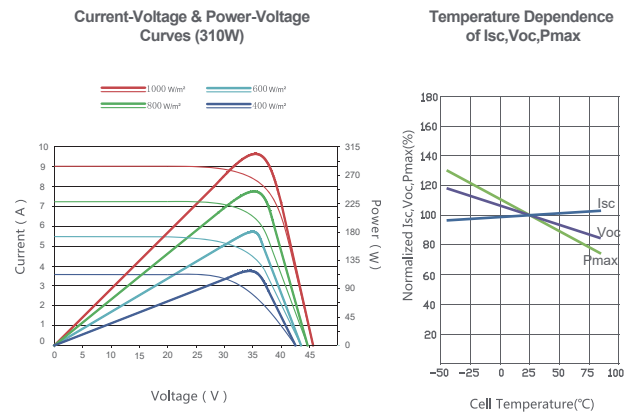


Packaging Configuration

(Two/box =One pallet)

25pcs/ box, 50pcs/pallet, 600pcs/40'HQ Container

Electrical Performance & Temperature Dependence



Mechanical Characteristics

Cell Type	Polycrystalline 156×156mm (6 inch)
No. of cells	72 (6×12)
Dimensions	1956×992×40mm (77.01×39.06×1.57 inch)
Weight	26.5 kg (58.4 lbs.)
Front Glass	4.0mm, High Transmission, Low Iron, AR Coating Tempered Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP67 Rated
Output Cables	12 AWG, Length:1200mm (47.24 inch)
Fire Type	Type 1

SPECIFICATIONS

Module Type	JKM310P-V		JKM315P-V		JKM320P-V		JKM325P-V		JKM330P-V	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	310Wp	230Wp	315Wp	233Wp	320Wp	237Wp	325Wp	241Wp	330Wp	245Wp
Maximum Power Voltage (Vmp)	37.0V	34.4V	37.2V	34.7V	37.4V	34.7V	37.6V	35.0V	37.8V	35.3V
Maximum Power Current (Imp)	8.38A	6.68A	8.48A	6.71A	8.56A	6.83A	8.66A	6.89A	8.74A	6.94A
Open-circuit Voltage (Voc)	45.9V	42.7V	46.2V	42.8V	46.4V	43.0V	46.7V	43.3V	46.9V	43.6V
Short-circuit Current (Isc)	8.96A	7.26A	9.01A	7.28A	9.05A	7.35A	9.1A	7.40A	9.14A	7.45A
Module Efficiency STC (%)	15.98%		16.23%		16.49%		16.75%		17.01%	
Operating Temperature(°C)					-40°C~+85°C					
Maximum system voltage					1500VDC (UL)					
Maximum series fuse rating					15A					
Power tolerance					0~+3%					
Temperature coefficients of Pmax					-0.41%/°C					
Temperature coefficients of Voc					-0.31%/°C					
Temperature coefficients of Isc					0.06%/°C					
Nominal operating cell temperature (NOCT)					45±2°C					

STC: Irradiance 1000W/m² Cell Temperature 25°C AM=1.5

NOCT: Irradiance 800W/m² Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s

* Power measurement tolerance: ± 3%

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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US-MKT-330P-V_v1.0_rev2016

Appendix I

Report Date: 19 July 2016

File Number: 316G2244.001

Client: **JinkoSolar (U.S.) Inc.**
595 Market Street, Suite 2200
San Francisco, CA 94105 USA

Model(s) Identification: JK06D – 60 & 72 Cell Modules with Junction Box

Customer Test Instructions:

Test specification:	Test result:
Toxicity Characteristic Leaching Procedure (TCLP) –	Pass

Checked by:

Tested by:




7/19/2016
Date

Cody Carson
Laboratory Technician
Name Signature

7/19/2016
Date

Mark Smith
Laboratory Manager
Name Signature

Testing Period: July 11, 2016 - July19, 2016

RESULTS

Test Sample: **JK06D – 60 Cells Standard Module JB**
JK06D – 72 Cells Standard Module JB

Toxicity Characteristic Leaching Procedure (TCLP)

METHOD SUMMARY:

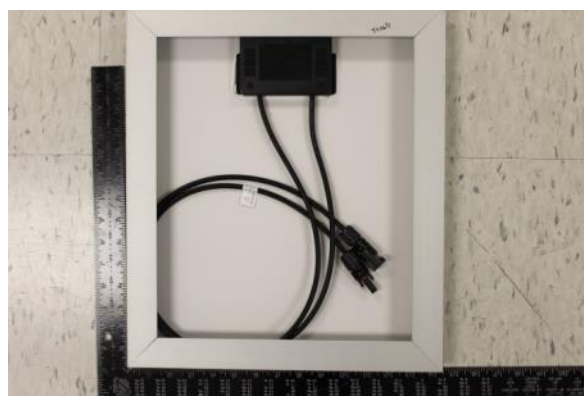
An aliquot of sample is leached with an acetic acid / sodium hydroxide solution at a 1:20 mix of sample to solvent. The leachate mixture is sealed in extraction vessel and tumbled for 18 hours to simulate an extended leaching time in the ground. It is then filtered and the solution is then analyzed for contaminants listed in Table 1.

RESULTS SUMMARY

No analyte concentrations are at a concentration greater than or equal to the respective value in Table 1

TABLE 1 – TCLP – Maximum Concentrations

EPA Waste Number	Contaminant	Regulatory Level (mg/l)
D004	Arsenic	5.000
D005	Barium	100.000
D006	Cadmium	1.000
D007	Chromium	5.000
D008	Lead	5.000
D009	Mercury	0.200
D010	Selenium	1.000
D011	Silver	5.000

Sample Photos:

--END--



Analytical Report

1702 East Central Avenue Suite 10
Bentonville, AR 72712
479-271-7996 phone
479-271-8394 fax

07/18/16 13:29

Client: TUV Rheinland Of North America Inc.
2709 SE Otis Corley Suite 11
Bentonville AR, 72712

Work Order: BG60047
Project Name: TCLP 7-8-16
Project Number: TCLP 7-8-16

Attn: Mark Smith

Date Received: 07/12/16

Environmental Testing Group

Metals by EPA 6000 Series Methods

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date/Time	Analyst	Method	Batch
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BG60047-01 (Solid) Sampled: 07/08/16 12:45

				Client Sample Name: Jinko Solar JK06D 60 Cell Standard TC					
Arsenic	ND		mg/L	0.100	100	07/15/16 09:32	MBM	SW846 6020A	B6G1401
Barium	ND		"	0.100	"	"	MBM	"	"
Cadmium	ND		"	0.100	"	"	MBM	"	"
Chromium	ND		"	0.100	"	"	MBM	"	"
Lead	ND		"	0.100	"	"	MBM	"	"
Mercury	ND		"	0.000500	25	07/15/16 12:20	MBM	"	B6G1501
Selenium	ND		"	0.100	100	07/15/16 09:32	MBM	"	B6G1401
Silver	ND		"	0.100	"	"	MBM	"	"

BG60047-02 (Solid) Sampled: 07/08/16 12:45

				Client Sample Name: Jinko Solar JK06D 72 Cell Standard TC					
Arsenic	ND		mg/L	0.100	100	07/15/16 09:32	MBM	SW846 6020A	B6G1401
Barium	ND		"	0.100	"	"	MBM	"	"
Cadmium	ND		"	0.100	"	"	MBM	"	"
Chromium	ND		"	0.100	"	"	MBM	"	"
Lead	ND		"	0.100	"	"	MBM	"	"
Mercury	ND		"	0.000500	25	07/15/16 12:20	MBM	"	B6G1501
Selenium	ND		"	0.100	100	07/15/16 09:32	MBM	"	B6G1401
Silver	ND		"	0.100	"	"	MBM	"	"

BG60047-03 (Solid) Sampled: 07/08/16 12:45

				Client Sample Name: Jinko Solar JK07B 60 Cell MX JB TCLP					
Arsenic	ND		mg/L	0.100	100	07/15/16 09:32	MBM	SW846 6020A	B6G1401
Barium	ND		"	0.100	"	"	MBM	"	"
Cadmium	ND		"	0.100	"	"	MBM	"	"
Chromium	ND		"	0.100	"	"	MBM	"	"
Lead	ND		"	0.100	"	"	MBM	"	"
Mercury	ND		"	0.000500	25	07/15/16 12:20	MBM	"	B6G1501
Selenium	ND		"	0.100	100	07/15/16 09:32	MBM	"	B6G1401
Silver	ND		"	0.100	"	"	MBM	"	"



Analytical Report

1702 East Central Avenue Suite 10
Bentonville, AR 72712
479-271-7996 phone
479-271-8394 fax

07/18/16 13:29

Client: TUV Rheinland Of North America Inc.
2709 SE Otis Corley Suite 11
Bentonville AR, 72712

Work Order: BG60047
Project Name: TCLP 7-8-16
Project Number: TCLP 7-8-16

Attn: Mark Smith

Date Received: 07/12/16

Environmental Testing Group

Metals by EPA 6000 Series Methods

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date/Time	Analyst	Method	Batch
BG60047-04 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK07B 72 Cell MX JB TCLP				
Arsenic	ND		mg/L	0.100	100	07/15/16 09:32	MBM	SW846 6020A	B6G1401
Barium	ND		"	0.100	"	"	MBM	"	"
Cadmium	ND		"	0.100	"	"	MBM	"	"
Chromium	ND		"	0.100	"	"	MBM	"	"
Lead	ND		"	0.100	"	"	MBM	"	"
Mercury	ND		"	0.000500	25	07/15/16 12:20	MBM	"	B6G1501
Selenium	ND		"	0.100	100	07/15/16 09:32	MBM	"	B6G1401
Silver	ND		"	0.100	"	"	MBM	"	"

TCLP Extraction by EPA 1311

Analyte	Result	Q	Units	PQL	Dil Factor	Analyzed Date/Time	Analyst	Method	Batch
BG60047-01 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK06D 60 Cell Standard TC				
TCLP Filterable Solids	100		% by Weight	0.00100	1	07/15/16 09:32	MBM	EPA 1311	B6G1401
BG60047-02 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK06D 72 Cell Standard TC				
TCLP Filterable Solids	100		% by Weight	0.00100	1	07/15/16 09:32	MBM	EPA 1311	B6G1401
BG60047-03 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK07B 60 Cell MX JB TCLP				
TCLP Filterable Solids	100		% by Weight	0.00100	1	07/15/16 09:32	MBM	EPA 1311	B6G1401
BG60047-04 (Solid) Sampled: 07/08/16 12:45					Client Sample Name: Jinko Solar JK07B 72 Cell MX JB TCLP				
TCLP Filterable Solids	100		% by Weight	0.00100	1	07/15/16 09:32	MBM	EPA 1311	B6G1401



Analytical Report

1702 East Central Avenue Suite 10
Bentonville, AR 72712
479-271-7996 phone
479-271-8394 fax

07/18/16 13:29

Client: TUV Rheinland Of North America Inc.
2709 SE Otis Corley Suite 11
Bentonville AR, 72712

Work Order: BG60047
Project Name: TCLP 7-8-16
Project Number: TCLP 7-8-16

Attn: Mark Smith

Date Received: 07/12/16

Metals by EPA 6000 Series Methods - Quality Control

Environmental Testing Group

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B6G1401 - EPA 200.8 v 5.4

Blank (B6G1401-BLK1)

Prepared: 07/14/16 Analyzed: 07/15/16

Cadmium	ND	0.00100	mg/L
Silver	ND	0.00100	"
Arsenic	ND	0.100	"
Selenium	ND	0.00100	"
Chromium	ND	0.00100	"
Barium	ND	0.00100	"
Lead	ND	0.00100	"

LCS (B6G1401-BS1)

Prepared: 07/14/16 Analyzed: 07/15/16

Silver	0.1994	0.0100	mg/L	0.200	99.7	90-110
Arsenic	0.204	1.00	"	0.200	102	90-110
Cadmium	0.208	0.0100	"	0.200	104	90-110
Chromium	0.206	0.0100	"	0.200	103	80-120
Selenium	0.197	0.0100	"	0.200	98.3	80-120
Barium	0.206	0.0100	"	0.200	103	90-110
Lead	0.207	0.0100	"	0.200	103	90-110

Matrix Spike (B6G1401-MS1)

Source: BG60047-01

Prepared: 07/14/16 Analyzed: 07/15/16

Selenium	0.198	0.100	mg/L	0.200	ND	99.0	75-125
Chromium	0.199	0.100	"	0.200	ND	99.5	75-125
Arsenic	0.211	10.0	"	0.200	ND	106	75-125
Silver	0.1900	0.100	"	0.200	ND	95.0	75-125
Cadmium	0.204	0.100	"	0.200	ND	102	75-125
Barium	0.267	0.100	"	0.200	ND	104	75-125
Lead	0.208	0.100	"	0.200	ND	92.5	75-125

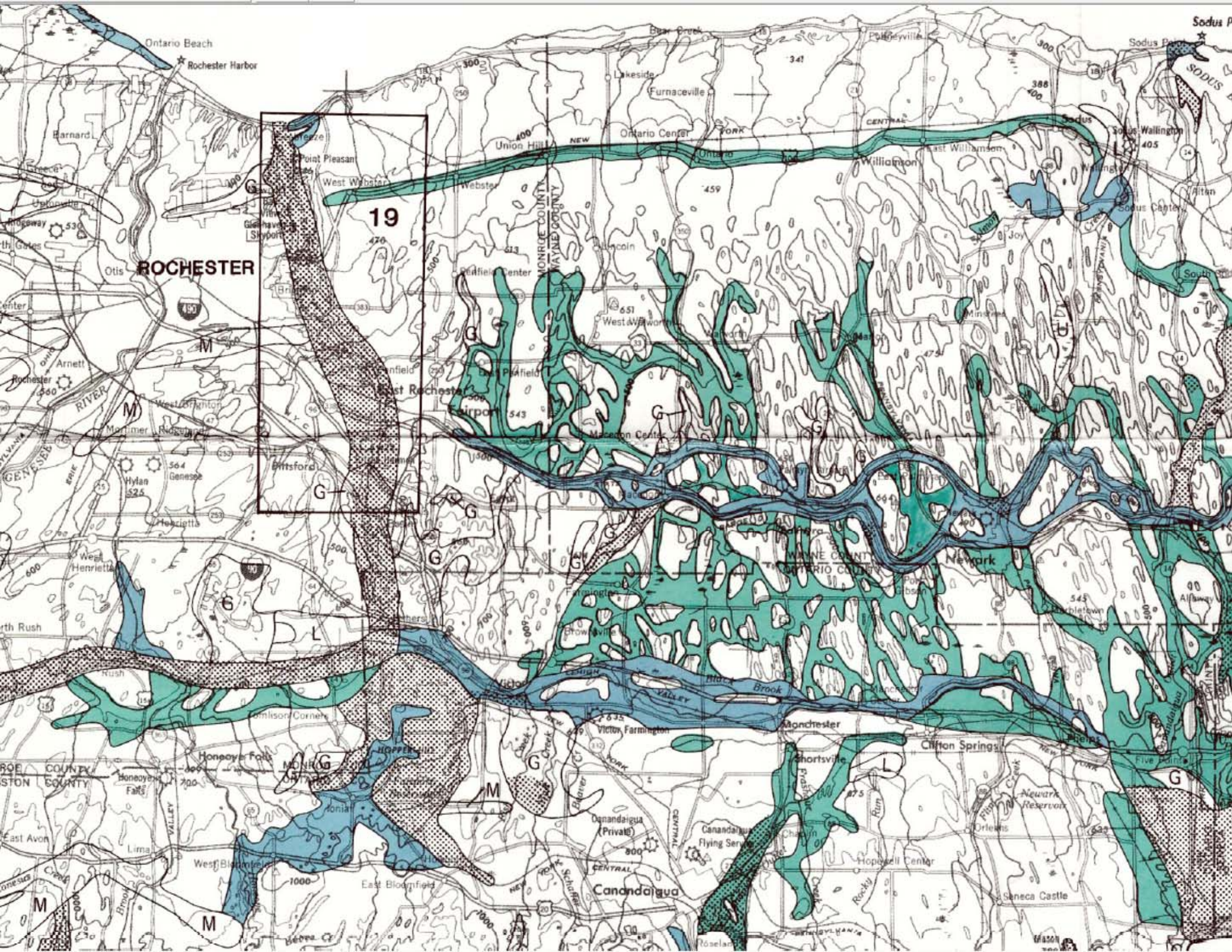
Matrix Spike Dup (B6G1401-MSD1)

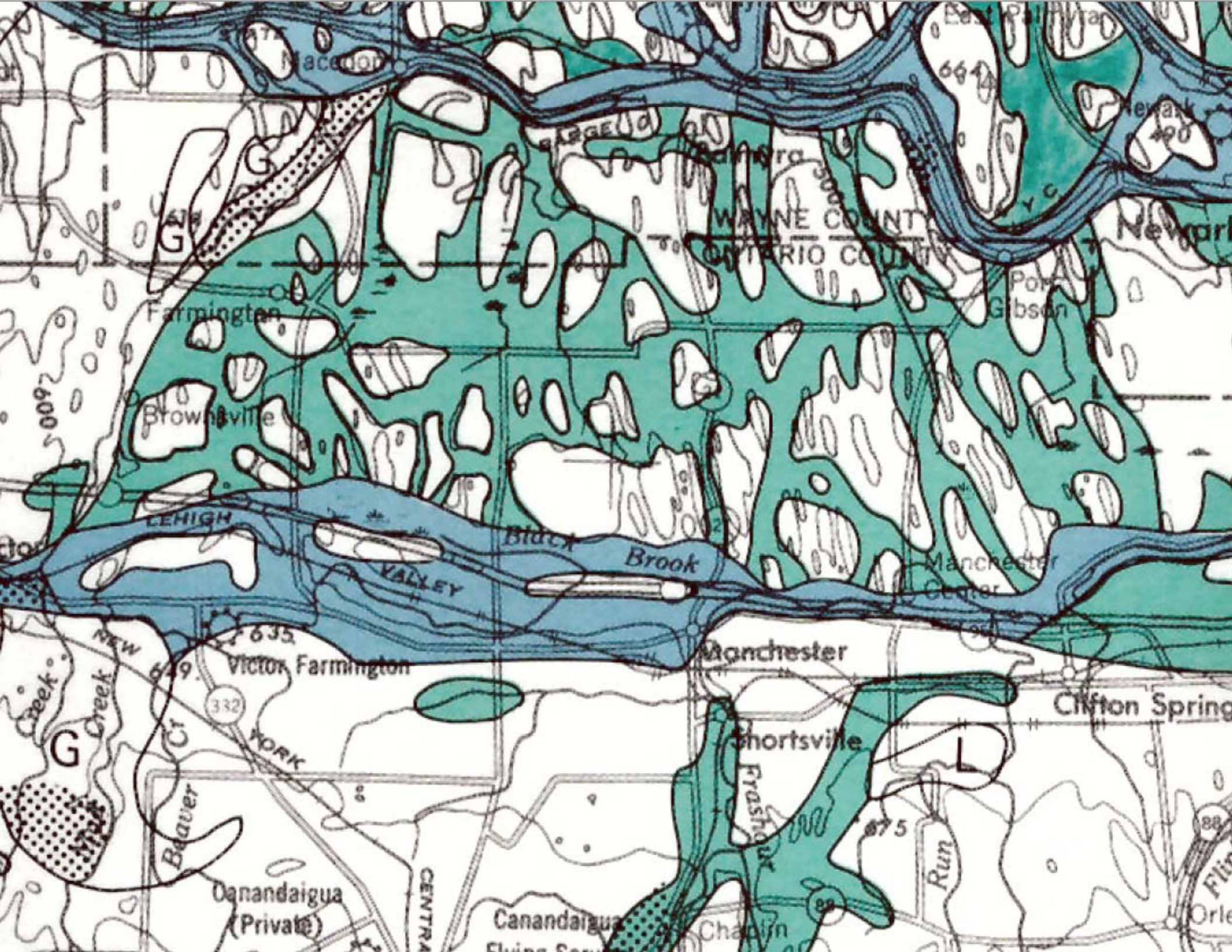
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Chromium	0.206	0.100	mg/L	0.200	ND	103	75-125	3.46	20
Selenium	0.199	0.100	"	0.200	ND	99.5	75-125	0.504	20
Silver	0.1850	0.100	"	0.200	ND	92.5	75-125	2.67	20
Cadmium	0.205	0.100	"	0.200	ND	102	75-125	0.489	20
Arsenic	0.210	10.0	"	0.200	ND	105	75-125	0.475	20
Barium	0.263	0.100	"	0.200	ND	102	75-125	1.51	20
Lead	0.209	0.100	"	0.200	ND	93.0	75-125	0.480	20

Appendix J





INTRODUCTION

ed to develop ground-water protection and effort by the State to identify and delineate unconsolidated aquifers—those yield large supplies of water to wells. In some areas, are not addressed here. Ground-water resources of many New York were prepared by the U.S. Geological State Department of Environmental 1960's revealed that the available maps and amount of detail. Other statewide scale (Heath, 1965) and at 1:750,000 had insufficient detail for development

urvey, in cooperation with the New York Conservation, began a study to compile and the location and potential well yield of the New York and to indicate the parts of by community water systems (New York Conservation, 1985) and that have been "Aquifers" by the State.

Object and Scope

that together represent all of New York's needs of water managers and policy validated aquifers at a uniform scale of current information available, and use the unconsolidated aquifers and potential well yields.

ned on the map showing unconsolidated the corresponding references. The inset the primary aquifers (which were mapped in 1980's in cooperation with New York State at 1:24,000 scale), and other areas that is data compilation; they are keyed by sources.

ted for this map series because it is the Geological Survey for its bedrock geology surficial geology maps of the State (1986). Together these maps form a con-water maps for use in regional management the State.

view of the extent of the unconsolidated ded for detailed site evaluations. Addi- use in site evaluation are given in the precise location of aquifer boundaries or re site-specific information. Ground water an those indicated on these sheets, such as o be shown at this scale, from till, from yet identified, and from underlying eld for domestic use (less than 5 gallons these geologic settings. Some areas con- warrant consideration in the appraisal of basin reports cited in the references fers.

Acknowledgments

Survey provided a preliminary copy of the this sheet, which was used to delineate

WELL YIELDS

Since the mid-1940's, the U.S. Geological Survey, in cooperation with many State and local-government agencies, has mapped and appraised aquifer systems in New York. The locations of the unconsolidated aquifers and range of potential well yields shown on this sheet were compiled from information from 20 reports and the well-yield data from the U.S. Geological Survey's computer files. Aquifer boundaries were derived from hydrogeologic and surficial-geology maps, well records, and interpretation of topographic maps.

Well yields represent the potential range of yields from properly constructed individual wells screened and developed in the aquifer. Yields may not represent sustained withdrawals from the deposit but, rather, the potential short-term withdrawal. Yields in many areas are based on aquifer and well-capacity-test data and on yields reported by drillers and homeowners. Yields in some areas are estimates based on geologic logs, saturated thickness, and hydraulic conductivity. Actual yields may differ slightly from those indicated.

The dark- and light-blue shading represents unconsolidated water-table aquifers from which high well yields can be obtained. These aquifers are recharged rapidly by water percolating through the permeable surficial sediment to the zone of saturation. The stippled pattern indicates the location of confined, unconsolidated aquifers. These aquifers are beneath an impermeable, confining layer of silt and clay or till that minimizes recharge from land surface. Colored and stippled patterns represent areas where a confining bed separates a water-table aquifer from a confined aquifer. Uncolored areas with letter designations represent known sand and gravel deposits (Muller and Cadwell, 1986) that have insufficient data to provide estimates of yield. The letters designate the type of material, as indicated in the explanation. Uncolored areas without letter designations are underlain by till, lake clay, silt and silty sand, or bedrock, and may contain small sand and gravel aquifers that are too small to plot at this scale. Dug wells in till or drilled wells in most bedrock units are generally capable of yielding 1 to 5 gallons per minute to wells. Larger yields are available from some types of bedrock units such as limestone, dolomite, and sandstone.

REFERENCES CITED

- Fischer, D. W., Isachsen, Y. W., and Rickard, L. V., 1971, Geologic map of New York: New York State Museum and Science Service Map and Chart Series no. 15, 6 sheets, scale 1:250,000.
- Heath, R. C., 1964, Ground water in New York: New York State Water Resources Commission Bulletin GW-51, 1 sheet, scale 1:1,000,000.
- Kantrowitz, I. H., and Snively, D. S., 1982, Availability of ground water from aquifers in upstate New York: U.S. Geological Survey Open-File Report 82-437, 2 sheets, scale 1:750,000.
- Muller, E. H., and Cadwell, D. H., 1986, Quaternary geology of New York, Finger Lakes sheet: New York State Museum and Science Service Map and Chart Series no. 40, scale 1:250,000.
- New York State Department of Environmental Conservation, 1985, Draft--Upstate New York groundwater management program: New York State Department of Environmental Conservation, 237 p.

MAP REFERENCES

(Number at left corresponds to numbers on map above and inset on right.)

1. Anderson, H. R., and others, 1982, Geohydrology of the glaciolacustrine aquifer in the Fulton area, Oswego County, New York: U.S. Geological Survey Open-File Report 82-83, 7 sheets, scale 1:24,000.
2. Crain, L. J., 1974, Ground-water resources of the western Oswego River basin, New York: New York State Department of Environmental Conservation Basin Planning Report ORB-5, 137 p.
3. Gilbert, B. K., and Kannerer, J. C., 1969, Analysis and interpretation of water-resources data of the Genesee River basin: Genesee River Basin Planning Board Report, 363 p. (Unpublished draft on file at U.S. Geological Survey, Ithaca, N.Y.)
4. Holecek, T. J., Randall, A. D., Belli, J. L., and Allen, R. V., 1982, Geohydrology of the valley-fill aquifer in the Endicott-Johnson City area, Broome County, New York: U.S. Geological Survey Open-File Report 82-268, 3 sheets, scale 1:24,000.
5. Hollyday, E. F., 1969, An appraisal of the ground-water resources of the Susquehanna River basin in New York State: U.S. Geological Survey Open-File Report 69-128, 52 p.
6. Kammerer, J. C., and Hobbs, W. A., Jr., 1967, The geology and availability of ground water in the Genesee River basin, New York and Pennsylvania: U.S. Army Corps of Engineers, Genesee River Basin Comprehensive Study, v. V, Appendix I (Ground water resources), 102 p.
7. Kantrowitz, I. H., 1970, Ground-water resources in the eastern Oswego River basin, New York: New York State Water Resources Commission Basin Planning Report ORB-2, 129 p.
8. Kantrowitz, I. H., and Snively, D. S., 1982, Availability of water from aquifers in upstate New York: U.S. Geological Survey Open-File Report 82-437, 2 sheets, scale 1:500,000.
9. Kantrowitz, I. H., 1965, Ground-water resources of the Syracuse area, in New York State Geological Association Guidebook: 36th annual meeting, Syracuse University, 1965, p. 35-38.
10. MacNish, R. D., and Randall, A. D., 1982, Stratified-drift aquifers in the Susquehanna River basin, New York: New York State Department of Environmental Conservation Bulletin 75, 68 p.
11. Miller, T. S., Belli, J. L., and Allen, R. V., 1982, Geohydrology of the valley-fill aquifer in the Corning area, Steuben County, New York: U.S. Geological Survey Open-File Report 82-85, 6 sheets, scale 1:24,000.
12. Miller, T. S., Brooks, T. D., Stolz, W. G., and others, 1981, Geohydrology of the valley-fill aquifer in the Cortland-Homer-Preble area, Cortland and Onondaga Counties, New York: U.S. Geological Survey Open-File Report 81-1022, 7 sheets, scale 1:24,000.
13. Miller, T. S., Randall, A. D., Belli, J. L., and Allen, R. V., 1982, Geohydrology of the valley-fill aquifer in the Elmira area, Chemung County, New York: U.S. Geological Survey Open-File Report 82-110, 7 sheets, scale 1:24,000.
14. Muller, E. H., and Cadwell, D. H., 1986, Surficial geologic map of New York, Finger Lakes sheet: New York State Museum Map and Chart Series 40b, 1 sheet, scale 1:250,000.





UNCONSOLIDATED AQUIFERS IN UPSTATE NEW YORK--FINGER L

By
Todd S. Miller






15. Pagano, T. S., Terry, D. B., Shaw, M. L., and Ingram, A. W., 1985, Geohydrology of the valley-fill aquifer in the Bath area, Lower Cohocton River, Steuben County, New York: U.S. Geological Survey Water-Resources Investigations Report 85-4095, 7 sheets, scale 1:24,000.
16. Pagano, T. S., Terry, D. B., and Ingram, A. W., 1985, Geohydrology of the glacial-outwash aquifer in the Baldwinsville area, Seneca River, Onondaga County, New York: U.S. Geological Survey Water-Resources Investigations Report 85-4094, 7 sheets, scale 1:24,000.
17. Randall, A. D., 1972, Records of wells and test borings in the Susquehanna River basin, New York: New York State Department of Environmental Conservation Bulletin 69, 92 p.
18. Terry, D. B., Pagano, T. S., Shaw, M. L., and Ingram, A. W., 1985, Geohydrology of the valley-fill aquifer in the Cohocton area, upper Cohocton River, Steuben County, New York: U.S. Geological Survey Water-Resources Investigations Report 85-4040, 7 sheets, scale 1:24,000.
19. Waller, R. M., Holecsek, T. J., Stelz, W. G., Belli, J. L., and Mahon, K. I., 1982, Geohydrology of the preglacial Genesee valley, Monroe County, New York: U.S. Geological Survey Open-File Report 82-552, 5 sheets, scale 1:24,000.
20. Yager, R. M., Zarriello, P. J., and Kappel, W. M., 1985, Geohydrology of the Irondequoit Creek basin near Rochester, New York: U.S. Geological Survey Water-Resources Investigations Report 84-4259, 6 sheets.
21. Owego area. A primary aquifer with no published report.
22. Waverly area. A primary aquifer with no published report.

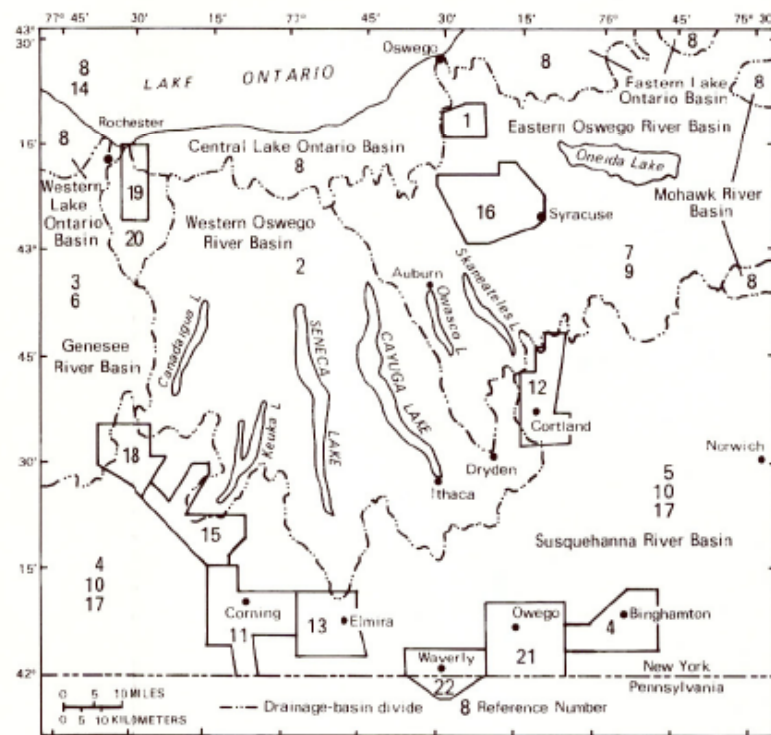
EXPLANATION

POTENTIAL YIELD OF WATER FROM WELLS THAT TAP UNGONSOLIDATED AQUIFERS

-  UNCONFINED AQUIFER, 10 TO 100 GALLONS PER MINUTE--Sand and gravel with saturated zone generally less than 10 ft thick or thicker but with less permeable silty sand and gravel. Yields in areas adjacent to streams may exceed 100 gal/min through pumping-induced infiltration, but these areas are too small to show at this scale.
-  UNCONFINED AQUIFER, MORE THAN 100 GALLONS PER MINUTE--Sand and gravel of high transmissivity and with saturated thickness greater than 10 ft. Many such areas are associated with surface-water source that can provide pumping-induced recharge.
-  CONFINED AQUIFER, 5 TO MORE THAN 500 GALLONS PER MINUTE--Area where a relatively impermeable till, very fine sand, silt, or clay layer separates the buried sand and gravel aquifer from an overlying surficial aquifer.
-  CONFINED AQUIFER, 5 TO MORE THAN 500 GALLONS PER MINUTE--Sand and gravel overlain by till, very fine sand, silt, or clay but without a surficial aquifer.

AQUIFERS OF UNKNOWN POTENTIAL--Areas of sand or sand and gravel for which little or no well data are on file to determine yield potential. Letter symbols, explained below, indicate the type of deposit.

-  **L** Lacustrine or eolian deposit--Fine to medium sand that probably yields less than 10 gal/min.
-  **G** Kame, kame terrace, outwash, or alluvium.--Sand and gravel of unknown thickness or saturation. Yield potential is greater where streams are present.
-  **M** Moraine.--Mostly till and lacustrine deposits (fine sand, silt, and clay) capped in some places with unsaturated sand and gravel. Thin, scattered confined aquifers of sand and gravel in some places.
-  **U** Confined aquifer.--Areas of lake deposits or till possibly underlain by sand and gravel aquifers. Depth and saturated thickness of aquifer not investigated.
-  **1** PRIMARY WATER-SUPPLY AQUIFER--A highly productive aquifer that is being used as a source of water supply by major public-supply systems. Number indicates name of aquifer area (see key below) and report number in list of references. Reports and maps cited in the list of references describe these aquifers in detail.



Base from U.S. Army Map Service, 1:250,000

Drainage areas and reference numbers

Reference number	Aquifer area	Reference number	Aquifer area
16	Baldwinsville	4	Endicott-Johnson City
15	Bath	1	Fulton
18	Cohocton	19	Irondegenesee
11	Corning	21	Owego
12	Cortland-Homer-Preble	22	Waverly
13	Elmira-Horseheads-Big Flats		

Appendix K



June 29, 2018

Town of Farmington
Planning Board
1000 County Road 8
Farmington, NY 14425

Re: Proposed Solar Projects Yellow Mills Road ("Solar Project") – Decommissioning

Dear Members of the Planning Board,

Please find enclosed the following regarding the proposed decommissioning for the Solar Project. Please note, the information provided herein relates to a 2MW ac solar facility as the decommissioning agreements executed by Delaware River Solar, LLC ("**DRS**") in other towns are shown as a comparison and such projects were primarily 2 MW projects. As the proposed project progresses through the town approval process, the information will be updated and provided to the town.

APPENDIX I: Draft Decommissioning Plan

APPENDIX II: Draft Decommissioning Agreement

APPENDIX III: List of Decommissioning Agreements DRS has executed with other Towns in New York State.

If there are any questions or additional information required, I can be contacted at 646-998-6495 or at peter.dolgos@delawareriversolar.com.

Sincerely,

A handwritten signature in blue ink that reads "Peter Dolgos".

Peter Dolgos
Senior Vice President
Delaware River Solar, LLC

APPENDIX I

Draft Decommissioning Plan

New York Community Solar Facility Decommissioning Plan

JUNE 2018

Prepared For:

Town of Farmington

Delaware River Solar, LLC
33 Irving Place, Suite 1090
New York, NY 10003

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1. **Introduction**

Delaware River Solar (“**DRS**”) proposes to build a photovoltaic (PV) solar facility (“**Solar Facility**”) at 466 Yellow Mills Road in the Town of Farmington (“**Town**”) under New York State’s Community Solar initiative. The Solar Facility is planned to have a nameplate capacity of approximately 7.0 megawatts (MW) alternating current (AC) and be built on private land (“**Project Site**”) leased by an affiliate of DRS from the property owner (“**Property Owner**”).

This Decommissioning Plan (“**Plan**”) provides an overview of activities that will occur during the decommissioning phase of the Solar Facility, including; activities related to the restoration of land, the management of materials and waste, projected costs, and a proposed decommissioning fund agreement overview.

The Solar Facility will have a useful life of thirty (30) years and the lease agreement between DRS and the Property Owner will have a thirty (30) year lease term, subject to five (5) year extensions. This Plan assumes that the Solar Facility will be dismantled, and the Project Site restored to a state similar to its pre-construction condition, at the thirty (30) year anniversary of the Solar Facility’s commercial operation date (“**Expected Decommissioning Date**”). This Plan also covers the case of the abandonment of the Solar Facility, for any reason, prior to the Expected Decommissioning Date.

Decommissioning of the Solar Facility will include the disconnection of the Solar Facility from the electrical grid and the removal of all Solar Facility components, including:

- Photovoltaic (PV) modules, panel racking and supports;
- Inverter units, substation, transformers, and other electrical equipment;
- Access roads, wiring cables, communication tower, perimeter fence; and,
- Concrete foundations.

This Plan is based on current best management practices and procedures. This Plan may be subject to revision based on new standards and emergent best management practices at the time of decommissioning. Permits will be obtained as required and notification will be given to stakeholders prior to decommissioning.

2. Conditions to the Issuance of A Special Use Permit

The conditions of the decommissioning plan for the issuance of a Special Use Permit granted by the Town of Farmington Planning Board shall include:

1. A licensed engineer's estimate of the anticipated operational life of the Solar Facility
 - DRS will provide this.
2. Identification of the party responsible for the decommissioning.
 - DRS will create project specific entities (i.e. NY Farmington I, LLC, NY Farmington II, LLC and NY Farmington III, LLC) for each of the individual projects. The project specific entities, affiliates of DRS, will be the entity responsible for decommissioning, and will enter decommissioning agreements with the Town.
3. A description of any decommissioning agreement between the responsible party and the landowner.
 - Attached as Appendix II is a draft decommissioning agreement that DRS would typically execute with the applicable town. The lease agreement that DRS has in place with the Property Owner also contains conditions regarding the removal of the Solar Facility and restoration of the Project Site.
4. A schedule showing the time frame for the decommissioning and restoration work to occur.
 - The decommissioning and restoration work will be completed within 180 days of the 30 year anniversary of the commercial operation date (or within 180 days of abandonment). The "Decommissioning of the Solar Facility" section herein contains details on work to be performed.
5. A cost estimate prepared by a licensed engineer estimating the full cost of the decommissioning and removal of the Solar Facility
 - The "Cost of Decommissioning" section herein contains the estimate costs of the decommissioning the Solar Facility. Prior to any Site Plan Approval or issuance of any Special Use Permit, DRS will provide a "final" estimate of the decommissioning cost from a licensed engineer based on the site plan considered for approval.
6. A financial plan to ensure that financial resources will be available to fully decommission the Solar Facility.
 - The financial plan is set forth herein and is similar to decommissioning agreements that DRS has executed with other towns in the State of New York. See Appendix III for a list of other towns for which a substantially similar decommissioning plan has been executed.
7. An acceptable form of surety to be approved by the Planning Board, accepted by the Town Board and filed with the Town Clerk in an amount specified in the financial plan.
 - DRS is proposing the financial plan set forth herein which entails an upfront deposit to the town and annual contributions thereafter. As indicated above, this is similar to decommissioning agreements DRS has executed with other towns, however, DRS is open to discuss other recommendations of the Town.

8. Before obtaining a Building Permit and every 3 years thereafter the Solar Facility owner is required to file with the Town Clerk evidence of financial surety to provide for the full cost of decommissioning and removal of the Solar Facility.
 - As indicated above, DRS is proposing the financial plan set forth herein. If this financial plan is acceptable, the Town would be the controlling party of the “decommissioning account” and DRS can attest to the schedule set forth herein for payments.
9. The amount of surety is determined by the Town Engineer based upon a current estimate of the decommissioning and removal costs as provided by the Solar Facility owner in the Decommissioning Plan.
 - As indicated above, DRS is proposing the financial plan set forth herein. It is assumed that in the event the estimate of the decommissioning and removal costs increases, based on the annual report described in the following item, DRS will contribute an additional deposit to the decommissioning account to ensure that such additional amount, plus the annual deposits, will be sufficient to cover the revised decommissioning cost.
10. The Solar Facility owner is required to provide, on a yearly basis, to the Code Enforcement Officer a written report showing the rate capacity of the Solar Facility and the amount of electricity that was generated by the Solar Facility and transmitted to the grid in the most recent 12 month period. Every third year the annual report shall also include a recalculation of the estimated cost of decommissioning and removal of the system. The Town Board may then require the amount of surety to be changed to reflect any changes in the decommissioning costs.
 - DRS will provide the required reports.

3. The Proponent

Delaware River Solar LLC (“**DRS**”) will manage and coordinate the approvals process during decommissioning. DRS will obtain all necessary regulatory approvals that vary depending on the jurisdiction, project capacity, and site location. DRS will build a long-term relationship with the community hosting the Solar Facility and DRS will be committed to the safety, health, and welfare of the townships.

Contact information for the proponent is as follows:

Full Name of Company: Delaware River Solar, LLC

Contact: Peter Dolgos

Address: 33 Irving Place Suite 1090, New York, NY 10003

Telephone: (646) 998-6495

Email: peter.dolgos@delawareriversolar.com

3.1 Project Information

Address: 466 Yellow Mills Road, Farmington NY 14522

Tax ID: 10.00-1.37.110

Project Size (estimated): Three Projects totaling approximately 7.0 MW ac

Landowner: Roger Smith and Carol Smith

Own / Lease: Lease

4. Decommissioning of the Solar Facility

At the time of decommissioning, the installed components will be removed, reused, disposed of, and recycled, where possible. The Project Site will be restored to a state similar to its pre- construction condition. All removal of equipment will be done in accordance with any applicable regulations and manufacturer recommendations. All applicable permits will be acquired.

4.1 Equipment Dismantling and Removal

Generally, the decommissioning of a Solar Facility proceeds in the reverse order of the installation.

1. The Solar Facility shall be disconnected from the utility power grid.
2. PV modules shall be disconnected, collected, and disposed at an approved solar module recycler or reused / resold on the market..
3. All aboveground and underground electrical interconnection and distribution cables shall be removed and disposed off-site by an approved facility.
4. Galvanized steel PV module support and racking system support posts shall be removed and disposed off-site by an approved facility.
5. Electrical and electronic devices, including transformers and inverters shall be removed and disposed off-site by an approved facility.
6. Concrete foundations shall be removed and disposed off-site by an approved facility.
7. Fencing shall be removed and will be disposed off-site by an approved facility.

4.2 Environmental Effects

Decommissioning activities, particularly the removal of project components could result in environmental effects similar to those of the construction phase. For example, there is the potential for disturbance (erosion/sedimentation) to adjacent watercourses or significant natural features. Mitigation measures similar to those employed during the construction phase of the Solar Facility will be implemented. These will remain in place until the site is stabilized in order to mitigate erosion and silt/sediment runoff and any impacts on the significant natural features or water bodies located adjacent to the Project Site.

Road traffic will temporarily increase due to the movement of decommissioning crews and equipment. There may be an increase in particulate matter (dust) in adjacent areas during the decommissioning phase. Decommissioning activities may lead to temporary elevated noise levels from machinery and an increase in trips to the Project Site. Work will be undertaken during daylight hours and conform to any applicable restrictions.

4.3 Site Restoration

Through the decommissioning phase, the Project Site will be restored to a state similar to its pre-construction condition.

All project components (discussed in **Table 1**) will be removed. Rehabilitated lands may be seeded with a low-growing species such as clover to help stabilize soil conditions, enhance soil structure, and increase soil fertility.

4.4 Managing Materials and Waste

During the decommissioning phase a variety of excess materials and wastes (listed in **Table 1**) will be generated. Most of the materials used in a Solar Facility are reusable or recyclable and some equipment may have manufacturer take-back and recycling requirements. Any remaining materials will be removed and disposed of off-site at an appropriate facility. DRS will establish policies and procedures to maximize recycling and reuse and will work with manufacturers, local subcontractors, and waste firms to segregate material to be disposed of, recycled, or reused.

DRS will be responsible for the logistics of collecting and recycling the PV modules and to minimize the potential for modules to be discarded in the municipal waste stream. Currently, some manufacturers and new companies are looking for ways to recycle and/or reuse solar modules when they have reached the end of their lifespan. Due to a recent increase in the use of solar energy technology, a large number of panels from a variety of projects will be nearing the end of their lifespan in 25-30 years. It is anticipated there will be more recycling options available for solar modules at that time. DRS will dispose of the solar modules using best management practices at the time of decommissioning.

Table 1: Management of Excess Materials and Waste

Material / Waste	Means of Managing Excess Materials and Waste
PV panels	If there is no possibility for reuse, the panels will either be returned to the manufacturer for appropriate disposal or will be transported to a recycling facility where the glass, metal and semiconductor materials will be separated and recycled.
Metal array mounting racks and steel supports	These materials will be disposed off-site at an approved facility.
Transformers and substation components	The small amount of oil from the transformers will be removed on-site to reduce the potential for spills and will be transported to an approved facility for disposal. The substation transformer and step-up transformers in the inverter units will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed off-site in accordance with current standards and best practices.
Inverters, fans, fixtures	The metal components of the inverters, fans and fixtures will be disposed of or recycled, where possible. Remaining components will be Disposed of in accordance with the standards of the day.
Gravel (or other granular)	It is possible that the municipality may accept uncontaminated material without processing for use on local roads, however, for the purpose of this report it is assumed that the material will be removed from the project location by truck to a location where The aggregate can be processed for salvage. It will then be reused As fill for construction. It is not expected that any such material will be contaminated.
Geotextile fabric	It is assumed that during excavation of the aggregate, a large portion of the geotextile will be “picked up” and sorted out of The aggregate at the aggregate reprocessing site. Geotextile fabric that is remaining or large pieces that can be readily removed from the excavated aggregate will be disposed of off-site at an approved disposal facility.
Concrete inverter/transformer Foundations	Concrete foundations will be broken down and transported by certified and licensed contractor to a recycling or approved disposal facility.
Cables and wiring	The electrical line that connects the substation to the point of common coupling will be disconnected and disposed of at an approved facility. Support poles, if made of untreated wood, will be chipped for reuse. Associated electronic equipment (isolation switches, fuses, metering) will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed off-site in accordance with current standards and best practices.
Fencing	Fencing will be removed and recycled at a metal recycling facility.
Debris	Any remaining debris on the site will be separated into recyclables/residual wastes and will be transported from the site and managed as appropriate.

4.5 Decommissioning During Construction or Abandonment Before Maturity

In case of abandonment of the Solar Facility during construction or before its 30 year maturity, the same decommissioning procedures as for decommissioning after ceasing operation will be undertaken and the same decommissioning and restoration program will be honored, in as far as construction proceeded before abandonment. The Solar Facility will be dismantled, materials removed and disposed, the soil that was removed will be graded and the site restored to a state similar to its preconstruction condition.

4.6 Decommissioning Notification

Decommissioning activities may require the notification of stakeholders given the nature of the works at the Facility Site. The local municipality in particular will be notified prior to commencement of any decommissioning activities. Six months prior to decommissioning, DRS will update their list of stakeholders and notify appropriate municipalities of decommissioning activities. Federal, county, and local authorities will be notified as needed to discuss the potential approvals required to engage in decommissioning activities.

4.7 Approvals

Well-planned and well-managed renewable energy facilities are not expected to pose environmental risks at the time of decommissioning. Decommissioning of a Solar Facility will follow standards of the day. DRS will ensure that any required permits are obtained prior to decommissioning.

This Decommissioning Report will be updated as necessary in the future to ensure that changes in technology and site restoration methods are taken into consideration.

5. Cost of Decommissioning

The costs below are the current estimated costs to decommission a 2 MWac Solar Facility, based on guidance from NYSERDA and estimates from the Massachusetts solar market, a mature solar market with experience decommissioning projects. The salvage values of valuable recyclable materials (aluminum, steel, copper, etc) are not factored into the below costs. The scrap value will be determined on current market rates at the time of salvage.

Tasks Estimated Cost (\$)	
Remove Panels	\$2,450
Remove Rack Wiring	\$2,459
Dismantle Racks	\$12,350
Remove and Load Electrical Equipment	\$1,850
Break up Concrete Pads	\$1,500
Remove Racks	\$7,800
Remove Cable	\$6,500
Remove Ground Screws and Power Poles	\$13,850
Remove Fence	\$4,950
Grading	\$4,000
Seed Disturbed Areas	\$250
Truck to Recycling Center	\$2,250
Current Total	\$60,200
Total After 30 Years (2.5% inflation rate)	\$126,000

NY PVTN Decommissioning Fact Sheet.pdf

6. Decommissioning Fund

DRS will create a decommissioning fund to guarantee that monies are available to perform the facility decommissioning. Although DRS intends to perform the decommissioning, unforeseen circumstances such as DRS selling the project to another party or DRS going out of business are possible. The funds will be held in a 3rd party escrow account, and they will remain available to any party performing the decommissioning such as a municipality or a landowner.

At the completion of construction, DRS will deposit \$60,000 into the fund (prorated for the actual facility size). After every year of operation, DRS will deposit an additional 2.5% of the previous balance to keep up with inflation and expected decommissioning costs.

Decommissioning Fund (Deposits)		
Timeframe	Amount	Cumulative
Construction	60,000	60,000
Year 1	1,500	61,500
Year 2	1,538	63,038
Year 3	1,576	64,613
Year 4	1,615	66,229
Year 5	1,656	67,884
Year 6	1,697	69,582
Year 7	1,740	71,321
Year 8	1,783	73,104
Year 9	1,828	74,932
Year 10	1,873	76,805
Year 11	1,920	78,725
Year 12	1,968	80,693
Year 13	2,017	82,711
Year 14	2,068	84,778
Year 15	2,119	86,898
Year 16	2,172	89,070
Year 17	2,227	91,297
Year 18	2,282	93,580
Year 19	2,339	95,919
Year 20	2,398	98,317
Year 21	2,458	100,775
Year 22	2,519	103,294
Year 23	2,582	105,877
Year 24	2,647	108,524
Year 25	2,713	111,237
Year 26	2,781	114,018
Year 27	2,850	116,868
Year 28	2,922	119,790
Year 29	2,995	122,784
Year 30	3,070	125,854

Assumed 2MWac Facility

APPENDIX II

[DRAFT] DECOMMISSIONING AGREEMENT

This DECOMMISSIONING AGREEMENT (this “Agreement”) dated as of _____, 2018 (the “Effective Date”) is made by and among the Town of Farmington (“Town”) and [Delaware River Solar, LLC] (“Owner”, together with the Town, the “Parties”).

WHEREAS, Owner intends to build a solar energy generation project on 466 Yellow Mills Road in the Town (the “Project”);

WHEREAS, the Parties wish to enter into this Agreement to set forth terms and conditions of having funds available to pay for the costs of any decommissioning of the Project; and

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Prior to the commencement of construction of the Project, Owner agrees to deposit [sixty-thousand dollars (\$60,000)] in a special purpose account designated in writing by the Town (the “Decommissioning Account”). At the end of each anniversary year of operation of the Project (the “Anniversary Date”), Owner agrees to deposit an additional 2.5% of the then existing amount in the Decommissioning Account on the Anniversary Date, as described in greater detail on Schedule I attached hereto. The Parties agree that the amount in the Decommissioning Account shall be used solely to pay for any decommissioning costs of the Project. Provided Owner complies with its obligations to deposit funds into the Decommissioning Account in accordance with this Agreement, Owner shall have no further payment obligations in connection with funding the Decommissioning Account during the operation of the Project; provided, however, in the event the actual decommissioning costs exceed the amount in the Decommissioning Account, Owner shall be responsible for any such excess costs, provided such excess costs are not as a result of the Town using any amount in the Decommissioning Account for any reason other than to pay for decommissioning costs of the Project in accordance with this Agreement. In the event the Town uses any amount in the Decommissioning Account for any reason other than to pay for decommissioning costs in accordance with this Agreement, the Town shall be responsible to pay for such amount used and shall indemnify and hold harmless Owner and the landowner of the Project, if different from Owner, from any claim, loss, damage, liability or costs (including any reasonable attorney costs) arising from such use of funds for reasons other than to pay for decommissioning costs in accordance with this Agreement.

2. The Parties agree that the decommissioning process of the Project may commence (and the funds to pay for the cost of any such decommissioning from the Decommissioning Account may be used) for the following reasons: (a) Owner provides written notice to the Town of its intent to retire or decommission the Project (the “Owner Decommissioning Notice”), (b) construction of the Project has not started within eighteen (18) months of site plan being approved by the Town, or (c) the Project ceases to be operational for more than twelve (12) consecutive months. The Town shall provide Owner thirty (30) days written notice (the “Town Decommissioning Notice”) prior to the commencement of any decommissioning of the Project by

the Town. In event the Owner fails to decommission the Project within ninety (90) days after providing Owner Decommissioning Notice or fails to respond with a reasonable explanation for the delay in the construction or cessation of operation of the Project within 30 days of the Town Decommissioning Notice, the Town may commence the decommissioning of the Project. For the purposes of this Agreement, "ceases to be operational" shall mean no generation of electricity, other than due to repairs to the Project or causes beyond the reasonable control of Owner. Upon removal of the infrastructure and disposal of any component of the Project from the site on which the Project is built, or in the event the Town becomes owner of the Project, any and all amount remaining in the Decommissioning Account shall be returned to Owner.

3. This Agreement may not be amended or modified except by written instrument signed and delivered by the Parties. This Agreement is binding upon and shall inure to the benefit of the Parties and their respective heirs, executors, administrators, successors and assigns. Owner may assign this Agreement to any subsidiary, or purchaser or transferee of the Project. The Parties agree to execute and deliver any additional document or take any further action as reasonably requested by the other party to effectuate the purpose of this Agreement. The Parties agree that Owner shall have the option to replace the funds in the Decommissioning Account with a commercially reasonable decommissioning bond.

4. The Parties agree that this Agreement shall be construed and enforced in accordance with and governed by the laws of New York.

5. This Agreement may be executed through separate signature pages or in any number of counterparts, and each of such counterparts shall, for all purposes, constitute one agreement binding on all parties.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have caused their names to be signed hereto by their respective representatives thereunto duly authorized as of the date first above written.

TOWN OF FARMINGTON

By: _____

Name: _____

Title: _____

[DELAWARE RIVER SOLAR, LLC]

By: _____

Name: _____

Title: _____

SCHEDULE I

Decommissioning Fund (Deposits)		
Timeframe	Amount	Cumulative
Construction	60,000	60,000
Year 1	1,500	61,500
Year 2	1,538	63,038
Year 3	1,576	64,613
Year 4	1,615	66,229
Year 5	1,656	67,884
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Year 13	2,017	82,711
Year 14	2,068	84,778
Year 15	2,119	86,898
Year 16	2,172	89,070
Year 17	2,227	91,297
Year 18	2,282	93,580
Year 19	2,339	95,919
Year 20	2,398	98,317
Year 21	2,458	100,775
Year 22	2,519	103,294
Year 23	2,582	105,877
Year 24	2,647	108,524
Year 25	2,713	111,237
Year 26	2,781	114,018
Year 27	2,850	116,868
Year 28	2,922	119,790
Year 29	2,995	122,784
Year 30	3,070	125,854

Assumed 2MWac Facility

APPENDIX III

DRS Executed Decommissioning Agreements

Town / County	System Size MW (AC)	Decommissioning Amount (Deposit)	Annual Deposit	Payable
Delaware / Sullivan	2.00	\$76,000	2.50%	Issuance of Building Permit
Delaware / Sullivan	1.75	\$61,000	2.50%	Issuance of Building Permit
Thompson / Sullivan	2.00	\$60,000	2.50%	Start of Construction
Thompson / Sullivan	1.75	\$52,500	2.50%	Start of Construction
Liberty / Sullivan	2.00	\$108,000	2.50%	Issuance of Building Permit
Mooers / Clinton	2.00	\$60,000	\$2,500	Start of Construction
Mooers / Clinton	2.00	\$60,000	\$2,500	Start of Construction
Mooers / Clinton	2.00	\$60,000	\$2,500	Start of Construction
Baldwin / Chemung	2.00	\$60,000	2.50%	Start of Construction
Baldwin / Chemung	2.00	\$60,000	2.50%	Start of Construction
Newfield / Tompkins	2.00	\$60,000	2.50%	Start of Construction
Newfield / Tompkins	2.00	\$60,000	2.50%	Start of Construction
Newfield / Tompkins	2.00	\$60,000	2.50%	Start of Construction

Appendix L

Three-phase pad-mounted compartmental type transformer



General

At Eaton, we are constantly striving to introduce new innovations to the transformer industry, bringing you the highest quality, most reliable transformers. Eaton's Cooper Power series Transformer Products are ISO 9001 compliant, emphasizing process improvement in all phases of design, manufacture, and testing. In order to drive this innovation, we have invested both time and money in the Thomas A. Edison Technical Center, our premier research facility in Franksville, Wisconsin. Such revolutionary products as distribution-class UltraSIL™ Polymer-Housed Evolution™ surge arresters and Envirotemp™ FR3™ fluid have been developed at our Franksville lab.

With transformer sizes ranging from 45 kVA to 12 MVA and high voltages ranging from 2400 V to 46 kV, Eaton has you covered. From fabrication of the tanks and cabinets to winding of the cores and coils, to production of arresters, switches, tap changers, expulsion fuses, current limit fuses, bushings (live and dead) and molded rubber goods, Eaton does it all. Eaton's Cooper Power series transformers are available with electrical grade mineral oil or Envirotemp™ FR3™ fluid, a less-flammable and bio-degradable fluid. Electrical codes recognize the advantages of using Envirotemp™ FR3™ fluid both indoors and outdoors for fire sensitive applications. The bio-based fluid meets Occupational Safety and Health Administration (OSHA) and Section 450.23 NEC Requirements.



Powering Business Worldwide

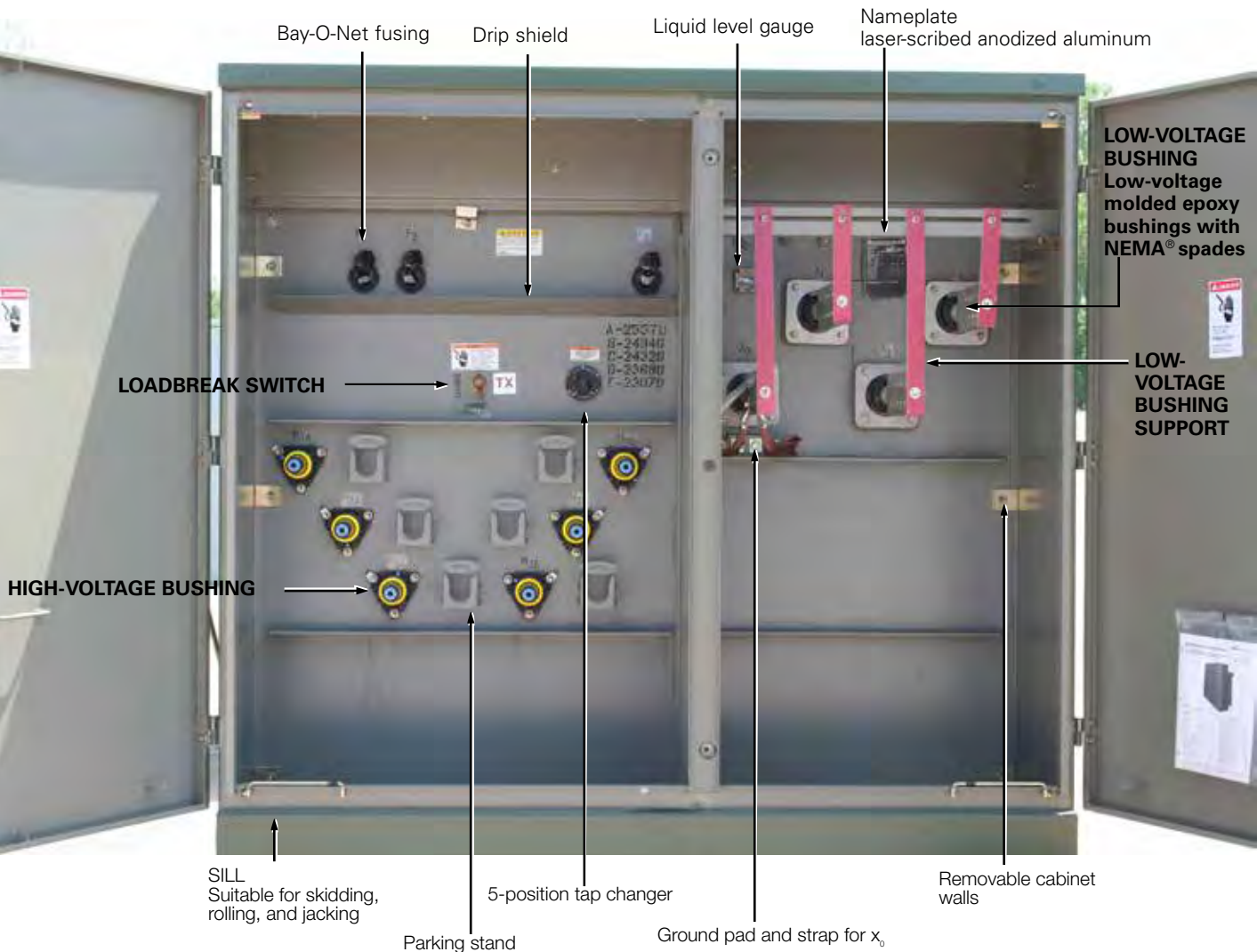


Figure 1. Three-phase pad-mounted compartmental type transformer.

Table 1. Product Scope

Type	Three Phase, 50 or 60 Hz, 65 °C Rise (55 °C, 55/65 °C), 65/75 °C, 75 °C
Fluid Type	Mineral oil or Envirotemp™ FR3™ fluid
Coil Configuration	2-winding or 4-winding or 3-winding (Low-High-Low), 3-winding (Low-Low-High)
Size	45 – 10,000 kVA
Primary Voltage	2,400 – 46,000 V
Secondary Voltage	208Y/120 V to 14,400 V
Specialty Designs	Inverter/Rectifier Bridge
	K-Factor (up to K-19)
	Vacuum Fault Interrupter (VFI)
	UL® Listed & Labeled and Classified
	Factory Mutual (FM) Approved®
	Solar/Wind Designs
	Differential Protection
	Seismic Applications (including OSHPD)
	Hardened Data Center

Table 2. Three-Phase Ratings**Three-Phase 50 or 60 Hz**kVA Available¹:

45, 75, 112.5, 150, 225, 300, 500, 750, 1000, 1500, 2000, 2500, 3000, 3750, 5000, 7500, 10000

¹Transformers are available in the standard ratings and configurations shown or can be customized to meet specific needs.**Table 3. Impedance Voltage**

Rating (kVA)	Low-voltage rating		
	≤ 600 V	2400 Δ through 4800 Δ	6900 Δ through 13800GY/7970 or 13800 Δ
45-75	2.70-5.75	2.70-5.75	2.70-5.75
112.5-300	3.10-5.75	3.10-5.75	3.10-5.75
500	4.35-5.75	4.35-5.75	4.35-5.75
750-2500	5.75	5.75	5.75
3750	5.75	5.75	6.00
5000		6.00	6.50

Note: The standard tolerance is ± 7.5%**Table 4. Audible Sound Levels**

Self-Cooled, Two Winding kVA Rating	NEMA® TR-1 Average
	Decibels (dB)
45-500	56
501-700	57
701-1000	58
1001-1500	60
1501-2000	61
2001-2500	62
2501-3000	63
3001-4000	64
4001-5000	65
5001-6000	66
6001-7500	67
7501-10000	68

Table 5. Insulation Test Levels

KV Class	Induced Test 180 or 400 Hz 7200 Cycle	kV BIL Distribution	Applied Test 60 Hz (kV)
1.2	Twice Rated Voltage	30	10
2.5		45	15
5		60	19
8.7		75	26
15		95	34
25		125	40
34.5		150	50

Table 6. Temperature Rise Ratings 0-3300 Feet (0-1000 meters)

	Standard	Optional
Unit Rating (Temperature Rise Winding)	65 °C	55 °C, 55/65 °C, 75 °C
Ambient Temperature Max	40 °C	50 °C
Ambient Temperature 24 Hour Average	30 °C	40 °C
Temperature Rise Hotspot	80 °C	65 °C

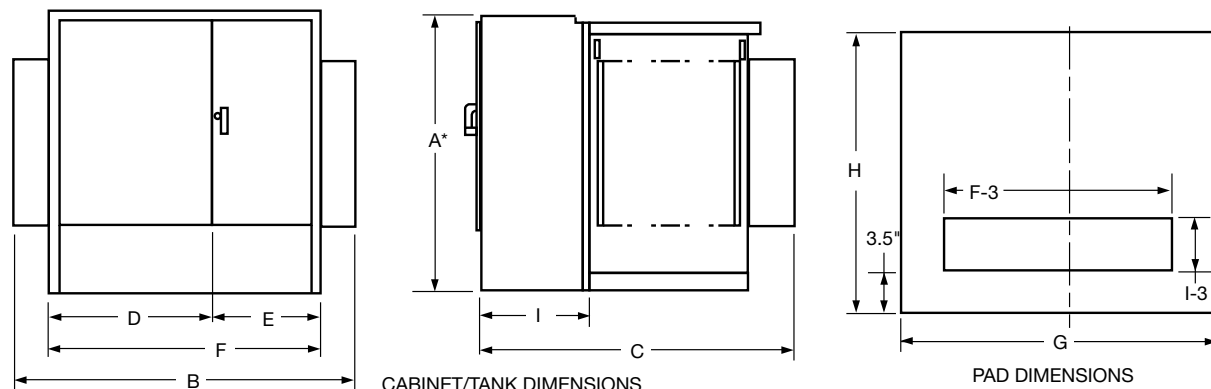


Figure 2. Transformer and pad dimensions.

* Add 9" for Bay-O-Net fusing.

Table 7. Fluid-filled—aluminum windings 55/65 °C Rise¹

65° Rise	DEAD-FRONT—LOOP OR RADIAL FEED—BAY-O-NET FUSING OIL FILLED—ALUMINUM WINDINGS									Gallons of Fluid	Approx. Total Weight (lbs.)
	OUTLINE DIMENSIONS (in.)										
kVA Rating	A*	B	C	D	E	F	G	H	I		
45	50	68	39	42	26	68	72	43	20	110	2,100
75	50	68	39	42	26	68	72	43	20	115	2,250
112.5	50	68	49	42	26	68	72	53	20	120	2,350
150	50	68	49	42	26	68	72	53	20	125	2,700
225	50	72	51	42	30	72	76	55	20	140	3,150
300	50	72	51	42	30	72	76	55	20	160	3,650
500	50	89	53	42	30	72	93	57	20	190	4,650
750	64	89	57	42	30	72	93	61	20	270	6,500
1000	64	89	59	42	30	72	93	63	20	350	8,200
1500	73	89	86	42	30	72	93	90	24	410	10,300
2000	73	72	87	42	30	72	76	91	24	490	12,500
2500	73	72	99	42	30	72	76	103	24	530	14,500
3000	73	84	99	46	37	84	88	103	24	620	16,700
3750	84	85	108	47	38	85	88	112	24	660	19,300
5000	84	96	108	48	48	96	100	112	24	930	25,000
7500	94	102	122	54	48	102	100	126	24	1,580	41,900

¹ Weights, gallons of fluid, and dimensions are for reference only and not for construction. Please contact Eaton for exact dimensions.

* Add 9" for Bay-O-Net fusing.

Table 8. Fluid-Filled—Copper Windings 55/65 °C Rise¹

65° Rise	DEAD-FRONT—LOOP OR RADIAL FEED—BAY-O-NET FUSING OIL FILLED—COPPER WINDINGS									Gallons of Fluid	Approx. Total Weight (lbs.)
	OUTLINE DIMENSIONS (in.)										
kVA Rating	A*	B	C	D	E	F	G	H	I		
45	50	64	39	34	30	64	69	43	20	110	2,100
75	50	64	39	34	30	64	69	43	20	115	2,350
112.5	50	64	49	34	30	64	69	53	20	115	2,500
150	50	64	49	34	30	64	69	53	20	120	2,700
225	50	64	51	34	30	64	73	55	20	140	3,250
300	50	64	51	34	30	64	75	55	20	160	3,800
500	50	81	53	34	30	64	85	57	20	200	4,800
750	64	89	57	42	30	72	93	61	20	255	6,500
1000	64	89	59	42	30	72	93	63	20	300	7,800
1500	73	89	86	42	30	72	93	90	24	410	10,300
2000	73	72	87	42	30	72	76	91	24	420	11,600
2500	73	72	99	42	30	72	76	103	24	500	14,000
3000	73	84	99	46	37	84	88	103	24	720	18,700
3750	84	85	108	47	38	85	88	112	24	800	20,500
5000	84	96	108	48	48	96	100	112	24	850	25,000
7500	94	102	122	54	48	102	100	126	24	1,620	46,900

¹ Weights, gallons of fluid, and dimensions are for reference only and not for construction. Please contact Eaton for exact dimensions.

* Add 9" for Bay-O-Net fusing.

Standard features

Connections and neutral configurations

- Delta - Wye: Low voltage neutral shall be a fully insulated X0 bushing with removable ground strap.
- Grounded Wye-Wye: High voltage neutral shall be internally tied to the low voltage neutral and brought out as the H0X0 bushing in the secondary compartment with a removable ground strap.
- Delta-Delta: Transformer shall be provided without a neutral bushing.
- Wye-Wye: High voltage neutral shall be brought out as the H0 bushing in the primary compartment and the low voltage neutral shall be brought as the X0- bushing in the secondary compartment.
- Wye-Delta: High voltage neutral shall be brought out as the H0 bushing in the primary compartment. No ground strap shall be provided (line to line rated fusing is required).

High and low voltage bushings

- 200 A bushing wells (15, 25, and 35 kV)
- 200 A, 35 kV Large Interface
- 600 A (15, 25, and 35 kV) Integral bushings (dead-front)
- Electrical-grade wet-process porcelain bushings (live-front)

Tank/cabinet features

- Bolted cover for tank access (45-2500 kVA)
- Welded cover with hand hole (>2500 kVA)
- Three-point latching door for security
- Removable sill for easy installation
- Lifting lugs (4)
- Stainless steel cabinet hinges and mounting studs
- Steel divider between HV and LV compartment
- 20" Deep cabinet (45-1000 kVA)
- 24" Deep cabinet (1500-7500 kVA)
- 30" Deep cabinet (34.5/19.92 kV)
- Pentahead captive bolt
- Stainless steel 1-hole ground pads (45-500 kVA)
- Stainless steel 2-hole ground pads (750-10,000 kVA)
- Parking Stands (dead-front)

Valves/plugs

- One-inch upper filling plug
- One-inch drain plug (45-500 kVA)
- One-inch combination drain valve with sampling device in low voltage compartment (750-10,000 kVA)
- Automatic pressure relief valve

Nameplate

- Laser-scribed anodized aluminum nameplate



Figure 3. Drain valve with sampler.



Figure 4. Automatic Pressure relief valve.



Figure 5. Liquid level gauge.



Figure 6. External Gauges.



Figure 7. External visible break with gauges.

Optional features

High and low voltage bushings

- 200 A (15, 25 kV) bushing inserts
- 200 A (15, 25 kV) feed thru inserts
- 200 A (15, 25 kV) (HTN) bushing wells with removable studs
- High-voltage 600 A (15, 25, 35 kV) deadbreak one-piece bushings
- Low voltage 6-, 8-holes spade
- Low voltage 12-, 16-, 20-holes spade (750-2500 kVA)
- Low voltage bushing supports

Tank/cabinet features

- Stainless steel tank base and cabinet
- Stainless steel tank base, cabinet sides and sill
- 100% stainless steel unit
- Service entrance (2 inch) in sill or cabinet side
- Touch-up paint (domestic)
- Copper ground bus bar
- Kirk-Key provisions
- Nitrogen blanket
- Bus duct cutout

Special designs

- Factory Mutual (FM)
- UL® Classified
- Triplex
- High altitude
- K-Factors
- Step-up
- Critical application
- Modulation transformers
- Seismic applications (including OSHPD)

Switches

- One, two, or three On/Off loadbreak switches
- 4-position loadbreak V-blade switch or T-blade switch
- Delta-wye switch
- 3-position V-Blade selector switch
- 100 A, 150 A, 300 A tap changers
- Dual voltage switch
- Visible break with VFI interrupter interlock
- External visible break (15, 25, and 35 kV, up to 3 MVA)
- External visible break with gauges (15, 25, and 35 kV, up to 3 MVA)

Gauges and devices

- Liquid level gauge (optional contacts)
- Pressure vacuum gauge (optional contacts and bleeder)
- Dial-type thermometer (optional alarm contacts)
- Cover mounted pressure relief device (optional alarm contacts)
- Ground connectors
- Hexhead captive bolt
- Molded case circuit breaker mounting provisions
- External gauges in padlockable box

Overcurrent protection

- Bay-O-Net fusing (Current sensing, dual sensing, dual element, high amperage overload)
- Bay-O-Net expulsion fuse in series with a partial range under-oil ELSP current limiting fuse (below 23 kV)
- Cartridge fusing in series with a partial range under-oil ELSP current limiting fuse (above 23 kV)
- MagneX™ interrupter with ELSP current-limiting fuse
- Vacuum Fault Interrupter (VFI)
- Visible break window
- Fuse/switch interlock

Valves/plugs

- Drain/sampling valve in high-voltage compartment
- Globe type upper fill valve

Overvoltage protection

- Distribution-, intermediate-, or station-class surge arresters
- Elbow arresters (for dead-front connections)

Metering/fan/control

- Full metering package
- Current Transformers (CTs)
- Metering Socket
- NEMA® 4 control box (optional stainless steel)
- NEMA® 7 control box (explosion proof)
- Fan Packages

Testing

- Customer test witness
- Customer final inspection
- Zero Sequence Impedance Test
- Heat Run Test
- ANSI® Impulse Test
- Audible Sound Level Test
- RIV (Corona) Test
- Dissolved Gas Analysis (DGA) Test
- 8- or 24-Hour Leak Test

Coatings (paint)

- ANSI® Bell Green
- ANSI® #61 Light Gray
- ANSI® #70 Sky Gray
- Special paint available per request

Nameplate

- Stainless steel nameplate

Decals and labels

- High voltage warning signs
- Mr. Ouch
- Bi-lingual warning
- DOE compliant
- Customer stock code
- Customer stenciling
- Shock and arc flash warning decal
- Non-PCB decal

Construction

Core

The three-legged, step-lap mitered core construction is manufactured using a high-quality cutting machine. For maximum efficiency, cores are precisely stacked, virtually eliminating gaps in the corner joints.

Five-legged wound core or shell-type triplex designs are used for wye-wye connected transformers, and other special transformer designs.

Cores are manufactured with precision cut, burr-free, grain-oriented silicon steel. Many grades of core steel are available for optimizing core loss efficiency.

Coils

Pad-mounted transformers feature a rectangular coil configuration with wire-wound, high-voltage primaries and sheet-wound secondaries. The design minimizes axial stress developed by short circuits and provides for magnetic balancing of tap connections.

Coils are wound using the highest quality winding machines providing exacting tension control and conductor placement for superior short-circuit strength and maximum efficiency.

Extra mechanical strength is provided by diamond pattern, epoxy-coated paper insulation, used throughout the coil, with additional epoxy at heavy stress points. The diamond pattern distribution of the epoxy and carefully arranged ducts, provide a network of passages through which cooling fluid can freely circulate.

Coil assemblies are heat-cured under calculated hydraulic pressure to ensure performance against short-circuit forces.

Core and coil assemblies

Pad-mounted transformer core and coil assemblies are braced with heavy steel ends to prevent the rectangular coil from distorting under short-circuit conditions. Plates are clamped in place using presses, and welded or bolted to form a solid core and coil assembly. Core and coil assemblies exceed ANSI® and IEEE® requirements for short-circuit performance. Due to the rigidity of the design, impedance shift after short-circuit is comparable to that of circular wound assemblies.

Tanks

Transformer tanks are designed for high strength and ease of handling, installation, and maintenance. Tanks are welded using precision-cut, hot rolled, pickled and oiled steel. They are sealed to protect the insulating fluid and other internal components.

Transformer tanks are pressure-tested to withstand 7 psig without permanent distortion and 15 psig without rupture.

Tank finish

An advanced multi-stage finishing process exceeds IEEE Std C57.12.28™-2014 standards. The eight-stage pre-treatment process assures coating adhesion and retards corrosion. It converts tank surfaces to a nonmetallic, water insoluble iron phosphate coating.

The paint method consists of two distinct layers of paint. The first is an epoxy primer (E-coat) layer which provides a barrier against moisture, salt and corrosives. The two-component urethane final coat seals and adds ultraviolet protection.

Vacuum processing

Transformers are dried and filled with filtered insulating fluid under vacuum, while secondary windings are energized. Coils are heated to drive out moisture, ensuring maximum penetration of fluid into the coil insulation system.

Insulating fluid

Eaton's Cooper Power series transformers are available with electrical-grade mineral insulating oil or Envirotemp™ FR3™ fluid. The highly refined fluids are tested and degassed to assure a

chemically inert product with minimal acid ions. Special additives minimize oxygen absorption and inhibit oxidation. To ensure high dielectric strength, the fluid is re-tested for dryness and dielectric strength, refiltered, heated, dried, and stored under vacuum before being added to the completed transformer.

Eaton's Cooper Power series transformers filled with Envirotemp™ FR3™ fluid enjoy unique fire safety, environmental, electrical, and chemical advantages, including insulation life extending properties.

A bio-based, sustainable, natural ester dielectric coolant, Envirotemp™ FR3™ fluid quickly and thoroughly biodegrades in the environment and is non-toxic per acute aquatic and oral toxicity tests.

Building for Environmental and Economic Sustainability (BEES) total life cycle assessment software, utilized by the US Dept. of Commerce, reports its overall environmental performance impact score at 1/4th that reported for mineral oil. Envirotemp™ FR3™ fluid has also earned the EPA Environmental Technology Verification of transformer materials.

With a fire point of 360 °C, Envirotemp™ FR3™ fluid is FM Approved® and Underwriters Laboratories (UL®) Classified "Less-Flammable" per NEC® Article 450-23, fitting the definition of a Listed Product per NEC®.

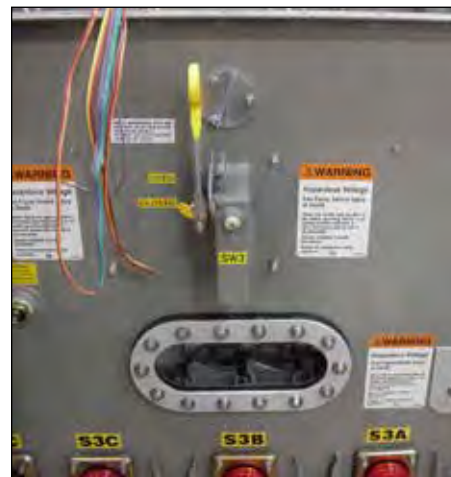


Figure 8. VFI transformer with visible break.

Pad-mounted VFI transformer

Eaton's Cooper Power series VFI transformer combines a conventional distribution transformer with the proven Vacuum Fault Interrupter (VFI). This combination provides both voltage transformation and transformer over current protection in one space saving and money saving package. The pad-mounted VFI transformer protects the transformer and provides proper coordination with upstream protective devices. When a transformer fault or overload condition occurs, the VFI breaker trips and isolates the transformer.

The three-phase VFI breaker has independent single-phase initiation, but is three-phase mechanically gang-tripped. A trip signal on any phase will open all three phases. This feature eliminates single-phasing of three phase loads. It also enables the VFI breaker to be used as a three-phase load break switch.

Due to the resettable characteristics of the VFI breaker, restoring three-phase service is faster and easier.

The sealed visible break window and switch is an option that can be installed to provide visible break contact. This feature provides enhanced safety and allows an operator to see if the loadbreak switch contacts are in an open or closed position before performing maintenance.

Envirotran™ FM Approved special protection transformer

Eaton's Cooper Power series Envirotran™ transformer is FM Approved and suitable for indoor locations. Factory Mutual Research Corporation's (FMRC) approval of the Envirotran transformer line makes it easy to comply with and verify compliance with Section 450.23, 2008 NEC, Less-Flammable Liquid-Filled Transformer Requirements for both indoor and outdoor locations.

Envirotran FM Approved transformers offer the user the benefit of a transformer that can be easily specified to comply with NEC, and makes FM Safety Data Sheet compliance simpler, while also providing maximum safety and flexibility for both indoor and outdoor installations.

Because the "FM Approved" logo is readily visible on the transformer and its nameplate, NEC compliance is now easily verifiable by the inspector.

Envirotran FM Approved transformers are manufactured under strict compliance with FMRC Standard 3990 and are filled with FM Approved Envirotemp™ FR3™ fluid, a fire-resistant dielectric coolant.

**Special application transformers****Data Center transformer**

With focus rapidly shifting from simply maximizing uptime and supporting demand to improving energy utilization, the data center industry is continually looking for methods to increase its energy efficiency and reliability. Utilizing cutting edge technology, Eaton's Cooper Power series Hardened Data Center (HDC) transformers are the solution. Designed with special attention given to surge protection, HDC liquid-filled transformers provide superior performance under the harshest electrical environments. Contrary to traditional dry-type units, HDC transformers provide unsurpassed reliability, overloadability, operational life, efficiency, thermal loading and installed footprint. These units have reliably served more than 100 MW of critical data center capacity for a total of more than 6,000,000 hours without any reported downtime caused by a thermal or short-circuit coil failure.

The top priority in data center operations is uninterrupted service. Envirotran HDC transformers from Eaton, having substantially higher levels of insulation, are less susceptible to voltage surges. Eaton has experienced zero failures due to switching transients. The ANSI® and IEEE® standard impulse withstand ratings are higher for liquid-filled transformers, making them less susceptible to insulation failure. The Envirotran HDC transformer provides ultimate protection by increasing the BIL rating one level higher than standard liquid-filled transformer ratings. The cooling system of liquid-filled transformers provides better protection from severe overloads—overloads that can lead to significant loss of life or failure.

Data center design typically includes multiple layers of redundancy, ensuring maximum uptime for the critical IT load. When best in class transformer manufacturing lead times are typically weeks, not days, an unexpected transformer failure will adversely affect the facility's reliability and profitability. Therefore, the ability to determine the electrical and mechanical health of a transformer can reduce the probability of costly, unplanned downtime. Routine diagnostic tests, including key fluid properties and dissolved gas analysis (DGA), can help determine the health of a liquid-filled transformer. Although sampling is not required for safe operation, it will provide the user with valuable information, leading to scheduled repair or replacement, and minimizing the duration and expense of an outage. With a dry-type transformer, there is no reliable way to measure the health or likelihood of an impending failure.

Solar transformer

As a result of the increasing number of states that are adopting aggressive Renewable & Alternative Energy Portfolio Standards, the solar energy market is growing—nearly doubling year over year. Eaton, a key innovator and supplier in this expanding market, is proud to offer its Cooper Power series Envirotran transformers specifically designed for Solar Photovoltaic medium-voltage applications. Eaton is working with top solar photovoltaic developers, integrators and inverter manufacturers to evolve the industry and change the way we distribute power.

In accordance with this progressive stance, every Envirotran Solar transformer is filled with non-toxic, biodegradable Envirotemp™ FR3™ dielectric fluid, made from renewable seed oils. On top of its biodegradability, Envirotemp™ FR3™ fluid substantially extends the life of the transformer insulation, saving valuable resources. What better way to distribute green power than to use a green transformer. In fact, delaying conversion to Envirotran transformers places the burden of today's environmental issues onto tomorrow's generations. Eaton can help you create a customized transformer, based on site specific characteristics including: temperature profile, site altitude, solar profile and required system life. Some of the benefits gained from this custom rating include:

- Reduction in core losses
- Improved payback on investment
- Reduction in footprint
- Improved fire safety
- Reduced environmental impact

For the solar photovoltaic industry, Eaton is offering standard step up transformers and dual secondary designs, including 4-winding, 3-winding (Low-High-Low) and 3-winding (Low-Low-High) designs.

Wind transformer

Eaton is offering custom designs for renewable energy power generation. Eaton manufactures its Cooper Power series Generator Step-Up (GSU) transformers for installation at the base of every wind turbine. Additionally, grounding transformers are available for wind power generation.

DOE efficiency

The United States Department of Energy (DOE) has mandated efficiency values for most liquid type, medium voltage transformers. As a result, all applicable Eaton's Cooper Power series transformers 2500 kVA and below conform to efficiency levels as specified in the DOE ruling "10 CFR Part 431 Energy Conservation Program."

Underwriters Laboratories® (UL®) Listed and Labeled/Classified

The Envirotran transformer from Eaton can be specified as UL® Listed & Labeled, and/or UL® Classified. Underwriters Laboratories (UL®) listing is a verification of the design and construction of the transformer to the ANSI® and IEEE® standards. UL® listing generally is the most efficient, cost-effective solution for complying with relevant state and local electrical codes. UL® Combination Classification/Listing is another way in which to comply with Section 450.23, 2008 NEC® requirements. This combines the UL® listed transformer with a UL® Classified Less-Flammable Liquid and complies with the use restrictions found within the liquid Classification.



K-Factor transformer

With a drastic increase in the use of ferromagnetic devices, arcing devices, and electric power converters, higher frequency loads have increased significantly. This harmonic loading has the potential to generate higher heat levels within a transformer's windings and leads by as much as 300%. Harmonic loading has the potential to induce premature failure in standard-design distribution transformers.

In addition to standard UL® "K-Factor" ratings, transformers can be designed to customer-provided specifications detailing precise loading scenarios. Onsite measurements of magnitude and frequency, alongside harmonic analysis of the connected load can be performed by Eaton engineers or a third party consultant. These field measurements are used to determine exact customer needs and outline the transformer specifications.

Eaton will design harmonic-resistant transformers that will be subjected to the unique harmonic loads. These units are designed to maintain normal temperature rise under harmonic, full-load conditions. Standard UL® "K-Factor" designs can result in unnecessary costs when the "next-highest" K-Factor must be selected for a calculated design factor. To save the customer these unnecessary costs, Eaton can design the transformer to the specific harmonic spectrum used in the application. Eaton's Cooper Power series K-factor transformers are filled with mineral oil or Envirotemp™ FR3™ fluid and enjoy the added benefits of dielectric cooling such as higher efficiencies than dry-type transformers.

Modulation transformer

Bundled with an Outboard Modulation Unit (OMU) and a Control and Receiving Unit (CRU), a Modulation Transformer Unit (MTU) is designed to remotely achieve two way communication.

The use of an MTU reduces travel time and expense versus traditional meter reading performed by high voltage electricians. Additionally, with MTU it is possible to manage and evaluate energy consumption data, providing reduced metering costs and fewer tenant complaints.

An MTU utilizes existing utility infrastructure, therefore eliminating the need to engineer and construct a dedicated communication network.



Figure 9. Modular transformer.

Inverter/rectifier bridge

Eaton complements its range of applications for transformers by offering dual winding designs. These designs are intended for connection to 12-pulse rectifier bridges.

Product attributes

To set us apart from other transformer manufactures, Eaton includes the following guarantees with every three-phase pad-mounted transformer.

Engineered to order (ETO)

Providing the customer with a well developed, cost-effective solution is the number one priority at Eaton. Using customer specifications, Eaton will work with the customer from the beginning to the end to develop a solution to fit their needs. Whether it is application specific, site specific, or a uniquely specified unit, Eaton will provide transformers with the best in class value and performance, saving the customer time and money.

Made in the U.S.A.

Eaton's three-phase pad-mounted transformers are produced right here in the United States of America. Our manufacturing facilities are positioned strategically for rapid shipment of products. Furthermore, should the need arise, Eaton has a broad network of authorized service repair shops throughout the United States.

Superior paint performance

Protecting transformers from nature's elements worldwide, Eaton's E-coat system provides unrivaled transformer paint life, and exceeds IEEE Std C57.12.28™-2014 and IEEE Std C57.12.29™-2005 standards. In addition to the outside of the unit, each transformer receives a gray E-coat covering in the interior of the tank and cabinet, providing superior rust resistance and greater visibility during service.

If the wide range of standard paint selections does not suit the customer's needs, Eaton will customize the paint color to meet their requirements.

Rectangular coil design

Eaton utilizes a rectangular coil design. This winding technique results in a smaller overall unit footprint as well as reducing the transformer weight. The smaller unit size does not hinder the transformer performance in the least. Units have proven short circuit withstand capabilities up to 10 MVA.

Testing

Eaton performs routing testing on each transformer manufactured including the following tests:

- **Insulation Power Factor:** This test verifies that vacuum processing has thoroughly dried the insulation system to required limits.
- **Ratio, Polarity, and Phase Relation:** Assures correct winding ratios and tap voltages; checks insulation of HV and LV circuits. Checks entire insulation system to verify all live-to-ground clearances.
- **Resistance:** This test verifies the integrity of internal high-voltage and low-voltage connections; provides data for loss upgrade calculations.
- **Routine Impulse Tests:** The most severe test, simulating a lightning surge. Applies one reduced wave and one full wave to verify the BIL rating.
- **Applied Potential:** Applied to both high-voltage and low-voltage windings, this test stresses the entire insulation system to verify all live-to-ground clearances.
- **Induced Potential:** 3.46 times normal plus 1000 volts for reduced neutral designs.
- **Loss Test:** These design verification tests are conducted to assure that guaranteed loss values are met and that test values are

TRANSFORMERLESS CENTRAL INVERTERS WITH A SINGLE POWER BLOCK

1,000 kW / 1,247 kVA AT 1,500 Vdc

Maximum power density

These PV central inverters feature more power per cubic foot. Thanks to the use of high-quality components, this inverter series performs at the highest possible level.

Latest generation electronics

The B Series inverters integrate an innovative control unit that runs faster and performs a more efficient and sophisticated inverter control, as it uses a last-generation digital signal processor. Furthermore, the hardware of the control unit allows some more accurate measurements and very reliable protections.

These inverters feature a low voltage ride-through capability and also a lower power consumption thanks to a more efficient power supply electronic board.

Integrated DC and AC connections

The input and output connections are integrated into the same cabinet, facilitating connection, maintenance and repair work.

Maximum protection

These PV inverters are supplied with the combiner box already integrated. Thus, they can guarantee the maximum protection thanks to their DC load break switches and the motorized DC switch to decouple the PV generator from the inverter.

Moreover, they are also supplied with a motorized AC circuit breaker. Optionally, they can be supplied with DC fuses, smart grounding kit and input current monitoring.

Maximum efficiency values

Through the use of innovative electronic conversion topologies, efficiency values of up to 98.9% can be achieved.

Enhanced functionality

This new INGECON® SUN PowerMax range features a revamped, improved enclosure which, together with its innovative air cooling system, makes it possible to increase the ambient operating temperature.



Long-lasting design

These inverters have been designed to guarantee a long life expectancy. Standard 5 year warranty, extendable for up to 25 years.

Grid support

The INGECON®SUN PowerMax B Series has been designed to comply with the grid connection requirements UL1741SA, IEEE1547 and RULE21, contributing to the quality and stability of the electric system. These inverters therefore feature a low voltage ride-through capability, and can deliver reactive power and control the active power delivered to the grid. Moreover, they can operate in weak power grids with a low SCR.

Ease of maintenance

All the elements can be removed or replaced directly from the inverter's front side, thanks to its new design.

Easy to operate

The INGECON® SUN PowerMax inverters feature an LCD screen for the simple and convenient monitoring of the inverter status and a range of internal variables. The display also includes a number of LEDs to show the inverter operating status with warning lights to indicate any incidents. All this helps to simplify and facilitate maintenance tasks.

Monitoring and communication

Ethernet communications supplied as standard. The following applications are included at no extra cost: INGECON® SUN Manager, INGECON® SUN Monitor and its Smartphone version Web Monitor, available on the App Store. These applications are used for monitoring and recording the inverter's internal operating variables through the Internet (alarms, real time production, etc.), in addition to the historical production data.

Two communication ports available (one for monitoring and one for plant controlling), allowing fast and simultaneous plant control.

PROTECTIONS

- Integrated combiner box with DC load break switches.
- DC Reverse polarity.
- Short-circuits and overloads at the output.
- Anti-islanding with automatic disconnection.
- Insulation failure DC.
- Up to 12 pairs of fuse holders (up to 15 if the combiner box is not integrated).
- Lightning induced DC and AC surge arrestors, type 2.
- Motorized DC switch to automatically disconnect the inverter from the PV array.
- Low voltage ride-through capability.
- Motorized AC circuit breaker.
- Hardware protection via firmware.
- NEMA 4 / IP66 protection class for the electronics.

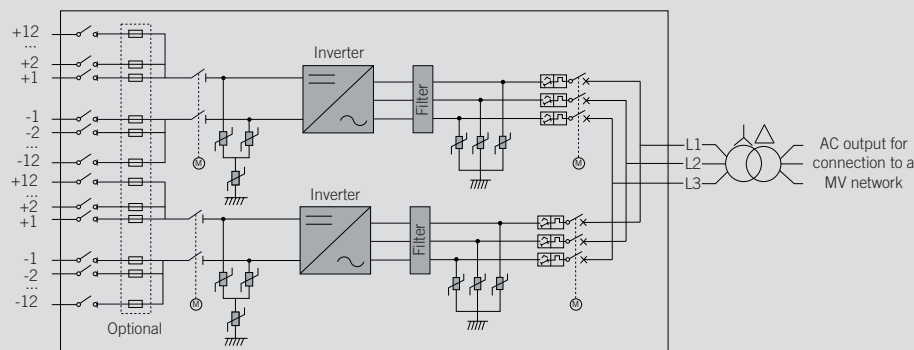
OPTIONAL ACCESSORIES

- Insulation failure AC.
- Grounding kit.
- Heating kit, for operating at an ambient temperature of down to -22 °F.
- DC fuses.
- Monitoring of the group currents at the DC input.
- Extendable up to 15 fuse holders per inverter.
- PID prevention kit (PID: Potential Induced Degradation).
- Night time reactive power injection.

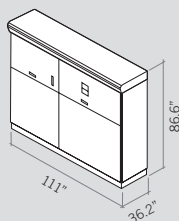
ADVANTAGES OF THE MONOBLOCK VERSION

- Higher power density.
- Latest generation electronics.
- More efficient electronic protection.
- Night time supply to communicate with the inverter at night.
- Enhanced performance.
- Easier maintenance thanks to its new design and enclosure.
- Lightweight spares.
- It allows to ground the PV array.
- Components easily replaceable.

PowerMax B Series



Size and weight (inches and lbs)

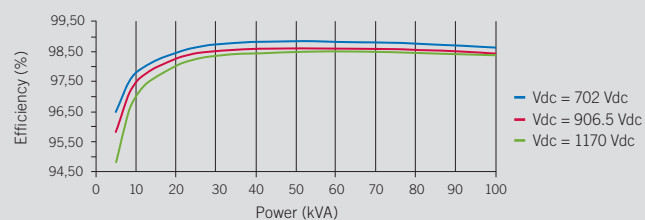


3,572 pounds

1245TL U B480	
Input (DC)	
Recommended PV array power range ⁽¹⁾	1,100 - 1,620 kWp
Voltage Range MPP ⁽²⁾	694 -1,300 V
Maximum voltage ⁽³⁾	1,500 V
Maximum current	2,000 A
N° inputs with fuse-holders	6 up to 12 (up to 15 if the combiner box is not integrated)
Fuse dimensions	63 A / 1,500 V to 400 A / 1,500 V fuses (optional)
Type of connection	Connection to copper bars
Power blocks	1
MPPT	1
Input protections	
Overvoltage protections	Type 2 surge arresters
DC switch	Motorized DC load break disconnect
Other protections	Integrated DC combiner box / Up to 12 pairs of DC fuses (optional) / Reverse polarity / Insulation failure monitoring / Anti-islanding protection / Emergency pushbutton
Output (AC)	
Power @86 °F / @122 °F	1,000 kW
Current @86 °F / @122 °F	1,202.8 A
Rated voltage	480 V IT System
Frequency	50 / 60 Hz
Power Factor ⁽⁴⁾	1
Power Factor adjustable	Yes. S _{max} =1,247 kVA
THD (Total Harmonic Distortion) ⁽⁵⁾	<3%
Output protections	
Overvoltage protections	Type 2 surge arresters
AC breaker	Motorized AC circuit breaker
Anti-islanding protection	Yes, with automatic disconnection
Other protections	AC short-circuits and overloads
Features	
Maximum efficiency	98.9%
CEC	98.5%
Max. consumption aux. services	4,250 VA
Stand-by or night consumption ⁽⁶⁾	< 60 W
Average energy consumption per day	30 kWh
General Information	
Ambient temperature	-4 °F to +140 °F
Relative humidity (non-condensing)	0-100%
Protection class	NEMA3 (Outdoor)
Maximum altitude	14,770 ft (for installations beyond 3,300 ft, please contact Ingeteam's solar sales department)
Cooling system	Air forced with temperature control (230 V phase+ neutral power supply)
Air flow	84 ft ³ /s (7,800 m ³ /h)
Acoustic emission	<77 dB
Marking	CE, ETL
EMC and security standards	UL1741, FCC Part 15, IEEE C37.90.1, IEEE C37.90.2, CSA22.2 No107
Grid connection standards	IEC 62116, UL1741SA, IEEE1547, IEEE1547.1, NEC CODE, Rule 21, Rule 14H, CSA22.2 No107

Notes: ⁽¹⁾ Depending on the type of installation and geographical location. Data for STC conditions ⁽²⁾ V_{mpp,min} is for rated conditions (V_{ac}=1 p.u. and Power Factor=1) ⁽³⁾ Consider the voltage increase of the 'V_{oc}' at low temperatures ⁽⁴⁾ For P_{out}>25% of the rated power ⁽⁵⁾ For P_{out}>25% of the rated power and voltage in accordance with IEC 61000-3-4 ⁽⁶⁾ Consumption from PV field when there is PV power available.

Efficiency INGECON® SUN Power Max 1245TL U B480



Appendix M

**NEW YORK STATE STANDARDIZED CONTRACT
FOR INTERCONNECTION OF NEW DISTRIBUTED GENERATION UNITS WITH
CAPACITY OF 5 MW OR LESS CONNECTED IN PARALLEL WITH
UTILITY DISTRIBUTION SYSTEMS**

Customer Information:

Delaware River Solar, LLC (466 Yellow Mills Rd #3)
466 Yellow Mills Rd
Farmington, NY 14522

Telephone: 646-998-6495

Unit Application / File No. 12511
Nonresidential Photovoltaic System – 2000 kW

Utility Information:

Rochester Gas & Electric
89 East Avenue
Rochester, NY 14649

Telephone: (585) 546-2700

Utility Account No. New Service

DEFINITIONS

Dedicated Facilities means the equipment and facilities on the Utility's system necessary to permit operation of the Unit in parallel with the Utility's system.

Delivery Service means the services the Utility may provide to deliver capacity or energy generated by Customer to a buyer to a delivery point(s), including related ancillary services.

"Net energy metering" means the use of a net energy meter to measure, during the billing period applicable to a customer-generator, the net amount of electricity supplied by an electric corporation and provided to the corporation by a customer-generator.

"SIR" means the New York State Standardized Interconnection Requirements for new distributed generation units with a nameplate capacity of 5 MW or less connected in parallel with the Utility's distribution system

"Unit" means the distributed generation unit with a nameplate capacity of 5 MW or less located on the Customer's premises at the time the Utility approves such Unit for operation in parallel with the Utility's system. This Agreement relates only to such Unit, but a new agreement shall not be required if the Customer makes physical alterations to the Unit that do not result in an increase in its nameplate generating capacity. The nameplate generating capacity of the Unit shall not exceed 5 MW, except for fuel cell electric generating units which shall not exceed 1.5 MW and farm waste generating units shall not exceed 2.0 MW.

I. TERM AND TERMINATION

1.1 Term: This Agreement shall become effective when executed by both Parties and shall continue in effect until terminated.

1.2 Termination: This Agreement may be terminated as follows:

- a. The Customer may terminate this Agreement at any time, by giving the Utility sixty (60) days' written notice.
- b. Failure by the Customer to seek final acceptance by the Utility within twelve (12) months after completion of the utility construction process described in the SIR shall automatically terminate this Agreement.
- c. Either Party may, by giving the other Party at least sixty (60) days' prior written notice, terminate this Agreement in the event that the other Party is in default of any of the material terms and conditions of this Agreement. The terminating Party shall specify in the notice the basis for the termination and shall provide a reasonable opportunity to cure the default.
- d. The Utility may, by giving the customer at least sixty (60) days' prior written notice, terminate this Agreement for cause. The Customer's non-compliance with an upgrade to the SIR, unless the Customer's installation is "grandfathered," shall constitute good cause.

1.3 Disconnection and Survival of Obligations: Upon termination of this Agreement the Unit will be disconnected from the Utility's electric system. The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

1.4 Suspension: This Agreement will be suspended during any period in which the Customer is not eligible for delivery service from the Utility

II. SCOPE OF AGREEMENT

2.1 Scope of Agreement: This Agreement relates solely to the conditions under which the Utility and the Customer agree that the Unit may be interconnected to and operated in parallel with the Utility's system.

2.2 Electricity Not Covered: The Utility shall have no duty under this Agreement to account for, pay for, deliver, or return in kind any electricity produced by the Facility and delivered into the Utility's System unless the system is net metered as described in Public Service Law Sections 66-j or 66-l.

III. INSTALLATION, OPERATION AND MAINTENANCE OF UNIT

3.1 Compliance with SIR: Subject to the provisions of this Agreement, the Utility shall be required to interconnect the Unit to the Utility's system, for purposes of parallel operation, if the Utility accepts the Unit as in compliance with the SIR. The Customer shall have a continuing obligation to maintain and operate the Unit in compliance with the SIR.

3.2 Observation of the Unit - Construction Phase: The Utility may, in its discretion and upon reasonable notice, conduct reasonable on-site verifications during the construction of the Unit. Whenever the Utility chooses to exercise its right to conduct observations herein it shall specify to the Customer its reasons for its decision to conduct the observation. For purposes of this paragraph and paragraphs 3.3 through 3.5, the term "on-site verification" shall not include testing of the Unit, and verification tests shall not be required except as provided in paragraphs 3.3 and 3.4.

3.3 Observation of the Unit - Ten-day Period: The Utility may conduct on-site verifications of the Unit and observe the execution of verification testing within a reasonable period of time, not exceeding ten (10) business days after system installation. The applicant's facility will be allowed to commence parallel operation upon satisfactory completion of the verification test. The applicant must have complied with and must continue to comply with all contractual and technical requirements.

3.4 Observation of the Unit - Post-Ten-day Period: If the Utility does not perform an on-site verification of the Unit and observe the execution of verification testing within the ten-day period, the Customer will send the Utility within five (5) days of the verification testing a written notification certifying that the Unit has been installed and tested in compliance with the SIR, the utility-accepted design and the equipment manufacturer's instructions. The Customer may begin to produce energy upon satisfactory completion of the verification test. After receiving the verification test notification, the Utility will either issue to the Customer a formal letter of acceptance for interconnection, or may request that the applicant and utility set a date and time to conduct an on-site verification of the Unit and make reasonable inquiries of the Customer, but only for purposes of determining whether the verification tests were properly performed. The Customer shall not be required to perform the verification tests a second time, unless irregularities appear in the verification test report or there are other objective indications that the tests were not properly performed in the first instance.

3.5 Observation of the Unit - Operations: The Utility may conduct on-site verification of the operations of the Unit after it commences operations if the Utility has a reasonable basis for doing so based on its responsibility to provide continuous and reliable utility service or as authorized by the provisions of the Utility's Retail Electric Tariff relating to the verification of customer installations generally.

3.6 Costs of Dedicated Facilities: During the term of this Agreement, the Utility shall design, construct and install the Dedicated Facilities. The Customer shall be responsible for paying the incremental capital cost of such Dedicated Facilities attributable to the Customer's Unit. All costs associated with the operation and maintenance of the Dedicated Facilities after the Unit first

produces energy shall be the responsibility of the Utility.

IV. DISCONNECTION OF THE UNIT

4.1 Emergency Disconnection: The Utility may disconnect the Unit, without prior notice to the Customer (a) to eliminate conditions that constitute a potential hazard to Utility personnel or the general public; (b) if pre-emergency or emergency conditions exist on the Utility system; (c) if a hazardous condition relating to the Unit is observed by a Utility inspection; or (d) if the Customer has tampered with any protective device. The Utility shall notify the Customer of the emergency if circumstances permit.

4.2 Non-Emergency Disconnection: The Utility may disconnect the Unit, after notice to the responsible party has been provided and a reasonable time to correct, consistent with the conditions, has elapsed, if (a) the Customer has failed to make available records of verification tests and maintenance of his protective devices; (b) the Unit system interferes with Utility equipment or equipment belonging to other customers of the Utility; (c) the Unit adversely affects the quality of service of adjoining customers.

4.3 Disconnection by Customer: The Customer may disconnect the Unit at any time.

4.4 Utility Obligation to Cure Adverse Effect: If, after the Customer meets all interconnection requirements, the operations of the Utility are adversely affecting the performance of the Unit or the Customer's premises, the Utility shall immediately take appropriate action to eliminate the adverse effect. If the Utility determines that it needs to upgrade or reconfigure its system the Customer will not be responsible for the cost of new or additional equipment beyond the point of common coupling between the Customer and the Utility.

V. ACCESS

5.1 Access to Premises: The Utility shall have access to the disconnect switch of the Unit at all times. At reasonable hours and upon reasonable notice consistent with Section III of this Agreement, or at any time without notice in the event of an emergency (as defined in paragraph 4.1), the Utility shall have access to the Premises.

5.2 Utility and Customer Representatives: The Utility shall designate, and shall provide to the Customer, the name and telephone number of a representative or representatives who can be reached at all times to allow the Customer to report an emergency and obtain the assistance of the Utility. For the purpose of allowing access to the premises, the Customer shall provide the Utility with the name and telephone number of a person who is responsible for providing access to the Premises.

5.3 Utility Right to Access Utility-Owned Facilities and Equipment: If necessary for the purposes of this Agreement, the Customer shall allow the Utility access to the Utility's equipment and facilities located on the Premises. To the extent that the Customer does not own all or any part of the property on which the Utility is required to locate its equipment or facilities to serve the

Customer under this Agreement, the Customer shall secure and provide in favor of the Utility the necessary rights to obtain access to such equipment or facilities, including easements if the circumstances so require.

VI. DISPUTE RESOLUTION

6.1 Good Faith Resolution of Disputes: Each Party agrees to attempt to resolve all disputes arising hereunder promptly, equitably and in a good faith manner.

6.2 Mediation: If a dispute arises under this Agreement, and if it cannot be resolved by the Parties within ten (10) business days after written notice of the dispute, the parties agree to submit the dispute to mediation by a mutually acceptable mediator, in a mutually convenient location in New York State, in accordance with the then current CPR Institute for Dispute Resolution Mediation Procedure, or to mediation by a mediator provided by the New York Public Service Commission. The Parties agree to participate in good faith in the mediation for a period of up to 90 days. If the Parties are not successful in resolving their disputes through mediation, then the parties may refer the dispute for resolution to the New York Public Service Commission, which shall maintain continuing jurisdiction over this Agreement.

6.3 Escrow: If there are amounts in dispute of more than two thousand dollars (\$2,000), the Customer shall either place such disputed amounts into an independent escrow account pending final resolution of the dispute in question, or provide to the Utility an appropriate irrevocable standby letter of credit in lieu thereof.

VII. INSURANCE

7.1 The Customer is not required to provide general liability insurance coverage as part of this Agreement, the SIR, or any other Utility requirement. Due to the risk of incurring damages however, the Public Service Commission recommends that every distributed generation customer protect itself with insurance.

7.2 Effect: The inability of the Utility to require the Customer to provide general liability insurance coverage for operation of the Unit is not a waiver of any rights the Utility may have to pursue remedies at law against the Customer to recover damages.

VIII. MISCELLANEOUS PROVISIONS

8.1 Beneficiaries: This Agreement is intended solely for the benefit of the Parties hereto, and if a Party is an agent, its principal. Nothing in this Agreement shall be construed to create any duty to, or standard of care with reference to, or any liability to, any other person.

8.2 Severability: If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction, such portion or provision shall be deemed separate and independent, and the remainder of this Agreement shall remain in full force and effect.

8.3 Entire Agreement: This Agreement constitutes the entire Agreement between the Parties and supersedes all prior agreements or understandings, whether verbal or written.

8.4 Waiver: No delay or omission in the exercise of any right under this Agreement shall impair any such right or shall be taken, construed or considered as a waiver or relinquishment thereof, but any such right may be exercised from time to time and as often as may be deemed expedient. In the event that any agreement or covenant herein shall be breached and thereafter waived, such waiver shall be limited to the particular breach so waived and shall not be deemed to waive any other breach hereunder.

8.5 Applicable Law: This Agreement shall be governed by and construed in accordance with the law of the State of New York.

8.6 Amendments: This Agreement shall not be amended unless the amendment is in writing and signed by the Utility and the Customer.

8.7 Force Majeure: For purposes of this Agreement, "Force Majeure Event" means any event: (a) that is beyond the reasonable control of the affected Party; and (b) that the affected Party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent they satisfy the preceding requirements: acts of war, public disorder, insurrection, or rebellion; floods, hurricanes, earthquakes, lightning, storms, and other natural calamities; explosions or fires; strikes, work stoppages, or labor disputes; embargoes; and sabotage. If a Force Majeure Event prevents a Party from fulfilling any obligations under this Agreement, such Party will promptly notify the other Party in writing, and will keep the other Party informed on a continuing basis of the scope and duration of the Force Majeure Event. The affected Party will specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the affected Party is taking to mitigate the effects of the event on its performance. The affected Party will be entitled to suspend or modify its performance of obligations under this Agreement, other than the obligation to make payments then due or becoming due under this Agreement, but only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of reasonable efforts. The affected Party will use reasonable efforts to resume its performance as soon as possible.

8.8 Assignment to Corporate Party: At any time during the term, the Customer may assign this Agreement to a corporation or other entity with limited liability, provided that the Customer obtains the consent of the Utility. Such consent will not be withheld unless the Utility can demonstrate that the corporate entity is not reasonably capable of performing the obligations of the assigning Customer under this Agreement.

8.9 Assignment to Individuals: At any time during the term, the Customer may assign this Agreement to another person, other than a corporation or other entity with limited liability, provided that the assignee is the owner, lessee, or is otherwise responsible for the Unit.

8.10 Permits and Approvals: Customer shall obtain all environmental and other permits lawfully required by governmental authorities prior to the construction and for the operation of the Unit during the term of this Agreement.

8.11 Limitation of Liability: Neither by inspection, if any, or non-rejection, nor in any other way, does the Utility give any warranty, express or implied, as to the adequacy, safety, or other characteristics of any structures, equipment, wires, appliances or devices owned, installed or maintained by the Customer or leased by the Customer from third parties, including without limitation the Unit and any structures, equipment, wires, appliances or devices appurtenant thereto.

ACCEPTED AND AGREED:

Customer Signature: 

Printed Name: Peter Dolgos

Title: Senior Vice President

Date: October 24, 2017

Utility Signature: 

Printed Name: David Kimiecik

Title: Vice President, Energy Services

Date: 3/26/18

**NEW YORK STATE STANDARDIZED CONTRACT
FOR INTERCONNECTION OF NEW DISTRIBUTED GENERATION UNITS WITH
CAPACITY OF 5 MW OR LESS CONNECTED IN PARALLEL WITH
UTILITY DISTRIBUTION SYSTEMS**

Customer Information:

Delaware River Solar, LLC
466 Yellow Mills Rd. #2
Farmington, NY 14522

Telephone: 646-998-6495

Unit Application / File No. 12381
Nonresidential Photovoltaic System – 2000 kW

Utility Information:

Rochester Gas & Electric
89 East Avenue
Rochester, NY 14649

Telephone: (585) 546-2700

Utility Account No. New Service

DEFINITIONS

Dedicated Facilities means the equipment and facilities on the Utility's system necessary to permit operation of the Unit in parallel with the Utility's system.

Delivery Service means the services the Utility may provide to deliver capacity or energy generated by Customer to a buyer to a delivery point(s), including related ancillary services.

"Net energy metering" means the use of a net energy meter to measure, during the billing period applicable to a customer-generator, the net amount of electricity supplied by an electric corporation and provided to the corporation by a customer-generator.

"SIR" means the New York State Standardized Interconnection Requirements for new distributed generation units with a nameplate capacity of 5 MW or less connected in parallel with the Utility's distribution system

"Unit" means the distributed generation unit with a nameplate capacity of 5 MW or less located on the Customer's premises at the time the Utility approves such Unit for operation in parallel with the Utility's system. This Agreement relates only to such Unit, but a new agreement shall not be required if the Customer makes physical alterations to the Unit that do not result in an increase in its nameplate generating capacity. The nameplate generating capacity of the Unit shall not exceed 5 MW, except for fuel cell electric generating units which shall not exceed 1.5 MW and farm waste generating units shall not exceed 2.0 MW.

I. TERM AND TERMINATION

1.1 Term: This Agreement shall become effective when executed by both Parties and shall continue in effect until terminated.

1.2 Termination: This Agreement may be terminated as follows:

- a. The Customer may terminate this Agreement at any time, by giving the Utility sixty (60) days' written notice.
- b. Failure by the Customer to seek final acceptance by the Utility within twelve (12) months after completion of the utility construction process described in the SIR shall automatically terminate this Agreement.
- c. Either Party may, by giving the other Party at least sixty (60) days' prior written notice, terminate this Agreement in the event that the other Party is in default of any of the material terms and conditions of this Agreement. The terminating Party shall specify in the notice the basis for the termination and shall provide a reasonable opportunity to cure the default.
- d. The Utility may, by giving the customer at least sixty (60) days' prior written notice, terminate this Agreement for cause. The Customer's non-compliance with an upgrade to the SIR, unless the Customer's installation is "grandfathered," shall constitute good cause.

1.3 Disconnection and Survival of Obligations: Upon termination of this Agreement the Unit will be disconnected from the Utility's electric system. The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

1.4 Suspension: This Agreement will be suspended during any period in which the Customer is not eligible for delivery service from the Utility

II. SCOPE OF AGREEMENT

2.1 Scope of Agreement: This Agreement relates solely to the conditions under which the Utility and the Customer agree that the Unit may be interconnected to and operated in parallel with the Utility's system.

2.2 Electricity Not Covered: The Utility shall have no duty under this Agreement to account for, pay for, deliver, or return in kind any electricity produced by the Facility and delivered into the Utility's System unless the system is net metered as described in Public Service Law Sections 66-j or 66-l.

III. INSTALLATION, OPERATION AND MAINTENANCE OF UNIT

3.1 Compliance with SIR: Subject to the provisions of this Agreement, the Utility shall be required to interconnect the Unit to the Utility's system, for purposes of parallel operation, if the Utility accepts the Unit as in compliance with the SIR. The Customer shall have a continuing obligation to maintain and operate the Unit in compliance with the SIR.

3.2 Observation of the Unit - Construction Phase: The Utility may, in its discretion and upon reasonable notice, conduct reasonable on-site verifications during the construction of the Unit. Whenever the Utility chooses to exercise its right to conduct observations herein it shall specify to the Customer its reasons for its decision to conduct the observation. For purposes of this paragraph and paragraphs 3.3 through 3.5, the term "on-site verification" shall not include testing of the Unit, and verification tests shall not be required except as provided in paragraphs 3.3 and 3.4.

3.3 Observation of the Unit - Ten-day Period: The Utility may conduct on-site verifications of the Unit and observe the execution of verification testing within a reasonable period of time, not exceeding ten (10) business days after system installation. The applicant's facility will be allowed to commence parallel operation upon satisfactory completion of the verification test. The applicant must have complied with and must continue to comply with all contractual and technical requirements.

3.4 Observation of the Unit - Post-Ten-day Period: If the Utility does not perform an on-site verification of the Unit and observe the execution of verification testing within the ten-day period, the Customer will send the Utility within five (5) days of the verification testing a written notification certifying that the Unit has been installed and tested in compliance with the SIR, the utility-accepted design and the equipment manufacturer's instructions. The Customer may begin to produce energy upon satisfactory completion of the verification test. After receiving the verification test notification, the Utility will either issue to the Customer a formal letter of acceptance for interconnection, or may request that the applicant and utility set a date and time to conduct an on-site verification of the Unit and make reasonable inquiries of the Customer, but only for purposes of determining whether the verification tests were properly performed. The Customer shall not be required to perform the verification tests a second time, unless irregularities appear in the verification test report or there are other objective indications that the tests were not properly performed in the first instance.

3.5 Observation of the Unit - Operations: The Utility may conduct on-site verification of the operations of the Unit after it commences operations if the Utility has a reasonable basis for doing so based on its responsibility to provide continuous and reliable utility service or as authorized by the provisions of the Utility's Retail Electric Tariff relating to the verification of customer installations generally.

3.6 Costs of Dedicated Facilities: During the term of this Agreement, the Utility shall design, construct and install the Dedicated Facilities. The Customer shall be responsible for paying the incremental capital cost of such Dedicated Facilities attributable to the Customer's Unit. All costs associated with the operation and maintenance of the Dedicated Facilities after the Unit first

produces energy shall be the responsibility of the Utility.

IV. DISCONNECTION OF THE UNIT

4.1 Emergency Disconnection: The Utility may disconnect the Unit, without prior notice to the Customer (a) to eliminate conditions that constitute a potential hazard to Utility personnel or the general public; (b) if pre-emergency or emergency conditions exist on the Utility system; (c) if a hazardous condition relating to the Unit is observed by a Utility inspection; or (d) if the Customer has tampered with any protective device. The Utility shall notify the Customer of the emergency if circumstances permit.

4.2 Non-Emergency Disconnection: The Utility may disconnect the Unit, after notice to the responsible party has been provided and a reasonable time to correct, consistent with the conditions, has elapsed, if (a) the Customer has failed to make available records of verification tests and maintenance of his protective devices; (b) the Unit system interferes with Utility equipment or equipment belonging to other customers of the Utility; (c) the Unit adversely affects the quality of service of adjoining customers.

4.3 Disconnection by Customer: The Customer may disconnect the Unit at any time.

4.4 Utility Obligation to Cure Adverse Effect: If, after the Customer meets all interconnection requirements, the operations of the Utility are adversely affecting the performance of the Unit or the Customer's premises, the Utility shall immediately take appropriate action to eliminate the adverse effect. If the Utility determines that it needs to upgrade or reconfigure its system the Customer will not be responsible for the cost of new or additional equipment beyond the point of common coupling between the Customer and the Utility.

V. ACCESS

5.1 Access to Premises: The Utility shall have access to the disconnect switch of the Unit at all times. At reasonable hours and upon reasonable notice consistent with Section III of this Agreement, or at any time without notice in the event of an emergency (as defined in paragraph 4.1), the Utility shall have access to the Premises.

5.2 Utility and Customer Representatives: The Utility shall designate, and shall provide to the Customer, the name and telephone number of a representative or representatives who can be reached at all times to allow the Customer to report an emergency and obtain the assistance of the Utility. For the purpose of allowing access to the premises, the Customer shall provide the Utility with the name and telephone number of a person who is responsible for providing access to the Premises.

5.3 Utility Right to Access Utility-Owned Facilities and Equipment: If necessary for the purposes of this Agreement, the Customer shall allow the Utility access to the Utility's equipment and facilities located on the Premises. To the extent that the Customer does not own all or any part of the property on which the Utility is required to locate its equipment or facilities to serve the

Customer under this Agreement, the Customer shall secure and provide in favor of the Utility the necessary rights to obtain access to such equipment or facilities, including easements if the circumstances so require.

VI. DISPUTE RESOLUTION

6.1 Good Faith Resolution of Disputes: Each Party agrees to attempt to resolve all disputes arising hereunder promptly, equitably and in a good faith manner.

6.2 Mediation: If a dispute arises under this Agreement, and if it cannot be resolved by the Parties within ten (10) business days after written notice of the dispute, the parties agree to submit the dispute to mediation by a mutually acceptable mediator, in a mutually convenient location in New York State, in accordance with the then current CPR Institute for Dispute Resolution Mediation Procedure, or to mediation by a mediator provided by the New York Public Service Commission. The Parties agree to participate in good faith in the mediation for a period of up to 90 days. If the Parties are not successful in resolving their disputes through mediation, then the parties may refer the dispute for resolution to the New York Public Service Commission, which shall maintain continuing jurisdiction over this Agreement.

6.3 Escrow: If there are amounts in dispute of more than two thousand dollars (\$2,000), the Customer shall either place such disputed amounts into an independent escrow account pending final resolution of the dispute in question, or provide to the Utility an appropriate irrevocable standby letter of credit in lieu thereof.

VII. INSURANCE

7.1 The Customer is not required to provide general liability insurance coverage as part of this Agreement, the SIR, or any other Utility requirement. Due to the risk of incurring damages however, the Public Service Commission recommends that every distributed generation customer protect itself with insurance.

7.2 Effect: The inability of the Utility to require the Customer to provide general liability insurance coverage for operation of the Unit is not a waiver of any rights the Utility may have to pursue remedies at law against the Customer to recover damages.

VIII. MISCELLANEOUS PROVISIONS

8.1 Beneficiaries: This Agreement is intended solely for the benefit of the Parties hereto, and if a Party is an agent, its principal. Nothing in this Agreement shall be construed to create any duty to, or standard of care with reference to, or any liability to, any other person.

8.2 Severability: If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction, such portion or provision shall be deemed separate and independent, and the remainder of this Agreement shall remain in full force and effect.

8.3 Entire Agreement: This Agreement constitutes the entire Agreement between the Parties and supersedes all prior agreements or understandings, whether verbal or written.

8.4 Waiver: No delay or omission in the exercise of any right under this Agreement shall impair any such right or shall be taken, construed or considered as a waiver or relinquishment thereof, but any such right may be exercised from time to time and as often as may be deemed expedient. In the event that any agreement or covenant herein shall be breached and thereafter waived, such waiver shall be limited to the particular breach so waived and shall not be deemed to waive any other breach hereunder.

8.5 Applicable Law: This Agreement shall be governed by and construed in accordance with the law of the State of New York.

8.6 Amendments: This Agreement shall not be amended unless the amendment is in writing and signed by the Utility and the Customer.

8.7 Force Majeure: For purposes of this Agreement, "Force Majeure Event" means any event: (a) that is beyond the reasonable control of the affected Party; and (b) that the affected Party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent they satisfy the preceding requirements: acts of war, public disorder, insurrection, or rebellion; floods, hurricanes, earthquakes, lightning, storms, and other natural calamities; explosions or fires; strikes, work stoppages, or labor disputes; embargoes; and sabotage. If a Force Majeure Event prevents a Party from fulfilling any obligations under this Agreement, such Party will promptly notify the other Party in writing, and will keep the other Party informed on a continuing basis of the scope and duration of the Force Majeure Event. The affected Party will specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the affected Party is taking to mitigate the effects of the event on its performance. The affected Party will be entitled to suspend or modify its performance of obligations under this Agreement, other than the obligation to make payments then due or becoming due under this Agreement, but only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of reasonable efforts. The affected Party will use reasonable efforts to resume its performance as soon as possible.

8.8 Assignment to Corporate Party: At any time during the term, the Customer may assign this Agreement to a corporation or other entity with limited liability, provided that the Customer obtains the consent of the Utility. Such consent will not be withheld unless the Utility can demonstrate that the corporate entity is not reasonably capable of performing the obligations of the assigning Customer under this Agreement.

8.9 Assignment to Individuals: At any time during the term, the Customer may assign this Agreement to another person, other than a corporation or other entity with limited liability, provided that the assignee is the owner, lessee, or is otherwise responsible for the Unit.

8.10 Permits and Approvals: Customer shall obtain all environmental and other permits lawfully required by governmental authorities prior to the construction and for the operation of the Unit during the term of this Agreement.

8.11 Limitation of Liability: Neither by inspection, if any, or non-rejection, nor in any other way, does the Utility give any warranty, express or implied, as to the adequacy, safety, or other characteristics of any structures, equipment, wires, appliances or devices owned, installed or maintained by the Customer or leased by the Customer from third parties, including without limitation the Unit and any structures, equipment, wires, appliances or devices appurtenant thereto.

ACCEPTED AND AGREED:

Customer Signature:



Printed Name:

Peter Dolgos

Title:

Senior Vice President

Date:

October 24, 2017

Utility Signature:



Printed Name:

David Kimiecik

Title:

Vice President, Energy Services

Date:

3/20/18

**NEW YORK STATE STANDARDIZED CONTRACT
FOR INTERCONNECTION OF NEW DISTRIBUTED GENERATION UNITS WITH
CAPACITY OF 5 MW OR LESS CONNECTED IN PARALLEL WITH
UTILITY DISTRIBUTION SYSTEMS**

Customer Information:

Delaware River Solar, LLC
466 Yellow Mills Rd
Farmington, NY 14522

Utility Information:

Rochester Gas & Electric
89 East Avenue
Rochester, NY 14649

Telephone: 646-998-6495

Telephone: (585) 546-2700

Unit Application / File No. 12271
Nonresidential Photovoltaic System – 2000 kW

Utility Account No. New Service

DEFINITIONS

Dedicated Facilities means the equipment and facilities on the Utility's system necessary to permit operation of the Unit in parallel with the Utility's system.

Delivery Service means the services the Utility may provide to deliver capacity or energy generated by Customer to a buyer to a delivery point(s), including related ancillary services.

"Net energy metering" means the use of a net energy meter to measure, during the billing period applicable to a customer-generator, the net amount of electricity supplied by an electric corporation and provided to the corporation by a customer-generator.

"SIR" means the New York State Standardized Interconnection Requirements for new distributed generation units with a nameplate capacity of 5 MW or less connected in parallel with the Utility's distribution system

"Unit" means the distributed generation unit with a nameplate capacity of 5 MW or less located on the Customer's premises at the time the Utility approves such Unit for operation in parallel with the Utility's system. This Agreement relates only to such Unit, but a new agreement shall not be required if the Customer makes physical alterations to the Unit that do not result in an increase in its nameplate generating capacity. The nameplate generating capacity of the Unit shall not exceed 5 MW, except for fuel cell electric generating units which shall not exceed 1.5 MW and farm waste generating units shall not exceed 2.0 MW.

I. TERM AND TERMINATION

1.1 Term: This Agreement shall become effective when executed by both Parties and shall continue in effect until terminated.

1.2 Termination: This Agreement may be terminated as follows:

- a. The Customer may terminate this Agreement at any time, by giving the Utility sixty (60) days' written notice.
- b. Failure by the Customer to seek final acceptance by the Utility within twelve (12) months after completion of the utility construction process described in the SIR shall automatically terminate this Agreement.
- c. Either Party may, by giving the other Party at least sixty (60) days' prior written notice, terminate this Agreement in the event that the other Party is in default of any of the material terms and conditions of this Agreement. The terminating Party shall specify in the notice the basis for the termination and shall provide a reasonable opportunity to cure the default.
- d. The Utility may, by giving the customer at least sixty (60) days' prior written notice, terminate this Agreement for cause. The Customer's non-compliance with an upgrade to the SIR, unless the Customer's installation is "grandfathered," shall constitute good cause.

1.3 Disconnection and Survival of Obligations: Upon termination of this Agreement the Unit will be disconnected from the Utility's electric system. The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

1.4 Suspension: This Agreement will be suspended during any period in which the Customer is not eligible for delivery service from the Utility

II. SCOPE OF AGREEMENT

2.1 Scope of Agreement: This Agreement relates solely to the conditions under which the Utility and the Customer agree that the Unit may be interconnected to and operated in parallel with the Utility's system.

2.2 Electricity Not Covered: The Utility shall have no duty under this Agreement to account for, pay for, deliver, or return in kind any electricity produced by the Facility and delivered into the Utility's System unless the system is net metered as described in Public Service Law Sections 66-j or 66-l.

III. INSTALLATION, OPERATION AND MAINTENANCE OF UNIT

3.1 Compliance with SIR: Subject to the provisions of this Agreement, the Utility shall be required to interconnect the Unit to the Utility's system, for purposes of parallel operation, if the Utility accepts the Unit as in compliance with the SIR. The Customer shall have a continuing obligation to maintain and operate the Unit in compliance with the SIR.

3.2 Observation of the Unit - Construction Phase: The Utility may, in its discretion and upon reasonable notice, conduct reasonable on-site verifications during the construction of the Unit. Whenever the Utility chooses to exercise its right to conduct observations herein it shall specify to the Customer its reasons for its decision to conduct the observation. For purposes of this paragraph and paragraphs 3.3 through 3.5, the term "on-site verification" shall not include testing of the Unit, and verification tests shall not be required except as provided in paragraphs 3.3 and 3.4.

3.3 Observation of the Unit - Ten-day Period: The Utility may conduct on-site verifications of the Unit and observe the execution of verification testing within a reasonable period of time, not exceeding ten (10) business days after system installation. The applicant's facility will be allowed to commence parallel operation upon satisfactory completion of the verification test. The applicant must have complied with and must continue to comply with all contractual and technical requirements.

3.4 Observation of the Unit - Post-Ten-day Period: If the Utility does not perform an on-site verification of the Unit and observe the execution of verification testing within the ten-day period, the Customer will send the Utility within five (5) days of the verification testing a written notification certifying that the Unit has been installed and tested in compliance with the SIR, the utility-accepted design and the equipment manufacturer's instructions. The Customer may begin to produce energy upon satisfactory completion of the verification test. After receiving the verification test notification, the Utility will either issue to the Customer a formal letter of acceptance for interconnection, or may request that the applicant and utility set a date and time to conduct an on-site verification of the Unit and make reasonable inquiries of the Customer, but only for purposes of determining whether the verification tests were properly performed. The Customer shall not be required to perform the verification tests a second time, unless irregularities appear in the verification test report or there are other objective indications that the tests were not properly performed in the first instance.

3.5 Observation of the Unit - Operations: The Utility may conduct on-site verification of the operations of the Unit after it commences operations if the Utility has a reasonable basis for doing so based on its responsibility to provide continuous and reliable utility service or as authorized by the provisions of the Utility's Retail Electric Tariff relating to the verification of customer installations generally.

3.6 Costs of Dedicated Facilities: During the term of this Agreement, the Utility shall design, construct and install the Dedicated Facilities. The Customer shall be responsible for paying the incremental capital cost of such Dedicated Facilities attributable to the Customer's Unit. All costs associated with the operation and maintenance of the Dedicated Facilities after the Unit first

produces energy shall be the responsibility of the Utility.

IV. DISCONNECTION OF THE UNIT

4.1 Emergency Disconnection: The Utility may disconnect the Unit, without prior notice to the Customer (a) to eliminate conditions that constitute a potential hazard to Utility personnel or the general public; (b) if pre-emergency or emergency conditions exist on the Utility system; (c) if a hazardous condition relating to the Unit is observed by a Utility inspection; or (d) if the Customer has tampered with any protective device. The Utility shall notify the Customer of the emergency if circumstances permit.

4.2 Non-Emergency Disconnection: The Utility may disconnect the Unit, after notice to the responsible party has been provided and a reasonable time to correct, consistent with the conditions, has elapsed, if (a) the Customer has failed to make available records of verification tests and maintenance of his protective devices; (b) the Unit system interferes with Utility equipment or equipment belonging to other customers of the Utility; (c) the Unit adversely affects the quality of service of adjoining customers.

4.3 Disconnection by Customer: The Customer may disconnect the Unit at any time.

4.4 Utility Obligation to Cure Adverse Effect: If, after the Customer meets all interconnection requirements, the operations of the Utility are adversely affecting the performance of the Unit or the Customer's premises, the Utility shall immediately take appropriate action to eliminate the adverse effect. If the Utility determines that it needs to upgrade or reconfigure its system the Customer will not be responsible for the cost of new or additional equipment beyond the point of common coupling between the Customer and the Utility.

V. ACCESS

5.1 Access to Premises: The Utility shall have access to the disconnect switch of the Unit at all times. At reasonable hours and upon reasonable notice consistent with Section III of this Agreement, or at any time without notice in the event of an emergency (as defined in paragraph 4.1), the Utility shall have access to the Premises.

5.2 Utility and Customer Representatives: The Utility shall designate, and shall provide to the Customer, the name and telephone number of a representative or representatives who can be reached at all times to allow the Customer to report an emergency and obtain the assistance of the Utility. For the purpose of allowing access to the premises, the Customer shall provide the Utility with the name and telephone number of a person who is responsible for providing access to the Premises.

5.3 Utility Right to Access Utility-Owned Facilities and Equipment: If necessary for the purposes of this Agreement, the Customer shall allow the Utility access to the Utility's equipment and facilities located on the Premises. To the extent that the Customer does not own all or any part of the property on which the Utility is required to locate its equipment or facilities to serve the

Customer under this Agreement, the Customer shall secure and provide in favor of the Utility the necessary rights to obtain access to such equipment or facilities, including easements if the circumstances so require.

VI. DISPUTE RESOLUTION

6.1 Good Faith Resolution of Disputes: Each Party agrees to attempt to resolve all disputes arising hereunder promptly, equitably and in a good faith manner.

6.2 Mediation: If a dispute arises under this Agreement, and if it cannot be resolved by the Parties within ten (10) business days after written notice of the dispute, the parties agree to submit the dispute to mediation by a mutually acceptable mediator, in a mutually convenient location in New York State, in accordance with the then current CPR Institute for Dispute Resolution Mediation Procedure, or to mediation by a mediator provided by the New York Public Service Commission. The Parties agree to participate in good faith in the mediation for a period of up to 90 days. If the Parties are not successful in resolving their disputes through mediation, then the parties may refer the dispute for resolution to the New York Public Service Commission, which shall maintain continuing jurisdiction over this Agreement.

6.3 Escrow: If there are amounts in dispute of more than two thousand dollars (\$2,000), the Customer shall either place such disputed amounts into an independent escrow account pending final resolution of the dispute in question, or provide to the Utility an appropriate irrevocable standby letter of credit in lieu thereof.

VII. INSURANCE

7.1 The Customer is not required to provide general liability insurance coverage as part of this Agreement, the SIR, or any other Utility requirement. Due to the risk of incurring damages however, the Public Service Commission recommends that every distributed generation customer protect itself with insurance.

7.2 Effect: The inability of the Utility to require the Customer to provide general liability insurance coverage for operation of the Unit is not a waiver of any rights the Utility may have to pursue remedies at law against the Customer to recover damages.

VIII. MISCELLANEOUS PROVISIONS

8.1 Beneficiaries: This Agreement is intended solely for the benefit of the Parties hereto, and if a Party is an agent, its principal. Nothing in this Agreement shall be construed to create any duty to, or standard of care with reference to, or any liability to, any other person.

8.2 Severability: If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction, such portion or provision shall be deemed separate and independent, and the remainder of this Agreement shall remain in full force and effect.

8.3 Entire Agreement: This Agreement constitutes the entire Agreement between the Parties and supersedes all prior agreements or understandings, whether verbal or written.

8.4 Waiver: No delay or omission in the exercise of any right under this Agreement shall impair any such right or shall be taken, construed or considered as a waiver or relinquishment thereof, but any such right may be exercised from time to time and as often as may be deemed expedient. In the event that any agreement or covenant herein shall be breached and thereafter waived, such waiver shall be limited to the particular breach so waived and shall not be deemed to waive any other breach hereunder.

8.5 Applicable Law: This Agreement shall be governed by and construed in accordance with the law of the State of New York.

8.6 Amendments: This Agreement shall not be amended unless the amendment is in writing and signed by the Utility and the Customer.

8.7 Force Majeure: For purposes of this Agreement, "Force Majeure Event" means any event: (a) that is beyond the reasonable control of the affected Party; and (b) that the affected Party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent they satisfy the preceding requirements: acts of war, public disorder, insurrection, or rebellion; floods, hurricanes, earthquakes, lightning, storms, and other natural calamities; explosions or fires; strikes, work stoppages, or labor disputes; embargoes; and sabotage. If a Force Majeure Event prevents a Party from fulfilling any obligations under this Agreement, such Party will promptly notify the other Party in writing, and will keep the other Party informed on a continuing basis of the scope and duration of the Force Majeure Event. The affected Party will specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the affected Party is taking to mitigate the effects of the event on its performance. The affected Party will be entitled to suspend or modify its performance of obligations under this Agreement, other than the obligation to make payments then due or becoming due under this Agreement, but only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of reasonable efforts. The affected Party will use reasonable efforts to resume its performance as soon as possible.

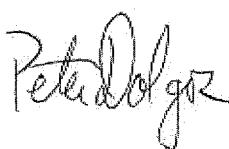
8.8 Assignment to Corporate Party: At any time during the term, the Customer may assign this Agreement to a corporation or other entity with limited liability, provided that the Customer obtains the consent of the Utility. Such consent will not be withheld unless the Utility can demonstrate that the corporate entity is not reasonably capable of performing the obligations of the assigning Customer under this Agreement.

8.9 Assignment to Individuals: At any time during the term, the Customer may assign this Agreement to another person, other than a corporation or other entity with limited liability, provided that the assignee is the owner, lessee, or is otherwise responsible for the Unit.

8.10 Permits and Approvals: Customer shall obtain all environmental and other permits lawfully required by governmental authorities prior to the construction and for the operation of the Unit during the term of this Agreement.

8.11 Limitation of Liability: Neither by inspection, if any, or non-rejection, nor in any other way, does the Utility give any warranty, express or implied, as to the adequacy, safety, or other characteristics of any structures, equipment, wires, appliances or devices owned, installed or maintained by the Customer or leased by the Customer from third parties, including without limitation the Unit and any structures, equipment, wires, appliances or devices appurtenant thereto.


ACCEPTED AND AGREED:

Customer Signature: 

Printed Name: Peter Dolgos

Title: Senior Vice President

Date: October 24, 2017

Utility Signature: 

Printed Name: David Kimiecik

Title: Vice President, Energy Services

Date: 3/15/18